

Institution: University of Huddersfield
Unit of Assessment: UoA32 Art and Design: History, Practice and Theory
<p>1. Unit context and structure, research and impact strategy</p> <p>Research Structure Unit of Assessment 32 is comprised of 35 members of staff (29.2 FTE) from the School of Art, Design and Architecture. The School houses three departments in the fields of Art and Communication, Fashion and Textiles and Architecture and 3D Design. It is located in the Barbara Hepworth Building (since September 2020); an open-plan studio environment for the research and development of creative histories, theories and practices of art, design and architecture. It is also a space that facilitated and supports transdisciplinary exchange. There are four research centres within the School, three of which are focused on this Unit: Centre for Cultural Ecologies in Art, Design and Architecture, Technical Textiles Research Centre and Innovative Design Lab. The research centres have generated opportunities for cross-disciplinary working and encouraged thinking practices in the formations and receptions of art, design and visual culture (sculpture, photography, speculative design, textile art, photography, aesthetic philosophy, visual culture, cultural theory).</p> <p><u>Centre for Cultural Ecologies in Art, Design and Architecture (CEADA)</u> This research centre (led by Bailey) offers opportunities for transdisciplinary and cross-disciplinary working across art and design history, practice and theory, as well as architecture. It is the largest research centre in the School with 25 doctoral holding members and a postgraduate research community of approximately 81 research students (MA by Research and PhD, which includes staff undertaking doctorates, of which there are currently 24). The membership is representative of the centre's engagement with the idea of cultural ecology as a nodal network of exchanges and interactions, out of which new ideas, forms and practices emerge.</p> <p>Examples of projects underlying the ethos and themes of the centre include: Clear's Synthetic Spaces; a project using 3D laser scanning to create evocative composite digital images and computer animations of three sites in Huddersfield town (Castle Hill, Queensgate Indoor Market and the Railway Station). Scanning technologies were used to create complex narrative 'portraits' of their spatial, tectonic and experiential qualities for curatorial display. Transdisciplinary thinking through the use of 3D scanning and modelling technologies is also evident in Clear's The Chthonopolis which focused on the literary conventions of science fiction through artistic-architectural speculative design. Townsley's The Forever-Do Game, developed in collaboration with Joint Research Centre (JRC) researcher Carlo Ferigato and the MC3 research group at the Milano-Bicocca University, Italy, explored the idea of 'fishing' into datasets generated by coordinated behaviours. The collaboration between a sculptor and a computer scientist led to a systems-based sculpture using data from human interactions. Brass Art's (Pettican) Gestured is an installation involving the creation of twenty new sculptural works made in response to Chetham's Library, the oldest public library in Britain (founded 1653). Commissioned by Arts & Heritage, the artworks included gestural forms in William Cowper's anatomical reference books, the prints of William Hogarth, the books of Renaissance polymath Athanasius Kircher and the notations of John Dee. The photobook Mother River (Preston) presents a four-year research project which tells her attempts to photograph the entire 6,211km Yangtze River at precise 100m intervals with a large-format film camera. These examples demonstrate the significance and value accorded to research-through-creative practice from within this research centre.</p> <p><u>Technical Textiles Research Centre (TTRC)</u> The centre's researchers (led by Goswami, including Rana and Hebden) are cross-School, with associate members from the Schools of Applied Sciences and Computing and Engineering (approximately 16). The primary focus of textiles research in this centre covers industrial and manufacturing textile innovations with other disciplines such as materials science and engineering and with commercial partners. The centre fosters transdisciplinary research by bringing together expertise in the fields of digital technology, textile processing cellulose science, medical textiles,</p>

fibre and polymer chemistry and surface functionalisation. The centre's ambition to re-establish the Kirklees region as a world leader in textiles has led to research funding successes and outcomes including Goswami's involvement as a co-investigator for the **Future Fashion Factory** project which forms part of the Arts and Humanities Research Council (AHRC) £80 million Creative Industries Cluster Programme. Its investigations have led to public engagement activities with **WOVEN in Kirklees** (the biennale festival of textiles) and in 2018, Goswami collaborated with the artist Holly Hendry for an installation at **Yorkshire Sculpture Park**. Henry's sculpture *The Dump is Full of Images* provides a commentary on the use and re-use of materials, drawing on Goswami's research into synthetic skin membranes. TTRC is playing a key role in research linked to building the creative economy of the fashion, textiles and technology sector.

Innovative Design Lab (IDL) research centre

IDL's **15 members** (led by Tzortzopoulos) conduct theory based and applied research into design and the built environment, pushing the impact of design thinking and practice to new areas. It cuts across the areas of architectural design, construction management, digital technologies, new product development, engineering, social sciences and healthcare. Primarily focused on design challenges and real-world problems, the lab's UoA32 related research has focused on design for healthcare and wellbeing initially through the **Knowledge Transfer Partnership (KTP) project Paxman Scalp Cooling Cap** (Unver). The research has focused on the design and development of a novel manufacturing approach to cooling caps for the prevention of Chemotherapy-induced-Alopecia, which led to the establishment of the **£1M Paxman research centre**, 50% funded by industry (Paxman). Other international research collaborations include the **Erasmus** funded project (£25,820) to improve **technical drawing using VR and AR tools** (Unver and Huerta Cardoso). The centre has delivered 29 conferences, workshops and symposia during the census period, many of which were international. The centre supports 3 members of staff from UoA32 in developing their PhD studies.

Strategic Research Goals (REF 2014)

The key institutional research aims for 2013-18 were to **a) strengthen and enhance our research capability; b) contribute to economic, social and cultural development** and **c) enrich teaching through research and innovation**. The School submitted its first REF in 2014 and the strategic goals set for the following census period have addressed the need to build research across all stages of academic career, from pre-doctoral to early career, mid-career to professorial standing. In line with the university's institutional aims, the Unit established three strategic goals that are reported on below. These helped to generate a culture for art and design history, practice and theory which includes a range of initiatives to support research development, research-informed teaching and innovation and social and cultural impact.

Strategic Goal 1 focused on: **a) the development of original, independent critical thinking in practice, b) fostering knowledge advances within art and design** and **c) understanding relevant research methodologies and their applications within theory and practice**.

To achieve this, we identified thematic clusters of research enquiry within an expanding field of art and design practices in the creative and cultural industries (commercial, artistic, digital, community, place-based). These include:

- 1) artistic engagements with heritage and archival contexts
- 2) design publication practices, platforms and curation
- 3) art-science-technology relations
- 4) environments/ecologies and fieldwork practices
- 5) transdisciplinary working in technical textiles
- 6) design for healthcare and wellbeing.

These clusters have led to the generation of a range outcomes and methodological approaches, through discursive writing practices in art, design and architecture (Arya, Bailey, Coles, Dyer, Massey, Roberts) or in the use of new technologies and material processes in artistic research

such as light-based scanning (X-box Kinect), 4D scanning, moving image installation, photography and data capture of interior environments (Clear, Hudson, Pettican, Preston, Townsley).

Strategic Goal 2 sought to increase: **a) participation in national and international contexts, b) appreciation of the standards of good research practice and c) research funding.**

Academics presented their work nationally and internationally through conferences, exhibitions and workshops. The School has actively encouraged participation in larger scale international conference platforms with a range of staff at different stages of career speaking at, for example, College Art Association (CAA), International Symposium of Electronic Art (ISEA), Transimage and COST Action IS71307. Participation also extends to engagement with research at national levels. For example, a range of conferences and symposia have been generated within the Unit enabling staff to both participate and run these events. Conferences include: International Conference for Creative Pattern Cutting (2015), Transitions: Rethinking Textiles and Surfaces (1) and Transitions: Material Revolution (2) (2014 and 2018 respectively), Putting Space into Action (supported by Henry Moore Institute, 2016), Sculpture as Fieldwork (with the Henry Moore Institute, 2019) and SAT in the Circular Economy (2020). These examples show how the standards of research practice have evolved and strengthened during this census period with active staff participation in external research events and in the realisation of conferences and symposia from within the research centres. This raised the visibility and awareness of the unit's specific research culture and practices. The Unit has increased its research funding substantially within this census period (see Section 3: Income for further details). For REF2014, the total number of grant-holding income was £130,389. In the academic year 2019/2020, the total research grant income was £717,200.

Strategic Goal 3 aimed to: **a) commit to continued professional development b) enable research skills in support of cross-disciplinary practice and c) support a range of career opportunities within and outside academia.**

The Unit ensured that continued professional development is an opportunity for all staff members. Staff have been encouraged to develop research plans to guide their strategic thinking and to help build their research career portfolios. The research centres play an active role in working with members at all stages of career development and this extends to workshops and activities linked to the School's Research Programme. Sessions have included: portfolio development, funding bid proposal writing, research degree supervisory training and writing for publication workshops.

Career opportunities for creative practices both inside and outside academia have been supported particularly in relation to the fractional status of many staff who, as practising artists and designers, bring a range of new insights and ways of doing research in commercial and cultural contexts back into the School as educators. Our links to the creative and cultural industries and to the research opportunities this sector provides is supported and encouraged through investment and mentoring support for academics who are directly linked to cultural organisations, art galleries, design studios and non HEI funding bodies. This is evidenced by the 25 multi-component submissions produced, which showcase outcomes including artefacts, exhibitions, journal articles, book chapters, commercial patents and public events.

Prizes and Awards

External recognition includes a range of prizes and awards, such as: Andrew's AHRC award for an online image gallery (£4000) (2014) and Excellence Award of the 9th Lausanne to Beijing International Fiber Art Biennial, Shenzhen, China (2016). Clear's 'Post-singularity City' was part of the 'What is Radical Today? 40 Positions on Architecture' exhibition at the Royal Academy in London in 2019. Halbert was appointed to fashion business and cultural studies in 2017 and in 2018 received an AHRC/BBC Radio 3 New Generation Thinker Award for her research into the post-war 'rag trade', whilst Preston received a Sony Award Prize, Landscape category in 2019, for her work on the Yangtze river in China. In 2017, Barber was commissioned to produce a work for Hull train station for Hull City of Culture. In 2018, Temporary Contemporary secured Innovation of the Year in the National Association of British Market Authorities awards. In 2019, Townsley was the recipient of an EU funded Artist-in-Residency for SciArt and the Joint Research Centre

for the EU in Ispra and Clear was awarded the Excellent Project Award in the 4th CSCEC Cup Western 5+2 Biennial Exhibition of Environmental Art and Design for the project Synthetic Spaces.

Strategic Research Goals (future REF cycle)

The University Research Strategy (2020-2025) encourages interdisciplinary societal and economic grand challenges. Its Areas of Strategic Research Importance (ASRIs) are focused on end user/audience need. This Unit has selected materials, health and wellbeing, sustainable environment and creativity as contexts to focus on and work within. The future strategic research goals outlined below will continue to build our portfolio of creative and cultural research practices, foster transdisciplinary research, build on art and design innovation and industry partnerships, knowledge transfer, research collaborations and generate research income specific to the creative and cultural industries. This is particularly prescient in the context of COVID-19 and the necessary roadmaps to creative and cultural recovery for this sector.

Strategic vision: to generate innovative research-through-practice with the development of thematic clusters responsive to: **a) the University's ASRIS; b) to the UK funding landscape; c) to the end user/audience; d) to global grand challenges** (e.g. climate change, environmental issues, systemic inequalities, digital technologies, economic growth for the creative and cultural industries (commercial, heritage and third-sector), emergent values of cultural production, happiness, health and wellbeing).

Strategic Goal 1: Develop thematic clusters linked to ASRIs (materials, health and wellbeing, sustainable environment and creativity) and build on international, national and local collaborations with external partners (academic and industry). These clusters will be housed in the three research centres and generate opportunities for collaborative and impactful projects.

Rationale: The research base for this Unit has grown considerably since REF2014. There is now a critical mass of expertise at different levels which will benefit from strategic alignment to the new University Research Strategy. Thematic groupings will allow the research ecology of the School to grow. In particular, early and mid-career researchers with aspirations to develop a specific area will be encouraged and supported. This extends to the development of research active portfolios that are focused on supporting research income generation, postgraduate research culture, external partnerships and collaborations. These clusters will respond to the School's research targets which in turn will meet University wide strategic aims for the next REF census period.

Strategic Goal 2: Continue to shape the culture of transdisciplinary research practices. The Barbara Hepworth Building is a networked environment where a range of creative practices (art, design and architecture) coexist and support research exchanges. This extends to the transdisciplinary potential for our Unit to collaborate across disciplines within the University (science, business, human and healthcare, music, performance and history) and through projects with other HEIs and external organisations and partners. The role of transdisciplinary working in the contexts of global grand challenges, in relation to the changing landscape of funding in the UK and to the creative and cultural industries, is particularly significant for the Unit. In developing research exchanges across subject areas and working with a range of themes, a mixed ecology of researchers is given opportunity to flourish. This extends to postgraduate research students, early career to mid-career researchers and senior academics working together and across disciplinary fields.

Rationale: to embrace the reach and potential of transdisciplinary working on projects that are larger in scale and include multiple partners/stakeholder interests/users and audiences. This is particularly specific to the areas of climate change, systemic inequalities and future economic growth for the creative and cultural industries. The futures of creative practice and extended collaborations provide new opportunities for research growth in the Unit.

Strategic Goal 3: Continue to innovate with methodologies, approaches, technologies in art and design, drawing upon the range of resources provided by the Barbara Hepworth Building. With new ways of collaborative working across areas of strategic research importance, it is necessary

to keep building the Unit's resource of open source non-dominant research methodologies. This is targeted towards approaches in creative practice, artistic research, design thinking, participatory research (co-production and co-creation), critical and cultural modes of analysis, digital art and design and action research.

Rationale: the visibility and awareness of the significance of art and design research across a range of contexts and disciplines is necessary for building a value culture of and for exchange. This is also particularly significant in relation to the innovative processes generated with and by the use of technologies, equipment and specialist facilities. For example, the Phidias Lab in the Barbara Hepworth Building is a digital lab providing the latest technologies in augmented reality, virtual reality, motion capture and high-performance visualisation. Research development and design innovations in this area will generate new methodologies and approaches to working with technologies in research practice.

Strategic Goal 4: Design, develop and implement public/user/audience engagement and/or co-creative/co-productive strategies into research and pathways to impact. One of the key questions underpinning collaborative research with academic and non-academic partners is: how to effectively embed stakeholder/user group and audience engagement into research? Revisiting the ethics of participatory research and embedded user engagement, visibility and agency within research processes will help to generate new approaches to co-creation/co-production/co-design as well as socially engaged practices. This will also ensure the impact of the research produced by the Unit is clear and wide reaching. The School's research mentoring system provides staff with opportunities to develop research action plans with embedded impact activities. These will be reviewed by Research Centre Directors and aligned to strategic research goals within the Unit and the University more widely. This will also inform the investment of the School's Research Funds to support the generation of outputs, sabbaticals and other research related activities.

Rationale: There is a need for researchers to continuously focus on research beneficiaries. This links directly to being able to understand, build into projects, and track research impact (whether economic, social, cultural and/or wellbeing) in a variety of ways. In this respect, public engagement strategies will be useful to some of the research practices represented within this Unit in supporting and broadening the reach of our research impact.

Impactful Research and Case Studies

Our impact strategy is guided by the University's focus on delivering 'user-inspired and applied research with impact'. From 2015, we set out to be a research-engaged Unit that embeds an impact culture into our activities. This was achieved through differing approaches to engagement, direct links with industry and civic societies.

The Unit has facilitated opportunities for impact to become embedded into research development and for future impacts to be identified and encouraged. For example, researchers were supported to engage with stakeholders and research users through the University's EU for Researchers Night and University Public Impact and Engagement (PIE) network. In the area of art and design, both social and cultural impact has, to some extent, been measured by public and user engagement, whether through curatorial strategies, access to arts and culture or user testing as part of healthcare design. In 2018, 1.5 FTE research assistants were appointed to work closely with staff in the development of research impact. In addition, 200 hours of additional researcher's time per year was allocated and targeted funding provided to staff leading on impact. The impact case studies identified for this census period include:

- Coles' project **Extended Play (EP)**, a collaboratively-formed book series (Sternberg Press), offers a new approach to publishing and a platform for creative practices that fall between traditional understandings of art, design and architecture. For example, the edited series Vol.2 Design Fiction generated new ways of presenting a transdisciplinary approach to design writing, influenced curatorial strategies of exhibitions at the Vitra Design Museum, Space Electronic (Venice Architecture Biennale) and informed the general editorial direction of Sternberg Press and its publishing portfolio.

- Unver's **Paxman Scalp Cooling Cap** has focused on the design and development of a novel manufacturing approach to cooling caps for the prevention of Chemotherapy-induced-Alopecia. As a partnership with the global company Paxman Coolers Ltd, the economic and commercial impact of the patented product is evidenced. Moreover, wellbeing impacts have been generated with users of the product, which benefit from reduced hair loss when undertaking chemotherapy.
- Bailey, Clear, Fitzpatrick, Powell, Swindells focused on strengthening and sustaining a vibrant creative and cultural offer in Huddersfield town in partnership with Kirklees Council. **ROTOR and Temporary Contemporary** are two initiatives which generated cultural impact with a range of beneficiaries, including the council itself, particularly in relation to the use of retail units as meanwhile spaces for creative activity on the high street.

Embedding impact strategies into research planning continues to be resourced through specialist support and training. The Unit developed its impact strategy by fostering, supporting and valuing art and design research as a driver of and for positive change. This includes societal and cultural impacts as well as commercial innovation in knowledge transfer particularly in the area of product design and commercial patenting.

The impact case studies selected for UoA32 reflect the breadth of impacts, including economic, cultural, societal and wellbeing. For example, much of the research undertaken by staff practitioners has public and audience engagement embedded into outcomes, whether through dissemination in exhibitions and post-production events, or in the methodologies used to monitor cultural and societal impacts. This includes audience, user and beneficiary engagements with a range of projects.

Supporting an Open Research Environment and a Culture of Research Integrity

Researchers have been actively encouraged to publish in high quality, open access journals and books and have received **£19,443** of financial support to facilitate this. Training sessions were held by library services, as well as publishing houses and exhibition platforms, to raise awareness of the relevant University policies, opportunities and benefits of open access. Outputs from the REF period have been uploaded for open access to the University's repository (eprints.hud.ac.uk), and since 2018, to its PURE research information management system. All submitted staff have profiles on at least one major academic social networking site, such as ORCID or ResearchGate, and these are used by staff to make outputs broadly available for access in accordance with each Publisher's policy. As part of the Unit's commitment to **open research**, the presentation of **exhibitions, digital archives and creative folios** online as **open source resources** have provided opportunity for research to be shared. For example, **School research talks and exhibition events** are regularly documented on our webpages (through **research centre platforms** or **Temporary Contemporary**) and feature on the School's social media platforms. In addition to this, an **online research blog (ADA Research)** provides news stories of research activities undertaken by the Unit. Collectively, these provide an open resource for academic and non-academic audiences to freely access.

All research within the Unit is conducted to the highest possible ethical standards, compliant with the **Concordat to Support Research Integrity**. Research integrity is an integral part of discussions at the School Research and Enterprise Committee, which meets every two months. The School also has a Research Ethics and Integrity Committee which is committed to promote and ensure all ethics. It has a membership that reflects the expertise and breadth of experience that is required. The Unit complies with the University's Code of Practice for Research, Ethics and Integrity Policy and the University's Procedure for Research Misconduct. The School applies a rigorous internal peer review process to all applications for research funding. The purpose of this process is to provide support to staff during the grant application process and ensure that all applications are of the highest possible standard and this includes issues related to Research Integrity and Ethics.

2. People

Staffing Strategy and Staff Development

Unit of Assessment 32 is comprised of **35 members of staff (29.2 FTE)** from the School of Art, Design and Architecture. The submitting pool of staff include: 6 Professors, 2 Readers, 1 Subject Lead in Art and Communication, 1 Subject Lead in Product Design, 1 Director of Graduate Education, 1 Director of Teaching and Learning, 1 Director of Internationalisation, 10 Senior Lecturers, 10 Lecturers and 1 newly qualified early career researcher. This pool has been identified in accordance with the University's REF Code of Practice. Each submitting member of staff holds a doctoral degree, is undertaking high quality research of an internationally recognised standard and is a member of one of the three research centres in this Unit. All staff are qualified Fellows of the Higher Education Academy.

The Unit completed its first REF return in 2014 and 13.5 FTE members of staff were submitted to the output pool. The considerable increase in the FTE of staff submitted from 2014 to 2021 reflects the investment and support provided for research in the period, and evidences the much improved and broader research culture across the Unit. Part of the strategy for research growth for this census period has been in the investment and development of a supportive infrastructure for newly qualified early career researchers and for staff undertaking doctoral research. Currently, there are **25 members of staff enrolled onto a PhD within UoA32**. Within the REF census period **16 members of staff completed their doctorates**.

All new members of staff meet with the Associate Dean for Research as part of the School induction process. The purpose is to inform them about the University's and School's policies on Research, Research Integrity and Ethics, as well as of internal training and financial support available. Compliance to research ethics and integrity is also discussed during staff appraisals. The training offered by the School is sufficiently flexible to provide subject or discipline specific guidance. School ethics training is available twice a year.

Since REF2014, the **School has appointed a number of Professors**. For example, Fitzpatrick (appointed 2017-2020) is a practising visual artist, philosopher and writer with experience of exhibiting internationally especially in Australia and South East Asia. Arya was appointed as Professor of Visual Culture and Theory in 2018 and Professor Goswami is the Director of the Technical Textiles Research Centre. Massey was appointed as Professor of Design and provides design history and theory research support to both staff and postgraduate students.

In addition, the School has **supported promotions** including Unver to a Readership as Principle Enterprise Fellow in 2014. Pettican became Subject Area Lead for Art and Communication in 2018 and Devlin became Director of Internationalisation in 2018. In 2019, Hunter joined the School as Director of Teaching and Learning. Bailey was promoted to Director of Graduate Education in 2016 and a large part of her portfolio is to concentrate on postgraduate research training and culture. Coles, Rowley and Cassidy are part of the School's Professors and Readers Group and work with the Associate Dean for Research and Enterprise in building and sustaining the research culture within the Unit. Clear is currently Dean of the School of Art, Design and Architecture (2020).

Approach to Equality and Diversity

An output equality impact assessment was carried out in accordance with the institutional REF Code of Practice, which illustrated that **48.6% of the unit's outputs submitted are by male staff and 43.9% by female staff**. The complexity of the submission with regard to the multi-component submission means that this is a balance close to the original EIA. The University's EDI policies extend to a range of mandatory training for staff. The School follows the University's Code of Practice with respect to Equality and Diversity. Staff within a significant responsibility for research are required to undertake the University's on-line 'unconscious bias' and 'diversity in the workplace' modules. In addition, raising awareness of LGBTQI, BAME, Disability Confidence and Women in Academia is part of the School's ongoing commitment to establishing research opportunities for postgraduate students in particular, but also in generating relevant and timely research in relation to aspects of social justice and systemic inequalities. These are embedded within the University and School's Research Strategy and feed into the School's approach to Areas

of Strategic Research Importance. The School has an Equality, Diversity and Inclusivity Group, mirroring the University's Equality, Diversity and Inclusivity Enhancement Committee, and is working towards a bronze award submission to the Athena Swan Charter. Our focus on equality and diversity with regard to staff strategies recognises the importance of representation, visibility and opportunity.

Fostering a Supportive Research Environment

The School provides research mentorship to help staff develop research plans, identify training needs and to generate opportunities for research collaborations, outcomes and funding. This mentoring system offers staff opportunities to strategically discuss how they may undertake and implement research as well as develop **five-year plans to realise specific goals and ambitions**, including promotion. Line Managers and Heads of Department play a role in taking an adaptive approach to staff research and teaching responsibilities and ensure that periods of teaching relief, remote and flexible working are accommodated to help support specific research activities.

Staff are encouraged to **consolidate their research activities into outputs**. This can take the form of exhibitions (for example, Market Gallery exhibitions at Temporary Contemporary), co-authored publications, contributions to symposia and conference presentations. The research centres host sessions on a range of different research themes, many of which feature guest speakers, seminars, discussion panels between centre members and research presentations. These sessions have considered, for example, 'cultural ecology and cultural critique', 'dialogical design', 'photographic research practices', 'climate action and environmental justice', 'women in design' and 'doing research in COVID-19'. Staff presentations in the form of Research-through-Practice talks are also a key feature of the Unit's research community and broadcast live online to both academic and non-academic audiences. Recently, a guest-speaker series to better embed **research-and-industry informed teaching** into the Department of Fashion and Textiles was implemented. Speakers include Adam Mansell (CEO of the UK Fashion and Textiles Association), Mark Jarvis (Managing Director at the World Textile Information Network) and Stephanie Dick (Chief Executive of the Textile Institute).

The aim of these events is to encourage research engagement and collaboration, which in turn, informs the future aims and research interests of the Unit. This extends to the ways in which research-informed teaching is embedded into the curriculum and contributes to the research culture of the School. In this respect, staff, at all stages of research career, contribute to a range of research activities within the centres and play an active role in addressing the key performance indicators of the School and University research strategies.

Staff at all stages of research career are encouraged to contribute to research centre culture through membership activities. This can involve the development of collaborative projects, calls for research networking and participation, recruitment of doctoral research students and project leadership over public seminars, symposia, conferences and exhibitions.

To support these activities, the **School's internal research application funding scheme** allows staff to apply for research sabbaticals as well as providing funds to help generate publications, research outputs in the form of exhibitions, networking and bidding activities. The scheme has supported 4 sabbaticals to realise practical projects abroad. 3 staff were granted sabbaticals to complete their doctoral studies, amounting to £22,980. In the majority of cases flexible working patterns for the completion of doctoral studies were accommodated. Funds have been allocated from the scheme to support research development and activities. Of this investment, £19,672 has been awarded to conferences and travel, £19,443 towards publications, £64,744 towards software/computer lab/materials costs and exhibition outcomes. The remaining investment has included research assistant costs and administrative support towards impact case studies and research infrastructure and open access publications (including postgraduate research). **The total amount of investment amounts to £227,652.**

Workload allocation, research centre membership and research mentoring provide a School-based infrastructure of support alongside the resources and support provided centrally by the

University. For example, staff receive £2000 on award of their doctorate to seed fund research activity. All staff have access to the University Research Fund calls, and have benefitted from investment. Also, the University's Research and Enterprise services regularly communicate access to a range of opportunities. Internal funding schemes, such as the **Collaborative Ventures Fund (CVF)**, offers matched funding for work with external partners. This funding has supported staff in the development of projects such as Textile Curatorial Masterclasses (CVF, Barber, 2016) and seed-corn funding for the development of projects with Leeds Museums and Galleries and the University (CVF, Baraklianou, Bailey, Carr, 2019). Other **University Research Funding** awarded to this Unit includes £10,000 for Transitions 2: Material Revolution International Conference, £9930 for SAT in the Circular Economy International Conference (Cassidy), £11,000 for COVID-19 seed funding projects in creative practice (Bailey, Hunter, Pettican, Preston). These funding opportunities have helped to generate a range of outcomes and outputs, including further project development for UKRI funding schemes.

Postgraduate Research Students

Since REF2014 our doctoral student numbers have grown considerably. The total cohort of research degree students in the School in 2021 is **approximately 144, with 91 PGRs aligned to UoA32**. Growth has been aided with University/School scholarships and Vice Chancellor Fee Waivers for undergraduate and master's degree students who have excelled in their studies. **The current doctoral completions for this Unit over this REF period are 23.**

Huddersfield is committed to VITAE's Concordat to Support the Career Development of Researchers and the Unit has extended support to researchers across the span of their careers. This includes progression of our student body; from undergraduate to postgraduate, with both a Taught MA suite of courses (11 pathways) and research degrees (MA/MSc by Research and PhD in Art and Design and Fashion and Textiles). These are supported by the research centres and provide an infrastructure for research development through a weekly School Research Programme featuring training sessions specific to art and design research and methodologies, guest speakers, webinars and symposia.

Doctoral students participate in induction sessions at both University Graduate School level and within the School. All new postgraduate research students are required to attend presentations on research integrity and ethics as part of research degree induction processes. PGR supervision is workload allocated and the Director of Graduate Education serves as a personal tutor for all students. The progress of students is recorded online via Skills Forge. PhD students have 3 review points throughout the duration of their studies, reviewed by academic assessors. These provide students with written feedback and help to monitor completion rates.

To qualify as a PhD supervisor, staff need to: (a) have a doctorate (b) have undergone mandatory University training on research supervision, renewable every 3 years, and (c) have to evidence a research active profile through outputs.

The VITAE Researcher Development Framework underpins our research skills, training and resources. The University Researcher Environment team, provides access to a range of research knowledge and skills development, including training in knowledge and intellectual abilities, personal effectiveness, research governance and organisation, engagement and impact. For example, training is provided through the Teaching Assistant Preparation Programme, where PGRs receive training in seminar tuition, workshop provision and co-teaching of small groups. PGRs who undertake the training are supported by the School to engage in teaching activities during their studies, helping them gain teaching experience, helpful for their future career development and job prospects.

The University and School provides specialist support for academic writing with English Language Support for International Students. The PGR community are encouraged to come together once a year for the Annual PGR Conference, providing an opportunity for research degree students across all subject areas to present their work.

The University's EPSRC Doctoral Training Partnership (DTP) has invested in multidisciplinary materials related research and one PGR was successfully awarded a scholarship in the field of technical textiles. The School has also benefited from two **University Research Funded MA to PhD transfer scholarships** in product design and photography, amounting to £40,000. The application process for this scheme involves a rigorous progression assessment to determine the suitability of transfer to doctoral level study. Both projects are due to complete in 2021.

The Unit also financially supported **collaborative doctoral scholarships** with cultural organisations, including **Hepworth Wakefield, Henry Moore Institute, Yorkshire Sculpture Park** and **East Street Arts, Leeds**. These partnerships helped to build a platform for collaborative doctoral working with commercial and non-commercial sectors of the creative and cultural industries. In 2020, the first cohort of collaborative doctoral award holding students successfully completed their doctorates. The School intends to generate more collaborative doctoral opportunities. For example, in 2020, a new School scholarship scheme was introduced which allowed research centres to design projects specific to future strategic research aims. New collaborative doctoral studies include projects with Kirklees Council as part of the WOVEN in Kirklees textiles festival. School funded PhD bursaries also led to three PhD students becoming members of staff, one of which sits in UoA32 (Dyer)

The School supports postgraduate students' professional skills and experience beneficial to an academic career. This includes support with a **Conference Development Fund of up to £1000** for the duration of a PhD student journey. Students are encouraged to present at conferences both nationally and internationally. The School's Research Programme also provides bid proposal writing sessions with doctoral students interested in applying for the **University's Postgraduate Researcher Environment Development Fund**. Each proposal can be awarded up to £2000 and is led by doctoral candidates. Successful applications within this Unit include: a seminar series on collaborative doctoral research practices (2016), a climate change transdisciplinary symposium (2017), *Situating Practices*: an exhibition and CRIT forum for postgraduate students (2018), *Photography and Lived Experience*: a postgraduate symposium and exhibition (2019), a postgraduate forum/dinner discussion with artists as part of Artist House 45 project with East Street Arts (2019) and an online exhibition and academic catalogue on the topic of Climate Action and Visual Culture (2020/21). These research events and activities have proved to be a valuable way for postgraduate students to take ownership of the research interests of the community at large and to network with other postgraduate students in the UK and abroad.

The **Postgraduate Research Experience Survey (PRES) results of 2019**, for Art and Design, excelled in the majority of areas and is currently listed in the top global quartile for supervision (86%), resources (80%) and research skills (90%). The overall satisfaction rate for this area was 81%, with the Global average at 71%.

3. Income, infrastructure and facilities

Research funding

Over the REF cycle, the Unit has secured **£717,200 in research funding income**, a significant increase from £130,389 in REF2014. For example, Goswami's involvement as a co-investigator for the **AHRC funded project 'Future Fashion Factory - Digitally Enabled Design & Manufacture of Designer Products for Circular Economies'** (£178,000) has fostered a productive research collaboration between the University of Leeds, Royal College of Art and the University of Huddersfield. The AHRC contribution costs to this project amount to approximately £600,000. Additional income includes **Doctoral Training Partnerships** funded by the **EPSRC** amounting to £18,254, the **Royal Society** for funds totalling £15,864 and **Gama Healthcare** for approximately £19,330. Rana has successfully generated research income through the **AHRC** for £22,262.

Unver secured and completed a **Knowledge Transfer Partnership (Innovate UK)** with Paxman Cooling Ltd, amounting to £181,486 (2015-2019). The commercial partner Paxman was also awarded a **TSB Grant for Research and Development** of £229,000 with £55,000 allocated to

the University of Huddersfield for prototype development. The total research and innovation income generated with the Paxman Cooler Ltd collaboration amounts to £230,904. In addition, Unver and Huerta Cardoso established an international research collaboration, funded by **EU Erasmus + Vocational Education Strategic Partnership Projects**, to improve technical drawing using VR and AR tools amounting to £25,820.

Within the Centre for Cultural Ecologies in Art, Design and Architecture Coles received £13,168 from the **Jan Van Eyck Academy** towards the development of the publication project Extended Play (EP). Bailey received £3000 from the **Henry Moore Foundation** for a project collaboration with artist-film-maker Huw Wahl entitled 'Action Space Film' which culminated in a symposium held at Heritage Quay, University of Huddersfield. Pettican has received £9227 from the **AHRC** as a partner on the **Hepworth Research Networking Grant** with Hepworth Wakefield and the University of York. In addition, staff have secured funding from a range of **non-HESA-recognised** sources. The research practices in art and design present a rich and diverse portfolio of funding streams, including for example: Swindell and Powell, **Arts Council England** grant for ROTOR III & IV (Partnership exhibitions programme with University of Huddersfield/Huddersfield Art Gallery) (£84,000), Barber's **Arts Council National Lottery Project Grant** for Blue Plaques of Intangible Experiences (£7168), Carr's **Arts Council Funded Project** 'Showgirl Manifesto' (£13,500), Pettican's **Arts & Heritage Commission** funded project 'Gestured' (Chetham Library) (£11,500). The total amount of external funding through these non-HESA-recognised income streams approximately totals £164,000 as evidenced in the multi-component practice submissions.

Research Strategy for Income Generation

Moving forward the School will prioritise research and enterprise income by embedding funding application opportunities into staff research planning. The School's Research Mentoring scheme creates opportunity for researchers to develop funding application experience as part of their career pathway planning. The School will extend current investment in creating sabbatical opportunities for staff to develop research bids, using research mentor support to help early career researchers apply for post-doctoral funding and consider how transdisciplinary research groupings may play a key role in future funding opportunities. For example, there is an increasing need to bring together expertise from across disciplines in order to address themes that are pertinent in a global, post-pandemic age. An international working group to develop collaborations (research, innovation and enterprise) will be established to help develop and cultivate new working relationships with external partners. This extends to the ongoing development of networks, Knowledge Transfer Partnerships and generation of enterprise income through partnership building with the creative and cultural industries. In particular, establishing links between research and the growth of the sector in a post-COVID-19 and post-Brexit context will help to establish new modes of collaborative working across disciplines and with external partners. The School offers training on bid writing (3 times a year) and has a dedicated Research Development Manager providing support in the identification of bidding opportunities and in bid writing and peer review.

Infrastructure and Research Facilities

The **£30 million Barbara Hepworth Building** within which the School is housed is a live open plan environment allowing researchers to engage with a range of facilities, including **photography and printing studios, weaving and laser cutting workshops, a digital lab providing the latest technologies in augmented reality, virtual reality, motion capture and high-performance visualisation including a 3-sided immersive cave**. The Barbara Hepworth Building was envisioned and designed to support innovation through transdisciplinary collaboration and support experimentation of ideas in both the digital and physical realms. In addition, the **technical textiles** research centre includes conditioned **lab facilities to test physical and chemical properties of fibrous assembly**. As a shared environment, there is now more opportunity to facilitate transdisciplinary research across the Unit. In this respect, the evolving cultural ecologies form part of the cross-fertilisation and exchange between research practices and our commitment to research-informed teaching. Over the REF census period, the School has invested approximately **£1 million** in specialist facilities and infrastructure.

Infrastructure and Support for Impactful Research

The Barbara Hepworth Building hosts a range of specialist facilities and presents opportunities for embedding stakeholder/user group and audience engagement processes into research. The open environment of the building can operate as a testing ground for new ideas and ways of working. In addition, the School's development of Temporary Contemporary, in collaboration with Kirklees Council, continues to present opportunities for embedding pathways to research impact with a range of different audiences and beneficiaries. This will be addressed in staff and postgraduate student research planning with the aim of developing more rigorous ways to capture impact in and through the research process.

Furthermore, pathway to impact statements were subject to six monthly reviews by peers which has helped to ensure a culture of learning across research areas. Researchers use the University's PURE information system to record research impact that is taking place, including the systematic collection of relevant information. The identification of impactful research for the next REF cycle has started, and will follow similar procedures. Training workshops were held for the Unit's staff and postgraduate researchers so that a shared understanding of the different types and value of research impact could be disseminated across research centres and disciplines, and further training workshops around the importance and need for research projects to focus on impact will be delivered.

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

External Research Collaborations

The collaborations developed include projects initiated through creative practice and the solution of design related problems. For example, the work of Brass Art brings together the University of Huddersfield, Manchester Metropolitan University and University of Edinburgh to realise a range of technological innovations in artistic research, whilst Goswami's involvement as a co-investigator for the Future Fashion Factory project has generated a productive research collaboration between the University of Leeds and the Royal College of Art. Unver's collaboration with universities in Turkey (Erasmus project) and the National University of Singapore (as part of research around cooling caps) are also examples of international links to other academic institutions.

External Partnerships with Industry for Commercial Purposes

The **Technical Textiles Research Centre** (TTRC) and **Innovative Design Lab** (IDL) have been leading the development of collaborative research across a range of theoretical and problem-solving approaches in the context of real-world problems. IDL in particular has an important role in establishing relations with public and private sector organisations to support design challenges and project-based problems. This is evidenced in the work of Unver and Huerta Cardoso and their long-standing industrial collaborations (e.g. Paxman Coolers, see below). Similarly, the TTRC have bridged links between disciplines and in working directly with industry partners, with current links with over 200 companies. Both centres meet the needs of society and businesses and are generating a focus for and with the end user. Moving forward, stakeholder engagement will continue to play a key role in the evolution of these research specialisms.

One of the most substantial and long-term industry partnerships within UoA32 is with **Paxman Coolers**, a Huddersfield-based company that manufactures scalp coolers for the purposes of preventing chemotherapy-induced alopecia and distributes them worldwide to over 42 countries. The Knowledge Transfer Partnership (KTP) (led by Unver), enabled the conception, design and development of a novel single use cooling cap system supported by 3D printed tooling technologies to facilitate mass manufacture and global market entry. Paxman and the University of Huddersfield have signed a five-year research and collaborative agreement to establish a **Paxman Scalp Cooling Research Centre** based at the University of Huddersfield (**£1 million investment**). It focuses on biological hair follicle research as well as developing innovative scalp cooling-related treatments and individual 3D-printed cooling caps.

Third Sector/Council and Public Engagement for Social and Cultural Purposes

The **Centre for Cultural Ecologies in Art, Design and Architecture** has been proactive in developing new and emergent thematic strands across social, aesthetic and technological

convergences in creative and cultural production. External collaborations with partners, different user groups and audiences can be seen tangibly in the work undertaken between the School and Kirklees Council. This ongoing partnership, which first began in 2012 with the **ROTOR** initiative, continues to evolve and is now playing a role in the town's ten-year cultural regeneration plans through the initiative Temporary Contemporary. **Temporary Contemporary** provides a platform for inspirational exhibitions, performances and research, and is supporting the repurposing and use of Queensgate Market in Huddersfield and the Piazza Shopping area, which has been suffering from a low number of visitors and shop closures. Contributors to the programme include university lecturers, artists, local artisan producers, musicians, students and young people. The initiative is helping to embed creative and cultural activities in the town to support the regeneration of Huddersfield as a creative town. It is an example of partnership working that has cultivated collaborative approaches to arts and cultural development with different stakeholders, users and audiences.

Furthermore, Bailey is a member of the **Heritage Action Zone** (Kirklees) consortium for the High Street Cultural Programme and a steering group member of the **WOVEN in Kirklees** festival. These partnerships have helped to develop collaborations across a network of stakeholders with the aim of generating a range of social and cultural impacts including new ways of undertaking action research in live environments and for multiple beneficiaries.

The Unit also maintains its existing memoranda of understandings with the Yorkshire Sculpture Park, Hepworth Wakefield and the Henry Moore Institute. For example, Bailey is on the steering group for The **National Arts Education Archive (NAEA)** at Yorkshire Sculpture Park and Pettican is a key University partner with Hepworth Wakefield and the University of York for the **Hepworth Research Network (HRN)**. This network will bring together curators, art historians, practising artists and materials scientists to research the physical processes used by Hepworth to produce her works.

Service to the Subject Area

The research centres have played a key role in facilitating opportunity for researchers to participate in national and international contexts and build on the standards of good research practice as evidenced by their contribution and service to the subject area.

International Conferences

Approximately 31 doctoral holding staff have delivered academic papers at international conferences during the census period, including: Transimage (Roberts, Bailey, Fitzpatrick), Society for Artistic Research (Roberts), Textile World Institute Conference (Goswami), The Association for Historical and Fine Art Photography (Devlin), Derrida Today (Roberts), Deleuze and Artistic Research (Roberts). Staff regularly lead panels at national and international conferences and symposia such as the Association for Art History (AAH) ('Archival Interventions in Sculpture', 'The Power of Plasticity', Bailey), College Art Association (CAA) (Carr), Freud Museum (Pettican). Staff (Bailey, Pettican) have also co-organised a range of talks, symposia and conferences with the Henry Moore Institute, Hepworth Wakefield and Yorkshire Sculpture Park. These events have attracted external guest speakers from CERN, Geneva, Stanford University, University of Cambridge, Texas A&M, SUNY New Paltz and University of St Andrews.

External Exhibitions

Staff are committed to providing academic service to the subject area in the form of external exhibitions (both solo and group). Barber, Carr, Clear, Fitzpatrick, Holmes, Hunter, Pettican, Preston and Woolham have exhibited nationally and internationally, have presented artefact showcases at conferences and festivals (Andrew, Pettican, Roberts) and have been involved in artistic research residencies with Banff Centre for Arts and Creativity, Canada (Baraklianou) and the Sci-Art EU Commission (Townesley). Internationally, Clear curated 'Sensorium 2' at the 'Shanghai Urban Art Season' in 2019. The multi-component folio submissions from this Unit exemplify the value and relevance of exhibiting practice research in a range of contexts. Not only does the exhibition platform serve as an important mechanism for research it is also an indispensable feature of creative practice outcomes and in this respect, the culture of this Unit is

focused on and committed to the public display and communication of art and design research practices.

Keynote Talks

Staff are regularly invited to deliver keynotes or talks at conferences or research events. For example, Barber was keynote speaker at the 3rd International Congress on Visual Culture hosted by Universitat Abat Oliba, Barcelona, Spain, 22 –23 May 2017, Rowley was invited speaker for a public talk at the Henry Moore Institute in conjunction with the exhibition Paul Neagu: Palpable Sculpture (October 2015) and key speaker for a gallery talk for the In My Shoes Arts Council Collection at Longside Gallery, Yorkshire Sculpture Park, in 2018. Halbert was invited as a New Generation Thinker to speak at the Being Human Festival, Sage Gateshead, which was broadcast on BBC Radio 3 in 2019. Pettican was a speaker at Arts in Heritage North: National Trust and Arts Council England Network Event, Cheshire (2015) and Townsley an invited speaker at Milan Bicocca, Department of Informatics and Computer Systems in 2019. These selected examples show a range of engagements in specialist subject areas, with a particular emphasis on expertise in creative practice.

Journal Editorship, Peer Reviewing and PhD Examining

Research staff have been actively involved in journal editorship, peer review and PhD examining. For example, Bailey has guest edited issues for Journal of Writing in Creative Practice and Craft Research, and staff have peer reviewed for Journal of Visual Art Practice (Rowley), Journal of Aesthetics and Art Criticism (Bailey), MDPI – Art Series (Carr). Staff sit on Editorial Boards for The Design Journal (Unver), Dyes and Pigments (Goswami), International Journal of Science and Technology (Goswami) and Journal of Textile Science and Technology (Goswami). Staff regularly examine PhDs at other institutions including the University of Brighton, University of Chester and the Royal College of Art.

External Committees and Steering Groups

Several staff are elected members of external committees and steering groups including member of the board of trustees for Textile Society and Conference (2014-2017) (Andrew), Committee Member of the Centre for Printing History and Culture, University of Birmingham/Birmingham City University (Arya), Board of Directors, International Fiber Collaborative, USA (Barber), steering group member, National Arts Education Archive, Yorkshire Sculpture Park, steering group member (WOVEN in Kirklees festival), (Bailey), member of Heritage Action Zone Consortia, Huddersfield (Bailey), Scientific Committee Computation, Communication, Aesthetics & X (xCoAx) (Pettican), Member of Society of Dyers and Colourists (Goswami). These examples evidence a range of engagements with local, national and international committees where the subject specialist expertise of staff play an active role in advancing research and impact.

Council for Higher Education in Art and Design (CHEAD)

Hunter is a CHEAD trustee and Bailey was recently appointed as a member of the CHEAD Research Alliance Strategy Group (2020). The purpose of the Strategy Group is to contribute to shaping CHEAD's future plans for engaging in the UK's creative and cultural economy, with a particular focus on devising ways that art and design research creates impact by shaping practice, activating innovation and informing policy.