

Institution: Teesside University

1. Context and mission

Teesside University is a post-1992 institution with approximately 18,500 students and 2,300 members of staff. Staff eligible to be submitted to the REF number 620 FTE. Thirty-nine per cent of eligible staff (240.1 FTE) have Significant Responsibility for Research (SRfR), with at least 20 per cent of their workload allocated to research.

Over the period, approximately 11 per cent of our average turnover of £138m a year has been generated from knowledge-exchange activity and three per cent from research. In addition, the university receives around £1.5m of annual quality related (QR) research income.

The Tees Valley, 307 square miles of north-east England with a population of 701,818, is led by an elected mayor governing five combined-authority areas: Darlington, Hartlepool, Middlesbrough, Redcar and Cleveland, and Stockton-on-Tees. The university campus is based in Middlesbrough, with some business-facing units (the Centre for Professional and Executive Development and the National Horizons Centre) based in Darlington, accessible on the East Coast Mainline.

Teesside is a centre for the chemical and process industries, with a developing focus on energy generation, biosciences and digital innovation that builds on Teesside's heritage as a pioneering industrial centre with a highly skilled workforce. Structural economic changes have, however, led to significant local deprivation. Based on the UK government's index of multiple deprivation in England (2019), Middlesbrough is in the most deprived one per cent of areas, alongside Hartlepool, and Redcar and Cleveland.

As an anchor institution, the university is an important employer in the region with a commitment to the Tees Valley that is supported by civic agreements. We play a leading role in supporting the local economy and our research underpins initiatives delivered in partnership with the Tees Valley Combined Authority (TVCA) and others. To drive economic growth in the Tees Valley, we are building a £12m Net Zero Industry Innovation Centre in partnership with TVCA and in 2019 we opened the £22m National Horizons Centre for the biosciences.

As a University Alliance member, we work with other HEIs to transform major regions, cities and communities across the UK by educating the professional workforce of the future, providing flexible and responsive R&D to businesses, and working to solve the problems facing society.

Post-REF2014, our corporate plan for 2015-20 (Teesside 2020) set out our long-term ambition to become an international university at the heart of our region with a reputation for academic excellence. As part of that plan, we aimed to grow the volume and quality of research to underpin our core academic mission and to ensure that our research makes a difference to individuals, organisations and society.

This vision is supported by our institutional mission statement: "Teesside University generates and applies knowledge that contributes to the economic, social and cultural success of students, partners and the communities we serve. Through education enriched by research, innovation, and engagement with business and the professions, we transform lives and economies."

The university has five academic schools: Computing, Engineering and Digital Technologies; Health and Life Sciences; Social Sciences, Humanities and Law; Teesside University Business School; and the MIMA School of Art and Design, based at the Middlesbrough Institute of Modern Art (MIMA).

Our research is organised under eight research centres aligned to the schools: the Centre for Applied Psychological Science; the Centre for Culture and Creativity; the Centre for Digital

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Innovation; the Centre for Public Health; the Centre for Rehabilitation; the Centre for Social Innovation; the Centre for Sustainable Engineering; and the National Horizons Centre.

We facilitate interdisciplinary collaborations through three grand challenge themes: creating vibrant, cohesive and resilient societies; forging a smarter, greener industrial economy; and shaping the future of health, care and wellbeing. These drive institutional research priorities aligned to regional growth, the UK's industrial strategy and the UN's sustainable development goals (SDG).

In line with our institutional research strategy, the FTE of staff submitted to REF2021 has increased nearly threefold compared with REF2014. Historically, the university's research was conducted through small, semi-autonomous research institutes, with 77.34 FTE submitted to RAE 2008 in six UoA, and 87.4 FTE in eight UoA in REF2014. The integration of research as an academic function of Schools has allowed substantial development of the university's research capacity over the current REF cycle, rapidly growing the proportion of research active staff: 240.1 FTE will be submitted to REF2021 across five UoAs:

- Allied Health Professions, Dentistry, Nursing and Pharmacy (60.5 FTE)
- Art and Design – History, Practice and Theory (48 FTE).
- Engineering (78.6 FTE)
- Psychology, Psychiatry and Neuroscience (18.3 FTE)
- Social Work and Social Policy (34.7 FTE)

Around one-third of staff returned (32%, 75.8 FTE) are early career researchers (ECRs), compared with one-quarter (26%, 22.2 FTE) in 2014. This increase reflects our institutional strategy to grow an inclusive research culture and sustainable research base through the recruitment of early-career, research-active staff with a PhD. Enacting Teesside 2020 has increased academic staff qualified to doctoral level from 38% in 2015 to 49% in 2020. Research and academic staff recruitment has increased (from 52 staff in 2013/14 to 103 staff in 2019/20). 26% of staff recruited over the period were less than 30, and 65% less than 40. 25% of recruited staff during this period were aged 41 to 50, and 9% of recruited staff were aged over 51.

Areas with a track record of strong submissions to the REF, and in some cases previous research assessment exercises, include allied health professions, engineering and social policy. The art and design unit was submitted for the first time in REF2014 and has since followed an upward trajectory in terms of research development and the research environment.

A submission in psychology will be made for the first time in REF2021, as part of the targeted development of this unit and the further alignment of our research expertise with undergraduate and postgraduate degree programmes, which are areas of learning and teaching strength.

2. Strategy

As part of Teesside 2020, we put in place the foundations to support growth of future research quality. We restructured our schools to bring together compatible disciplines and facilities (for example engineering with computing, biosciences with health). We embedded our research institutes into schools to strengthen research environments and formalised our research centres to focus on areas of research strength. We invested £10.5m in doctoral training, recruited 144.8 FTE staff with SRfR (74.2 FTE or 51% of whom are ECRs), and created grand challenge themes

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aligned to the UN Sustainable Development Goals to facilitate interdisciplinary working and drive institutional research priorities.

Teesside 2020 supported our researchers' careers through the introduction of an Academic Promotions Framework identifying career progression routes and success criteria for a research and enterprise pathway. An improved Professional Development Plan and Review (PDPR) process uses an annual cycle of setting objectives and reviewing achievements, alongside the identification of longer-term career aspirations and development needs. A new Workload Framework and Academic Workload Allocation Model ensures research is accounted for with appropriate workload allocations, and a comprehensive Researcher Development Programme (RDP) provides training opportunities for staff and students (see section 2, People). We also reconfigured disparate support for research and impact into a central professional Research and Innovation Services (RIS) department, with 15.1 FTE staff.

Teesside's new strategic plan for 2020-25, *Ambition Delivered Today*, builds on the progress we have made. To continue to grow a sustainable research base and to support a vibrant and responsible research culture we will:

- sustain and develop our research base through strategic investment and effective governance
- increase research quality through researcher development, international collaboration and industry engagement
- create a responsible and resilient research environment that promotes diversity, inclusion and integrity
- maximise the visibility and impact of our research through open science, public and policy engagement, knowledge exchange and our role as a civic university
- grow and diversify research income by expanding our research networks and engaging in demand-led collaborations with external partners.

We have developed the Teesside University Impact Framework, bringing together schools, RIS and the Department of Academic Enterprise (DAE) to drive impact that is evidence-based, strategic and significant. Using the framework, research centres have identified impact pathways, including research-informed policy and practice, enterprise and knowledge exchange, public and civic engagement, and global sustainable development.

Open research

We are committed to ensuring our research is open and accessible. Since 2010, our Open Access (OA) Publications Policy has mandated staff to deposit outputs, including non-textual and practice-based work, in our institutional repository. The Pure system enables staff to manage their outputs with the digital collections team in Library and Student Services and comply with our OA policy. Our institutional open access compliance for all outputs is 95%.

We refreshed our Research Data Management (RDM) policy in 2019-20 and procured a data-management system, to be fully implemented in early 2021. Our RDM policy is aligned to the European Commission open-science principles to ensure data are findable, accessible, interoperable, and reusable (FAIR). It sets out the responsibilities of staff and the university to publicly share digital and non-digital research data. The system will enable staff and doctoral students to deposit and make research data sets publicly available via Pure.

Through the RDP, we provide bite-sized briefings on understanding OA and RDM and creating data management plans. This provision will be expanded as part of the implementation of the RDM policy.

Regional and national research priorities

As a civic university, we play a leading role in supporting the local economy. Our research aligns to the priorities set out in TVCA's Strategic Economic Plan. It underpins initiatives delivered in partnership with TVCA, such as business support and scale-up programmes and the Great Place Tees Valley project, which supports arts, heritage and cultural activity across the Tees Valley.

In 2014, MIMA was incorporated into the university. An Arts Council England National Portfolio Organisation and founding member of the Middlesbrough Cultural Partnership, MIMA plays a vital role in the cultural ecology of north-east England. It supports public engagement in relation to research, policy, practice and knowledge exchange.

Our research centres for applied psychological sciences, social policy and public health work with TVCA, health trusts and community partners to address issues linked to deprivation, most recently providing evidence to support the UK2070 regional inequalities commission.

We run three innovation centres in partnership with independent research and technology organisation TWI, focusing on: the circular economy and recycling; healthcare innovation; and industrial decarbonisation and hydrogen. The centres direct our research to local, national and international priorities via collaborative R&D with industry partners. They support the TVCA's ambition for the Tees Valley to become a global leader in clean energy, low carbon and hydrogen, and to achieve a net-zero-carbon industrial cluster by 2040.

Interdisciplinary and discipline-based research

We understand that complex societal challenges demand interdisciplinary approaches, using expertise from various perspectives to solve them. Facilitating interdisciplinary research was a priority of Teesside 2020 and continues to be part of our research plans for 2020-25. Through our grand challenges and research centres we will address UN goals related to health and wellbeing, gender equality, clean water and sanitation, clean energy, reduced inequalities, sustainable cities, and partnerships.

We have supported researchers to develop their interdisciplinary practice through our three grand challenge themes, each of which has two co-leads (from different disciplines) and a steering group of members from the research centres. The steering groups oversee plans to support interdisciplinary collaboration and allocate internal pump-priming to develop applications for external funding. The steering groups report to our University Research and Innovation Committee.

Our research centres focus on: applied psychological sciences; biosciences; culture and creativity; digital innovation; public health; rehabilitation; social innovation; and sustainable engineering. The centres sit under the governance structures of our schools, and report to school research and innovation committees (RICs) on membership, research bidding and awards, output quality, impact portfolios, and equality and diversity actions. Annual presentations to the university's RIC review performance and identify priorities for the coming year.

Research integrity

Our institutional Policy, Procedures and Guidelines for Research Ethics sets out the principles and procedures for ensuring that research is conducted to the highest standards of quality, integrity, ethical propriety and governance, and legal compliance. The Framework and Code of Practice for Ensuring Research Integrity sets out principles for the good conduct of research, linked to national and international frameworks and standards, and compliance with the Universities UK Concordat to Support Research Integrity.

This work is overseen by the university research ethics and integrity sub-committee (UREISC), which reports to the RIC and subsequently Academic Board. Each school has a research ethics sub-committee, which implements procedures on ethics clearance for all research activities,

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reporting to UREISC, while RIS provides central support for research integrity, working closely with Legal and Governance Services, and acts as the secretariat for UREISC.

We subscribe to the UK Research Integrity Office, which provides advice and guidance, and resources on ethics and integrity to all university staff.

Public engagement

As part of our 2020-25 strategy, we are committed to be an 'engaged university' working with stakeholders to deliver transformational change and impact. In support of this we have developed a Charter for Social Impact that outlines our commitments in terms of civic and public engagement, knowledge exchange and impact. It identifies: the responsibilities of our leaders, staff and students in delivering this ambition; actions required to embed stakeholder engagement; and resources required to ensure that stakeholder-engagement becomes integral to the university's operations.

Our RDP includes an introduction to public engagement and media training, including workshops delivered by the National Co-ordinating Centre for Public Engagement.

MIMA engages the community in events to explore art, science, politics, economics and culture, via themes such as housing, migration, inequality, regeneration and healthcare. We run a programme of public and professorial lectures, and regular One Fifteen events at MIMA to engage the public with our research. We also participate in the annual Pint of Science festival, where staff share their research in a local pub, bar or café.

We are a signatory to the UK Concordat for Engaging the Public with Research.

3. People**Staffing strategy**

The university's staffing strategy supports its commitment to attract, retain, and reward staff, and enable them to achieve their full potential. The university seeks to remove barriers to performance, and to promote a healthy work-life balance by offering a flexible and supportive approach to working arrangements.

Our Recruitment and Selection Policy sets out our objectives to: support recruitment, retention and development of people to contribute to our mission and corporate objectives; ensure that the recruitment and selection process is fair and transparent, free from bias, prejudice and discrimination; maintain best practice and compliance with employment and equality legislation; develop a workforce that reflects the diversity in society.

A Redeployment Policy supports researchers approaching the end of a fixed-term project contract. Staff identified as at risk of redundancy are given priority consideration for new vacant posts for a period of up to six months before the end of their contract. In addition, guidance from the university's careers service is available to researchers throughout their time at the university and for two years after they leave.

Our Academic Promotions Pathways make it clear that opportunities for promotion are open to all staff, regardless of working pattern, contract type or other factors. All applicants are measured against the same criteria at each grade, taking account of any individual circumstances.

The Flexible Working Policy enables the consideration of working time (part-time and/or term-time working patterns, phased retirement), location (secondments, volunteering), and time away from the university (career breaks, sabbaticals). Applications for flexible working can only be refused in specific circumstances, outlined in the policy, based on factors such as an unacceptable level of additional cost or a detrimental effect on departmental quality or performance.

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Staff with caring responsibilities are supported using the Flexible Working, Family Leave, Emergency Leave and Carers policies. Staff returning to work after illness are supported with a phased return where applicable, managed in agreement with line managers and schools.

Our University Staff Health and Wellbeing Strategy offers: stress risk assessments; a confidential counselling service and online stress assessment tool; an in-house occupational health service; phased returns following extended absence; training for managers on managing workplace stress; sessions for staff on resilience; and gym facilities, exercise classes and fitness clubs. We hold a Better Health at Work Continuing Excellence Award.

Equality and diversity

Our Equal Opportunities Policy confirms adherence to the principle of equal opportunity for all. Staff are expected to complete mandatory training on equality and diversity within a three-year period (95% compliance).

The Executive Equality and Inclusion Group (EEIG) oversees the application of equality and diversity principles and directs the operations of the Equality and Inclusion Group (EIG) to deliver change. Four subgroups representing various protected characteristics feed into the EIG around: disability; ethnicity, gender; LGBTQ+; and religion and belief.

In support of equality, diversity and inclusivity, we: maintained our HR Excellence in Research award (2017); secured an Athena Swan Bronze Institution Award (2018); retained our Investors In People Gold status (2018), with the institution's commitment to equality, diversity and inclusivity specifically commended; maintained our Stonewall Top 100 position (ranked 40th in 2020, a rise of 27 places from 2018); achieved Disability Confident, Leader status (2019); and became a signatory to the Race at Work Charter, which is designed to improve the workplace outcomes for BAME employees.

Our mean hourly gender pay gap (March 2019) shows that women's wages are 14% lower than men's, compared with a sector average of 16%. The median hourly pay gap shows that women's wages are 28% lower than men's, compared with the sector median of 15%. The latter reflects the fact that we employ our manual staff whereas in many institutions these roles are contracted out. Removing manual staff from the data would reduce the figures to 11% (mean) and 16% (median). The figures for eligible staff (academic and independent research staff) are 0.4% (mean) and zero (median).

Our Academic Promotions Pathways have been updated using REF guidance on the decoupling of staff from outputs, to clarify that staff should not identify whether outputs included in promotion applications have been submitted to REF. As a signatory to the San Francisco Declaration on Research Assessment (DORA) we have implemented a policy and supporting action plan on the responsible use of quantitative indicators in research evaluation.

Our equality impact assessment (EIA) on staff returned to REF indicates three areas of concern that will be addressed via the EEIG and continued actions, including under the auspices of the Athena Swan Charter and LGBTQ+ EIG subgroup. The first is that, despite a 10 per cent increase in female staff returned since 2014 (71 per cent of staff submitted to REF2014 by the university were male), our assessment indicates the proportion of women who have been identified in 2020 as having SRfR is lower than the proportion of eligible staff across all UoAs except 32. In total, 45 per cent of eligible male staff have been identified as having SRfR, compared with 32 per cent of eligible female staff. Overall, 61 per cent of staff identified as having SRfR are men.

The second area of concern is the low proportion of SRfR staff in the following age groups: 20-29 (25%); 50-59 (28%); and 60-plus (28%). A range of factors is likely to contribute to this, which

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further analysis may uncover. The third is the low disclosure rate against sexual orientation and religion, which limits the extent to which conclusions can be drawn.

Our EIA data suggest no negative affect based on other protected characteristics.

Based on the UCEA definition, the characteristics of our senior staff include: 88% are white British; 48% are women and 52% men; 93% do not consider themselves to have a disability; 82% are heterosexual (3% are LGBTQ); and 45% are Christian, 31% have no religion, 5% have another religion, and 19% are unknown or prefer not to say.

Concordat to support career development of researchers

We implement the principles of the UUK Concordat to Support the Career Development of Researchers via a Concordat Implementation and Enhancement Action Plan. We have a university mentoring programme and job descriptions for readers and professors have been revised to include mentoring of ECRs. Mentoring is organised within each school, to support output planning, impact strategies, income generation and career progression.

Annually, staff apply for additional workload hours for research beyond standard Research and Scholarly Activity time. Staff are asked to outline their research aspirations for the next five years and agree three-year plans to work towards them. From 2019-20, staff have been allocated workload hours for three years, to support the delivery of longer-term research plans.

Staff are required to complete an initial development plan and an annual PDPR with their line manager, to review achievements, agree objectives including longer-term career aspirations and plans, and identify development needs.

Researcher development programme

Our RDP, mapped to Vitae's Researcher Development Framework, supports researchers at all stages of their career. It includes postgraduate researchers (PGRs), ECRs, mid-career and leadership programmes, and workshops covering research methods, supervision, evaluation, open science, metrics, impact, and funding. It also includes strands for staff nominated to participate by their school; for example, the Elevate Programme is targeted at staff who seek to build on their success in research funding by applying for larger collaborative project funds. The Research Leadership Programme supports aspiring leaders to reflect on their leadership style, support the aspirations of others, strengthen research cultures and develop research strategies.

As well as the RDP, the university subscribes to organisations which provide support and digital resources, including: AdvanceHE, which supports HEIs with transformative leadership and management, equality, diversity and inclusion, and effective governance, including the accreditation of teaching and learning programmes, Athena Swan, and the Race Equality Charter; and Vitae, the professional organisation for researcher development.

Early-career researchers

We define ECRs as staff within the first five years of their first academic or independent researcher post, contract researchers, and mid-career lecturers who are new to research. We introduced an ECR Induction in 2018, to provide information resources and support to staff in this group. A regular forum allows ECRs to share best practice, discuss common issues, and participate in discussions on research. The chair of the ECR Forum reports to the university's RIC.

A policy on fixed-term contracts outlines the support provided to contract research staff, including support from career advisers, a redeployment process, and a process of consultation as fixed-term contracts come to an end. Resources managed by the PVC R&I support bridging arrangements for contract researchers where appropriate. 6.4 of the 240.1 FTE with SRfR are on fixed-term contracts, mainly as a result of visa restrictions.

Research students

Over the period we have invested £10.5m in 157 studentships including 41 graduate tutors, who hold a salaried position for four years and combine full-time PhD studies with a limited teaching programme. They are offered the opportunity of a lecturer post following the conclusion of their study.

In 2015, we joined the national University Alliance (UA) Doctorial Training Alliance (DTA) of 20 alliance universities and partner organisations, investing £1.2m to deliver 25 PhDs in: biosciences (seven); energy (nine); and social policy (nine). In addition to a funded PhD, DTA students benefit from: seminars on topic-specific training; a mandatory two-day induction for networking; an annual two to three-day summer school and conference; and elective training events that bring the entire DTA cohort together from participating institutions.

PGR students are supported by their supervisors, the postgraduate tutor in each school (who provides support independently of the supervisory team), and RIS (training and support). New staff complete a training programme on supervisors' roles and responsibilities, doctoral project management from admission to examination, practical supervision skills, and on our regulatory framework for research degrees. Student and Library Services provides additional pastoral support.

Students complete a training-needs assessment when submitting their application to study. Our PGR programme is delivered at initial, mid, and completion stages. It includes project management; epistemological and methodological issues; academic writing, editing and presentation; the process of research; preparation for submission; and proofing of the thesis and viva examination. It is complemented by optional sessions and discipline-specific, school-based support.

Through our UK Council for Graduate Education subscription staff and students can create accounts to access to range of reports, resources and guidance for doctoral supervisors.

4. Income, infrastructure and facilities**Research Income**

Academic-led proposals for research funding are supported by the research funding team in RIS, industry-led collaborations are supported by the business innovation team in DAE. The teams work together to map Teesside's expertise to industry programmes and organise events with external partners to promote collaborative opportunities.

Grant boards meet quarterly in each school to report on progress against research centres' bidding strategies, monitor staff bidding plans, review the outcomes of proposals, and celebrate success. RIS and DAE staff are aligned to each of our research centres to support the centre leads to develop stakeholder engagement and bidding plans and provide advice, guidance and support to staff.

Our Global Challenges Research Fund (GCRF) Board supports delivery of the university's QR GCRF strategy, including the allocation of QR GCRF funds, and supports staff to engage with researchers from developing nations and to access official development assistance funds. It has also put in place a new due diligence policy and supporting process.

Staff also have access to a bank of resources on funding via the RIS and DAE teams and through our subscriptions to Research Professional and the UK Research Office (Brussels).

Infrastructure and facilities

In 2019, we opened our £22m National Horizons Centre bioscience facility with labs, equipment, biosciences and technical staff to support collaborative industry R&D. In 2021, we are developing a

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£12m Net Zero Industry Innovation centre to generate collaborative R&D in clean energy, low carbon and hydrogen. We will open a £22m Digital Life Centre in 2022, to support our growing expertise in AI, machine learning and cybersecurity.

Alongside our institutional investment in these strategic projects, Research Capital Infrastructure Funding of approximately £100,000 a year, is allocated to schools via an annual bidding process to support facilities and laboratories.

Our annual QR allocation (£1.53m) supports research across the institution: approximately 54% is delegated to schools; 13% supports studentships; and 33% is allocated by the PVC R&I against strategic initiatives. The PVC's QR has been used to contribute to collaborations such as FUSE (the centre for Translational Research in Public Health supported by the region's five universities), which gives us access to cross-institutional infrastructure, and the three TWI innovation centres (outlined in section 1) to generate collaborative research income and industry partnerships using TWI's specialist facilities.

We have also invested in systems including the Pure current research information system and repository, the Mendeley RDM system, and a Unit 4 research-costing tool. The intelligence generated from these systems has informed our research strategy and led to more effective research management. QR has also been used to provide bridge funding for researchers, fund consultants to deliver training and research services, and to contribute to the full economic costs of research.