

Institution: University of Portsmouth

1. Context and mission

[Portsmouth](#) is a modern university providing outstanding education underpinned by globally-recognised, impactful research. We have entered every REF/RAE since 1992, building on our strengths as our research grows. In REF2021, we are submitting 603 staff, more than double the number submitted to [REF2014](#). We are entering 16 Units of Assessment (UoA), including two for the first time (UoA18 & 33). Our submission contains over 1,400 outputs (50% more than 2014) and 54 impact case studies (25% more than last time).

Our 1,700 academics educate 25,000 students in subjects ranging from [Accountancy to Victimology](#). We have internationally excellent [Research Centres](#) in biomedical science, cosmology, criminal justice, and European and international studies, as well as emerging expertise in the fields of mental health, plastics pollution, ocean governance, and virtual reality. Interdisciplinary research centres around our [Thematic Areas](#) of democracy, health and wellbeing, security, sustainability, and technology.

We have 28 departments across [five faculties](#): Business and Law; Creative and Cultural Industries; Humanities and Social Sciences; Science and Health; and Technology. Central support for research is provided by [Research and Innovation Services](#) (RIS) and our [Graduate School](#).

Our [mission](#) is to create, share and apply knowledge to make a difference to individuals, society and our planet. Our ambition is to be the top modern university in the UK and one of the world's top 100 young universities by 2030.

2. Strategy

Our aim is to deliver globally-recognised research and innovative solutions that improve society. We have developed our goals through progressive university strategies for 2012-2017, 2015-2020, and [now 2020-25](#). These strategies have built momentum over the past decade, expanding our overall capacity and capability by growing strength in existing and emerging areas of excellence.

Our long-term strategic objectives are to:

1. **Engage** more people in excellent research, building critical mass in our existing and emerging areas of strength.
2. **Deliver** impact for our community, our region, and our planet.
3. **Strengthen** our capabilities by improving infrastructure and governance.
4. **Raise** the profile of our research and our researchers.

Institutional level environment template (REF5a)

Objective 1: Engage more people in excellent research, building critical mass in our existing and emerging areas of strength*1.1 Growing Capacity and Developing Capability*

1. To engage more staff in excellent research, we have focused on growing our capacity and developing capability. We have grown capacity by bringing in new researchers, targeting recruitment to secure researchers active in our areas of strength or who have the potential to grow into research leaders of the future (Section 3:People).
2. We have developed capability by helping our existing staff improve their research skills and develop their careers. We provide more - and better - training, support and guidance, and have redesigned our policies and processes for our University Workload Allocation (WLA), new [Performance and Development Review](#) (PDR), and academic promotions to ensure that staff are appropriately recognised and rewarded for their research contribution (Section 3).
3. As a result of our approach, more staff than ever are engaged in research. The average research WLA has risen by 12% since 2016 (243hrs a year across all staff in 2020) helping to double the number of people submitted to REF2021 compared to 2014. We have also seen the number of promotions increase, resulting in 30 new Professors and Readers in 2020 - the highest number in a year (30% female).

1.2 Building Critical Mass

4. To build critical mass around our areas of existing and emerging strength, we targeted resources to launch and support research centres and institutes and established five university-wide interdisciplinary Thematic Areas.
5. We support existing disciplinary excellence through ongoing investment in our established Institutes of [Cosmology and Gravitation](#) (ICG), [Biomedical and Biomolecular Sciences](#) (IBBS), [Criminal Justice Studies](#) (ICJS), and our [Centre for European and International Studies Research](#) (CEISR).
6. We have also invested in developing critical mass in areas of emerging excellence. Our [Centre for Operational Research and Logistics](#) (CORL) was established in 2014, building on recognised interdisciplinary work between our Business School and our Department of Mathematics. In its first five years, CORL generated £3M in income and produced over 100 outputs. In 2019, we launched our [Centre for Enzyme Innovation](#) (CEI) with an investment of £5.8M from Research England (E3 fund), which grew out of our world-leading enzyme research in IBBS (awarded 2019 [THE STEM Research Project of the Year](#)). CEI has now inspired our Theme-led [Revolution Plastics](#) (RP) project that draws together researchers from across the university to tackle global plastics pollution. RP is already influencing G20 and World Bank policy.
7. We launched the [Centre for Blue Governance](#) (CBG) and the [Centre for Creative and Immersive Extended Reality](#) (CCIXR) in 2020. CBG emerged from our growing expertise

Institutional level environment template (REF5a)

in marine conservation and ocean governance, bringing together 71 researchers from across the institution. CCIXR has grown out of interdisciplinary work in creative technology, architecture, fashion and sport science, securing £3.6m in Solent LEP funding to support its work on virtual and extended reality.

8. Our investment in areas of emerging excellence is ongoing, as we aim to create one new research centre or institute per year during our 2020-25 Strategy.
9. To further promote interdisciplinary research, we launched our five university-wide [Thematic Areas](#) in 2018: Democratic Citizenship; Future and Emerging Technologies; Health and Wellbeing; Security and Risk; and Sustainability and the Environment. These five Themes were chosen to reflect our existing and emerging strengths and to channel them into addressing major societal challenges as laid out in national research strategies ([Nurse Review 2015](#); [UK Industrial Strategy 2017](#)) and international commitments ([UN SDG](#)). Dedicated Theme Professors were recruited to provide high-level research leadership in each Theme, clustering colleagues from different disciplines and career stages, and identifying opportunities for collaboration and impact. Over the next five years, we will further embed our Thematic Areas into all aspects of our research, innovation and education.
10. Since 2018, we have reinvested our GCRF QR funding (£536k in total) to build our capacity around overseas development. This has resulted in major new projects, such as DFID-funded work in South Sudan (UoA25), augmented existing initiatives (CBG; UoA18) and increased the number of co-authors on our outputs from the [DAC list](#) of Least Developed Countries by 15%, helping to boost overall international co-authorship on our outputs to 60.4% in 2020.

Objective 2: Deliver impact for our community, our region, and our planet

2.1 Laying the Foundation

11. Impactful research takes time. Our 2012-2017 Strategy laid the foundation for our long-term impact agenda by identifying areas of institutional strength, aligning that work with societal challenges, and promoting impact through partnerships. We augmented this approach in our 2015-2020 Strategy, which added university-wide support for impact through our Thematic Areas.
12. This impact has been facilitated through local and strategic investment schemes over the past decade, including our university-wide Research Development Fund (2012-17) and Impact Acceleration Fund (2018-19), and now our Themes Research and Innovation Fund (TRIF), augmented by local strategic use of QR funding.
13. This long-term approach has created impactful research of global importance, as demonstrated through our 54 Impact Case Studies. We have helped protect pangolins (UoA20) and orang-utans (UoA4), and optimized the design of batteries for future electric vehicles (UoA10). We have improved wellbeing for wheelchair users (UoA11), and provided *Xenopus* frogs for vital biomedical research (UoA3). We have helped tackle the

Institutional level environment template (REF5a)

illegal ivory trade (UoA18), improved ocean governance (UoA17), and worked towards ending violence against women in developing countries (UoA25). We also educate millions through our world-leading citizen science projects (UoA9).

2.2 Delivering Impact through Strategic Partnerships

14. Having built internal capacity and capability, our 2020-25 Strategy shifts our focus outward. We have committed to developing five major new strategic partnerships to deliver solutions that meet society's needs. For example, CORL has partnered with local councils to implement innovative solutions for moving people and freight across the region through the DfT-funded Solent Future Transport Zone (UoA10).
15. The development of such partnerships is coordinated by Collaboration Managers in our Research and Innovation Services (RIS; paragraphs 56-58), working closely with Faculty colleagues and aided by a major investment in a new Customer Relations Management (CRM) software system in 2019. As a result, we have already witnessed a growing number of global (e.g. UNESCO, African Union, General Motors, Coca Cola) and UK partnerships (e.g. Wildlife Trusts, RNIB, RNLI).
16. We are also working to become a leading civic university (2020-25 Strategy) by building on our existing regional strategic partnerships. These include [Portsmouth Hospitals University NHS Trust](#), the Royal Navy, BAE Systems, [Portsmouth Football Club](#), and Hampshire Constabulary (our [Forensic Innovation Centre](#) was awarded the [2015 THE Outstanding Employer Engagement Award](#)).

2.3 Delivering Impact through Enterprise

17. We recognise business and enterprise as key enablers for delivering societal impact, and work closely with local SMEs to build long-term relationships, as recognised by the [Small Business Charter](#) Kitemark status of our Business School. Our [Innovation Connect](#) service brings companies onto campus by offering office space and a central hub for business-to-university engagement. We host an ESA ambassador for business applications, the [Supporting Innovation and Growth in Healthcare Technologies](#) (SIGHT) programme, and the UKSA [South Coast Centre of Excellence in Satellite Applications](#) (SCCoE).
18. We have also engaged in 33 KTPs over the REF period (up from 26 in the last REF period), plus an additional 26 Innovate UK funded projects, worth a total of £5.8M. These projects help commercialise our research and develop business applications. In 2020, we submitted the largest number of applications of any UK university to the national [Ingenuity programme](#) for early investment in SMEs with a global societal impact.
19. Over the next five years, we will deliver a strategy for jointly facilitating research impact and knowledge exchange (KE) across the institution, bringing together our support for both - maximising academic engagement and increasing benefits for partners.

Institutional level environment template (REF5a)

Objective 3: Strengthen our capabilities by improving infrastructure and governance*3.1 Strengthening Central Infrastructure*

20. Our central [RIS](#) was restructured in 2016 to federate support for research, knowledge exchange, external engagement, and to accommodate our new Thematic Areas. Since 2018, the Themes have supported 168 bids, with a success rate of 52%, securing £20M of external income.
21. In 2011, we established our [Graduate School](#) which continues to facilitate recruitment and training of postgraduate research students (PGRs) and support their supervisors. As a result, we have seen a 40% growth in PGR numbers during our 2015-20 Strategy - reaching nearly 800 by 2020 - while still achieving 82% overall satisfaction in the most recent PRES survey.

3.2 Strengthening Research Governance

22. Our 2015-2020 Strategy committed us to the highest standards of academic, professional and research integrity. We conduct all research under the aegis of our [Research Ethics Policy](#) (refreshed in 2019) and in compliance with the Concordat to Support Research Integrity, the UK Policy Framework for Health and Social Care Research, the UKRIO Code of Practice for Research, and UKRI guidelines. We follow the Concordat on Openness on Animal Research, and signed the San Francisco Declaration on Research Assessment (DORA).
23. All research projects undergo faculty ethics review overseen by our University Ethics Committee (paragraph 59). Incidences of research misconduct are investigated using our Allegations of Misconduct in Research procedure, with outcomes reported to the Board of Governors and published annually online. We investigated just three allegations of misconduct in 2020.
24. In 2014, we adopted Pure as [our research repository](#) and introduced an Open Access (OA) Policy requiring staff to deposit all outputs in compliance with OA principles. Compliance has risen from 13% in 2014 to 88% in 2020. In 2015, we published our Research Data Management (RDM) Policy, with additional guidance around open data, and appointed a Research Data Officer in 2017 to promote best practice. As a result, compliance with our RDM policy rose to 63% by 2020, in line with our goal to achieve 95% compliance by REF 2028.

Objective 4: Raise the profile of our research and our researchers

25. We continue to invest in raising public awareness of our research and researchers through our 2015-20 and 2020-25 Strategies. This awareness provides new opportunities for follow-on research and impact, helping develop relationships with new collaborators, partners and beneficiaries.
26. In 2019, we recharged the style and infrastructure of [our University website](#), with research as a key, integrated part of University life, celebrating our successes and

Institutional level environment template (REF5a)

providing important information about colleagues, research centres, and stories (e.g. [blogs](#)). In 2020, our research pages received over 200,000 views.

27. We launched "[Solve](#)" in 2020, a magazine providing in-depth profiles of our researchers for alumni, donors, partners and a general international audience. The first printed edition reached 250,000 people across the world, with many more engaging online. Further editions are coming, with an associated [podcast series](#) "Life Solved". Such media have generated new partnership requests, especially for Revolution Plastics, and alumni volunteering, forming a vital part of our alumni fundraising (paragraph 62).

28. We actively promote ourselves by strategically engaging with "[The Conversation](#)", an online platform for academic news and views, providing both encouragement and training to our academics to write timely articles. We are regularly within the site's Top 10 UK universities for both articles and readership, already publishing over 300 online articles with 9.5M global reads.

3. People

We invest in the capacity and capability of our staff and students to deliver our strategic objectives for research and impact, focusing on:

1. **Recruiting** a diversity of staff to be research leaders of the future.
2. **Enabling** all to excel in research through better training and support.
3. **Embedding** equality, diversity and inclusion.
4. **Recognising** and rewarding staff who deliver excellent, impactful research.

Objective 1: Recruiting a diversity of staff to be research leaders of the future.

29. We have focused on recruiting a diverse staff with the potential to be research leaders. We encourage recruitment from less traditional backgrounds and under-represented groups and welcome staff from practitioner backgrounds, supporting them to apply their expertise to academic research and to gain qualifications. As a result, the proportion of our academic staff with a PhD has risen from 54% to 63% over this REF period.

30. Our recruitment processes are designed to minimise unconscious bias through inclusive language in adverts, clearer job descriptions/person specifications, and recruiter training across the organisation. All staff complete unconscious bias training and all interview panels include a trained interviewer and female panel interviewers. We are currently introducing anonymous recruitment to reduce unconscious bias further.

31. As a result, we have seen the proportion of female staff increase from 43% to 46% over the last five years, with the proportion of shortlisted women increasing from 23% to 30% and the proportion of women offered positions increasing from 39% to 51%. Likewise, we have seen our proportion of BAME staff increase from 12% to 16%, with the proportion of

Institutional level environment template (REF5a)

UK/EU/Swiss BAME staff shortlisted increasing from 13% to 16%, and the proportion offered a position increasing from 11% to 13%. Of current academic staff recruited over the REF period, 3% were aged 25 or under, 48% were 26 to 35, 28% were 36 to 45, 14% were 46 to 55, and 7% were 56 or above.

32. We actively support the recruitment of future research leadership through external fellowships (e.g. UKRI FLF). Faculties are encouraged to target talented individuals by offering proleptic posts, match-funding, and assistance preparing applications.

Objective 2: Enabling all to excel in research through better training and support

2.1 Staff Training and Development

33. Since 2014, RIS has delivered our Research and Innovation Staff Development Programme (RISDP, [@DevelopRI](#)), providing 238 seminars across topics including grant-writing, networking, and research integrity. Over 1,200 staff have participated so far.
34. In 2020, we supplemented RISDP with a cohort development programme, providing targeted mentoring, coaching and training for groups of researchers at three key stages of professional development: ECRs, Readers, and Research Leaders. We recruit staff through open calls, with targeted encouragement for under-represented groups. Fifty-three researchers are participating in the first year, increasing to 80 available places a year going forward.
35. We support our female staff through access to the Advance HE [Aurora leadership programme](#), with 113 women completing it since 2014. We also provide places on the [Springboard](#) (female) and [Navigator](#) (male) personal development courses from Springboard Consultancy.
36. We introduced an annual University Sabbatical Scheme in 2016, offering competitive, flexible, funded sabbaticals to academic staff. So far, 97 colleagues have used this scheme for research sabbaticals, generating new partnerships, projects, outputs and networks.
37. Mentoring is a fundamental part of personal development and vital for a sustainably positive and inclusive research environment. In 2020, we invested in a new university-wide [online mentoring platform](#), with 107 mentees and 69 mentors on the platform to date, and 60 live mentoring partnerships.

2.2.1 Targeted Support - PGRs

38. The Graduate School (GS) Development Programme (GSDP) provides extensive training for PGRs and supervisors aligned to the [Vitae Researcher Development Framework](#) (RDF). They run nearly 200 face-to-face sessions each year, accompanied by online resources. Faculties and departments also provide discipline-specific training, including for students on our externally-funded doctoral training programmes (STFC, ESRC, BBSRC). Our annual university-wide Festival of Doctoral Research provides

Institutional level environment template (REF5a)

students with opportunities to network and present their work to the whole University community.

39. Our GS led a nationally-funded (RE/OfS) study of good practices to support PGR mental health. Our findings are now embedded into all aspects of our PGR induction, training and progression, with regular monitoring through the GS Management Board. We are exporting this good practice as a Mental Health and Wellbeing module for the Vitae RDF.
40. Since 2014, this targeted support has helped maintain high PGR completion rates (79% overall) and strong PRES scores; consistently above sector norms.

2.2.2 Targeted Support - ECRs and FTCs

41. We are committed to the [Concordat to Support the Career Development of Researchers](#), receiving the HR Excellence in Research Award in 2013 (renewed in 2019). Early career researchers (ECRs) are a key group within the University and make up 20% of this REF submission. ECRs are supported to establish themselves through targeted workload allocations and ring-fenced development funds, as well as equal access to our University-wide RDF (2012-2016) and now TRIF. In 2015, we created a University Researchers' Network for ECRs and mid-career researchers to facilitate networking, peer support and shared learning.
42. For our fixed-term contract (FTC) researchers, we created our Research Staff Forum, providing a pathway for institutional representation. FTC researchers can also access the same training, funding opportunities and support as permanent staff, but with appropriate recognition of their status, e.g. we have established a dedicated FTC-researcher track within our PDR system.

Objective 3: Embedding equality, diversity and inclusion

43. Equality, diversity and inclusion (EDI) are embedded throughout our institution via our [Athena Swan](#) and [Race Equality Charter](#) (REC) action plans.
44. We achieved an Athena Swan Institutional Bronze award in 2014 (reaffirmed in 2018) and will submit for an Institutional Silver award in 2021. Presently 11 departments and one Faculty possess Athena Swan Bronze awards, with the expectation outlined in our Athena Swan action plan for all departments to be Bronze or better before the next REF. We have identified Athena Swan Champions across the University and established dedicated funds to support activity that promotes gender equality. We host an annual university-wide Athena Swan Conference to raise awareness and promote action around gender equality.
45. In 2018, we signed up to the REC principles of tackling racial inequalities in the HE sector. We submitted our full action plan in February 2021, setting out the steps we will take to identify challenges, address problems, and improve the experience of BAME staff and students. We are also a [Stonewall Diversity Champion](#), promoting the inclusion of the LGBTQ community on campus, and a member of the [Disability Confident](#) scheme.

Institutional level environment template (REF5a)

46. In 2015, we introduced a flexible and remote working policy resulting in a six-fold increase in applications over the last five years (108 for 2019/20, of which 96% were approved). In light of the mass shift to home-working, we are now reviewing this policy to further support agile working for all. We also reimburse caring costs associated with attending conferences, networking and events.
47. All staff complete core training on unconscious bias, anti-bullying and harassment, and diversity and inclusion. Line managers must also complete training on managing stress, mental health awareness and equality, dignity and respect in the workplace. Staff can also undertake a range of optional training courses on gender diversity, Islam and Muslim culture, disability, autism, and tackling hate crime.
48. We support our staff and students via the provision of several informal communities including the LGBTQ Network, Staff Multicultural Network, Women's Staff Network, Disability Staff Network, and Parents and Carers Network.
49. We monitor and publish our [gender pay gap](#), which was 14.2% for 2018 - lower than that for the wider economy (17.4%) and the HE sector (15.5%). The gender pay gap for staff submitted to REF 2021 is 6%, which is lower than the gap for UK academic staff (11%). However, we will continue to identify and eradicate all pay gaps as per our strategic target to reduce our gender pay gap to less than 10% by 2025.

3.1 EDI during REF2021 submission

50. Our [Code of Practice](#) outlines the process of identifying staff and selecting outputs for REF2021. All staff involved in making decisions during this submission were required to complete specialist Advance HE EDI training and were required to refresh their core EDI training (paragraph 47). We also appointed UoA Co-Coordinator in 2018 to actively promote diversity and build research leadership capacity for the future. An appropriate WLA was provided to reflect the importance of these roles. Five Equality Impact Assessments (EIAs) were undertaken during REF preparations to ensure no bias in our processes.
51. The proportion of women submitted (40%) is similar to that for women eligible (43%). Likewise, 17% of eligible staff are BAME, and 17% of submitted staff are BAME. Staff with a declared disability make up 5% of our submission, compared to 8% of eligible staff. The age profile is well-distributed; 65% are in the 36-55 bracket, with 17% older and 17% younger. This is skewed slightly higher in the middle age bracket than the eligible staff population. We see no bias against part-time staff, who make up 11% of submitted staff compared to 14% of eligible staff.
52. For output selection, female authors make up 37%, with BAME authors providing 15%, and colleagues with declared disabilities at 5%. These output proportions are consistent with our staff submission percentages above.

Institutional level environment template (REF5a)

Objective 4: Recognising and rewarding staff who deliver excellent, impactful research

53. Over the last five years, our online WLA and PDR systems (paragraph 2) have enabled supportive discussions between line managers and staff about work priorities, career progression, and aspirations, and set clear expectations for long-term performance against our strategic goals and values. Research and impact are a crucial part of such discussions. Guidance is provided on the appropriate WLAs for a range of research activities and personal development objectives.
54. The university refreshed its academic promotions policy in 2017, creating clear pathways via research, innovation, and education. Our promotion process is run annually, with considerable formal (seminars, workshops) and informal (mentoring) advice available to help all staff develop their applications, with a particular emphasis on encouraging applications from under-represented groups. Of the staff submitted to this REF, over 50% have received at least one promotion at the university since 2014.
55. Line managers are empowered to recognise exceptional performance through a Recognition Award of up to £2k per award, and staff and students can nominate colleagues for the annual [Vice-Chancellor's Awards for Excellence](#).

4. Income, infrastructure and facilities

To support impactful research, our approach to improving institutional facilities, infrastructure and governance focuses on:

1. **Consolidating** central support for research and impact and strengthening governance.
2. **Generating** extra income to be reinvested into facilities and infrastructure.
3. **Reinvesting** in areas of existing and emerging strength and the generation of real-world impact.

Objective 1: Consolidating central support for research and impact and strengthening governance.

56. [RIS](#) is our central hub for research and impact, supporting the Faculties with grant-writing, proactively identifying opportunities and initiatives, and operating our internal Peer Review College. Our central teams work closely with Faculty teams to support the preparation of bids, aid in project delivery, and provide advice on contracts and post-award issues.
57. Each Faculty has a RIS Collaboration Manager to support business engagement, consult on IP issues and facilitate strategic partnerships. RIS also provides a dedicated Research Impact Manager and two Impact Officers, co-located in the Faculties, to help generate and record impact.

Institutional level environment template (REF5a)

58. RIS was restructured in 2016 to consolidate support for research, impact and KE, and to accommodate our Thematic Areas. This central support has driven growth in research funding. Over this REF period, the number of UK Research Council awards grew by 60%, with an increased value of over 50%. We also achieved a 20% increase in income from non-UK sources over the same period.

59. Our [University Ethics Committee](#) is supported by RIS and our dedicated University Ethics Advisor, a recognised expert in research ethics and integrity who holds several national roles (UoA3).

Objective 2: Generating extra income to be reinvested into facilities and infrastructure.

60. A major objective for generating more income has been to encourage and enable staff to be more ambitious when bidding for funding. Our Thematic Areas provide training and bid support, identifying and developing opportunities for impactful, interdisciplinary research across more diverse funding sources. We have already seen bid numbers grow by 26% (from 275 in 2014 to 346 in 2019), and income up by 35% to £9.5M. We have set an ambitious target to increase our annual R&I income by £10M by 2025.

61. The development of large-bid capability is a key element of our strategy going forward. Dedicated Research Development Officers for our Thematic Areas are able to lead on large and/or interdisciplinary bids. Recent successes of this strategy include securing LEP funding for CEI (£1M), NERC funding for Revolution Plastics (£700k), three EDRF grants for low-carbon and healthcare technologies (£6M), and Innovate UK funds for drones and wind-turbine research (£1.8M).

62. Our 2020-2025 Strategy has identified philanthropic and alumni funding as a vital opportunity to generate income and build partnerships to support our research. In 2019, we established a new Alumni and Advancement team who had their first success in 2020 with a Flotilla Foundation grant (£234k) for Revolution Plastics. Our target is to secure at least £1m per year in philanthropic funding by 2025.

Objective 3: Reinvesting in areas of existing and emerging strength and the generation of real-world impact.

3.1 Reinvesting in Facilities

63. We invest our research income into infrastructure, facilities and support for our existing and emerging areas of strength. Funding is distributed centrally via our annual Strategic and Financial Planning process and our Thematic Areas (£6M a year). Over this REF cycle, we have invested more than £95M of direct and matched funding into strategic projects, equipment, facilities and our estate. In addition, we have directly reallocated QR funding (£5.4M in 2020) to Faculties to enable local strategic decision-making, where it is used for additional PGR bursaries, facilities and equipment, ECR support, and staff professional development (e.g. travel and training).

Institutional level environment template (REF5a)

64. Since 2014, £6.4M of central funding has been reinvested to support strategically important research facilities. This includes our [Extreme Environment Laboratories](#) (UoA24), European Xenopus Resource Centre (UoA3), [Zeiss Global Centre](#) (ZGC), and most recently £8.7M of match funding for both the CEI and CCIXR. We have also invested in state-of-the-art equipment, including our 3702-core [SCIAMA supercomputer](#) (UoA9) and two high-resolution X-ray microscopes (£1.4M) for bioengineering (UoA12).
65. Our 2020-25 Strategy recognises the role of our estate as a key enabler of our research. For example, our £14M investment in the Eldon Building in 2014 laid the foundation for CCIXR, while our £12M investment in the [Future Technology Centre](#) gave us the ZGC and supports Innovation Connect. Since 2014, we have invested £5M in our library to provide outstanding learning resources, and our £57M investment in the new [Ravelin Sports Centre](#) (opening in 2022) will boost our Health and Wellbeing Thematic Area. Our statement [Victoria Park Building](#) (opening 2024) will revolutionise research and teaching in our Faculties of Business and Law and Humanities and Social Sciences.

3.2 Sharing Facilities to Generate Impact

66. We offer open access to our [facilities](#) to external academics and partners, helping to drive new opportunities for research collaboration that include business and industry. This approach has seen the number of external collaborators included in our UK Research Council proposals increase by 50% since 2014, with the proportion of our outputs with corporate co-authors increasing by 17%.
67. We enable our researchers to use external specialist facilities by funding network development, travel and access. We invest in memberships such as the [Dark Energy Survey](#), [Chatham House](#) in London, the [Life Sciences Mass Spectrometry Facility](#) (LSMSF) in Glasgow and Bristol, and the [Atom Probe Facility](#) in Oxford. We received over £1.4M of in-kind funding from STFC and other UKRI facilities providers.