Institutional-level environment statement (REF5a)

Institution: University of Bath

1. Context and mission

1.1. The University of Bath is a research-intensive institution of learning, committed to building a better world by tackling the biggest challenges on a local, regional, national and global level. The University's Royal Charter (1966) describes how 'The objects of the University shall be to advance learning and knowledge by teaching and research... in close association with industry and commerce', and this strong sense of outward-looking purpose pervades our campus-based Faculties of Engineering & Design, Humanities & Social Sciences, Science and the School of Management (as shown in Figure 1). Distinctively, our institution combines recognised excellence in both teaching, and in research and scholarship, and focuses on the generation, communication and application of knowledge across all career stages.

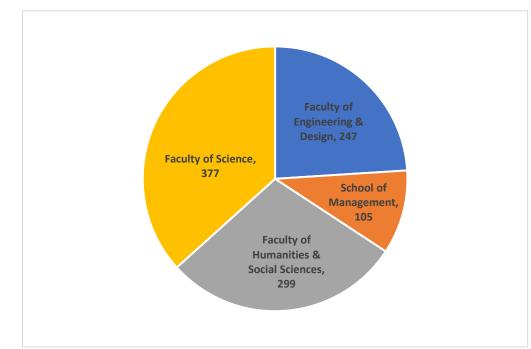


Figure 1: Academic staff headcount by Faculty

- 1.2. The **vitality** of our research environment is evident in our well-resourced and established partnerships, research institutes and centres, supported by our established but responsive systems of policies, infrastructure, and facilities. The **sustainability** of our research is based on doing research of value, supported by growth in external funding from diverse sources and advancing our work in collaboration and partnership.
- 1.3. We have a strong commitment to nurturing the emerging generation of researchers and are committed to providing an environment that values and promotes diversity.
- 1.4. We are the University of Bath a global university, but also of the West Country, of the South West and Wales, and of England and the UK. Our

regional ambitions play out, in part, through our being a part of the GW4 regional consortium of research-led universities, and through our work with, and our role in, the regional authorities and LEPs.

- 1.5. Our research focuses on collaborative, interdisciplinary approaches to realworld problems, including identified major challenges of Sustainability, Digital, and Health and Wellbeing. These topics resonate across our submission.
- 1.6. Through the REF period under review, we have transformed the engagement of our staff and faculty with research. This has been made possible by the creation of dynamic groups of researchers, often driven and energised by new appointments and frequently benefiting from cohorts of early- and mid-career researchers. These groups have invigorated our existing strengths and added new strengths to our research portfolio. They have drawn together into broad research communities working on key research themes, in many cases closely aligned to regional and national needs, and addressing both academic and real-world global challenges, inspired by common purpose. Early successes out of this endeavour can be found in, for example, the Institute of Advanced Automotive Propulsion Systems and the Milner Centre for Evolution.

2. Strategy

Research Strategy

- 2.1. Our vision is to be recognised internationally for our research excellence, achieving global impact through our research and strategic partnerships. This vision is advanced in the University's Research Strategy which runs from 2016 2021 and has driven our research environment. The aims in the strategy are:
 - extend our research power by recruiting dynamic researchers, nurturing their talent and fuelling their ambition;
 - affirm our international influence through worldwide partnerships to create dynamic responses to research and educational opportunities;
 - attract increasing numbers of postgraduates by enhancing our existing prestige portfolio with innovative and global modes of delivery;
 - enrich the postgraduate and undergraduate experience by engaging purposefully with our student, donor and alumni communities;
 - expand our capacity and capability by investing in new infrastructure, facilities and technologies.
- 2.2. The institutional objectives that were outlined in our REF 2014 statements were focussed around these strategic aims. We have made substantial progress in achieving these aims, while ensuring they are underpinned by a proactive approach to Equality, Diversity & Inclusivity.
- 2.3. We have invested significantly in staff appointments, with our research active staff FTE increasing from 870 FTE to 1,060 FTE over the current REF period, with a focus on increasing diversity and enhancing multidisciplinary research.
- 2.4. The REF period has seen a significant and strategic development of our international partnerships, which are increasingly reflected in our publications. The percentage of our papers with international co-authors has increased from 46% to 59% over the REF period, as illustrated in Figure 2 for the last five years.
- 2.5. In 2015 we established our Global Chair scheme to fund the engagement of distinguished, globally renowned scholars in high-profile research activity at the University. In 2019 we launched the Women Global Chair scheme to enrich the celebration of women academics across all disciplines. The scheme has seen us welcome 13 Global Chairs from all six continents.



Figure 2 Location of co-authors on research publications in the last five years

- 2.6. Our PGR headcount has increased from 1,225 in 2013/14 to 1,580 in 2019/20. A significant proportion of this growth has been in our <u>doctoral training entities</u>. We have led/partnered in 21 DTEs, with funding spanning the Research Councils.
- 2.7. Our research portfolio has increased and diversified over the period, increasing from £119 million in 2014 to £155 million on 31/7/2020 with funding from over 450 different funders.
- 2.8. We have made substantial investments in our research environment building on our strengths and supporting emerging areas of expertise. Four illustrative examples are:
 - <u>The Milner Centre for Evolution</u> building (value £8m) opened in 2018, creating a home for a unique, cross faculty research centre bridging biology, health and education. The Centre has received over £6.0m in donations, most notably from Bath alumnus Dr Jonathan Milner.
 - Building **10 West** opened in July 2016 (value £30m) and houses our Doctoral College, the Department of Psychology including extensive laboratory space, the <u>Institute for Policy Research</u> and a postgraduate working space.
 - The Institute for Advanced Automotive Propulsion Systems (IAAPS) (project value £70m) builds on a strong track record of delivering propulsion system research with impact at Bath. To house the institute, the University of Bath and South Gloucestershire Council entered a joint venture and purchased the Bristol & Bath Science Park (BBSP) and a major building project is nearing completion. The BBSP is already the home of the National Composites Centre.
 - Our £72m investment in a landmark <u>School of Management</u> building due to open in 2021 will create new and novel research and collaboration environments add over £240 million of value to the B&NES economy over 25 years.

- 2.9. Our future strategic aims for the next REF period will be defined by our five-year strategy currently under development during 2021. Emerging features include:
 - An increased focus on problems of global, national and regional significance, guided by our broad themes of Sustainability, Health and Wellbeing, and Digital, building our international reputation through the quality of our research, our partnerships, and the strength of our leadership,
 - Enhanced local and regional engagement, as we develop our sense of place to build our city and the region. This includes working alongside the Bath City and Council to enhance the opportunities and the benefits of the SetSquared Bath Innovation Centre for the city and the region as we emerge from COVID and reimagine the city of Bath, supporting the Swindon and Wiltshire LEP in their development ambitions for sustainable technologies (as laid out in their Local Industrial Strategy), using our national leadership in cybersecurity to play a role in synthesizing relevant assets across the broader region including the Western Gateway, and using our Advanced Automotive Propulsion (IAAPS) facility to support the regional development of the automotive industry and supply chains,
 - A greater focus on partnership: globally, nationally, regionally and locally, gaining the scale and breadth of resources required to tackle the most substantial research challenges. Our partnerships and agreements with leading universities across the globe sit alongside the regional GW4 Alliance that fuses the research power of the Universities of Bath, Bristol, Cardiff and Exeter. With GW4 we will act to support the regional Western Gateway Powerhouse to develop the region addressing the challenges of Net Zero, Digital, and Health within the region,
 - Nurturing and developing our research environment so that our University continues to attract the brightest and best students and researchers,
 - Aligning our research closely to emerging national priorities so as to play our part in post-COVID-19 recovery and in identifying and developing post- Brexit opportunities,
 - Fostering a diverse inclusive research culture that values and supports the integrity of our research, to the benefit of our broader research community.

Impact

- 2.10. Benefitting society through engagement, partnership and collaboration in our research is at the heart of our **mission** as a University: *to deliver world-class research and teaching, ... benefiting the wider population through our research, enterprise and influence.*
- 2.11. Research carried out by staff at Bath has made an enormous difference across the world. Many of these impacts are reported in our REF impact case studies, with impact reported in all six continents.
- 2.12. A particular highlight has been the impact of our research on carbon emissions. As exemplars, work in the Faculty of Engineering and Design has led to reductions of more than 200,000 tonnes CO₂/annum from more efficient car engines, of 575,000 tonnes/annum from more efficient electricity networks and 1,200 tonnes/annum from improved aerospace parts. Work in the Department of

Economics has led to a commitment to replace 18,000 diesel vans with electric models by 2028.

- 2.13. Our institutional culture is to value excellent research where impact is an integral part. Since 2016 we have included impact in promotion criteria for research active staff and celebrate it through institutional level awards and events. Impact is led at an institutional level by our Pro-Vice-Chancellor (Research) and the Research and Knowledge Exchange Committee, supported by the Associate Deans (Research) and Faculty and Departmental Research Committees. Each academic department has an impact champion, with Professional Services support led centrally from Research & Innovation Services (RIS).
- 2.14. Research Institutes are important features in our stakeholder engagement. For example, the <u>Institute for Policy Research</u> (IPR) transforms the impact potential of our broader research, offering opportunities for leading researchers to share their ideas and advances with policymakers, while enabling the IPR to develop its own distinct strand of policy research. The <u>Institute for</u> <u>Mathematical Innovation</u> (IMI) is outward-facing and uses the power of Maths to address challenges in other areas of activity, including academics, but extending across diverse sectors including the agri-food, aerospace, energy, healthcare and retail sectors. IMI was highlighted as a successful model in the 2018 <u>EPSRC Independent Review of Knowledge Exchange in the Mathematical Sciences</u>.
- 2.15. At an institutional level our impact-related funding streams include EPSRC Knowledge Transfer Account and Impact Acceleration Account funding since 2009, Global Challenges Research Fund and Strategic Priorities QR funding. Bath has a strong track record in Knowledge Transfer Partnerships (KTP) with 29 KTPs being awarded during the REF period: thirteen of the eighteen completed were rated as outstanding or very good. In the REF period, we have led four European Regional Development Fund business acceleration hubs designed to utilise our research strengths to boost the local economy. These include the **Social Enterprise and Innovation Programme** (SEIP) where independent evaluation of the programme demonstrated an economic benefit of £16.3m and its social impact, including improved inclusivity and wider societal benefits such as improved quality of life, was valued at approximately £200m.
- 2.16. Since 2012, our Public Engagement Unit has worked to foster a culture where public engagement with research is recognised, practised and valued. Our national leadership is demonstrated by our participation on several external funding review panels and awards from a variety of funders. Our perception of the role of Public Engagement continues to evolve, as we recognise the value of our research to new publics, and adapt our activities to address them.
- 2.17. Our SETsquared Innovation Centre helps to diversify the economic profile of the City and way beyond by incubating high-growth businesses, and co-ordinating several regional networks in key technology innovation sectors. The networks connect corporates, growth businesses and the University's research base to facilitate knowledge exchange and the flow of ideas and innovation. SETSquared is an enterprise partnership between the five research-led universities of Bath, Bristol, Exeter, Southampton and Surrey, three times

recognised as Global No. 1 University Business Incubator and having contributed more than £3.8 billion in UK GVA.

- 2.18. As an anchor institution in Bath, we have a key role in delivering and supporting the City's economic growth ambition. In partnership with Bath & North East Somerset (B&NES) Council, we've worked over the last three years to deliver the socio-economic objectives of its Corporate and Economic Development Strategies. We are now working towards a mutual commitment to develop a Civic University Agreement to support the next evolution of that relationship.
- 2.19. We are currently building on our research strengths to achieve further impact with a deliberate focus on our regional engagement. Our plans include:
 - I-START a collaborative venture with B&NES Council, Bath Spa University and Bath College to create an inclusive research, business incubation and accelerator endeavour where our world-class research and innovation expertise can transform innovative ideas into viable ventures.
 - DETI the University is a part of the Digital Engineering Technology and Innovation (DETI) consortium. This WECA-led initiative helps companies identify and develop the tools, technologies and processes to rapidly accelerate digital engineering capabilities and identify the skills to embed digital innovations.
 - **MyWorld** the Strength in Places-funded MyWorld project (led from Bristol) aims to build the Bristol/Bath reputation in the creative media industry to be world leading.

Research Integrity and Openness

- 2.20. As an institution, we are committed to maintaining the highest standards of research excellence and integrity, consistent with the Concordat to Support Research Integrity.
- 2.21. Research Integrity is supported by: <u>Academic Ethics and Integrity Committee</u>, <u>University Research and Knowledge Exchange Committee</u>, <u>Animal Welfare and</u> <u>Ethical Review Body</u>, <u>the Social Sciences Research Ethics Committee</u>, <u>Psychology Ethics Committee</u> and <u>Research Ethics Approval Committee for</u> <u>Health</u>. This committee structure is currently being reformed to refresh and refocus its remit in response to the ethical challenges posed by artificial intelligence, data and other rapidly-evolving research areas.
- 2.22. At a School/Department level the <u>Departmental Research Ethics Officers</u> and <u>Sponsorship Facilitators</u> provide help and advice on specific projects.
- 2.23. The Department of Policy, Planning and Compliance monitor compliance with our policies and together with the Vice-Chancellor's Office ensure that guidance is accessible and up to date.
- 2.24. We have been named a *Leader in Openness* by Understanding Animal Research around our use of animals in research "in recognition for committing considerable resource and energy to following best practice, embedding

openness within the organisation, and making the aims of the Concordat on Openness on Animal Research in the UK a reality".

- 2.25. Our Library was one of the first UK academic libraries to establish a permanent open access team, supporting researchers in making their research available via open access from training, to grant applications and through to publishing. In 2011 the University's <u>Open Access Deposit Mandate</u> (updated 2017) was published, emphasising our commitment. In 2019, the Leiden Ranking introduced a new open access indicator, and we ranked 15th in the world with 75% of our papers open access.
- 2.26. We were also one of the first UK academic libraries to establish a permanent data management service. This service supports researchers in the planning, curation, preservation, and publication of research data and software. Our data librarians provide extensive guidance, training, advice, and advocacy, and have led cultural change to where good management of data is now considered a core tenet of research and is embedded in doctoral training. The University's expectations on researchers for open data are aligned with the Concordat on Open Research Data and the FAIR principles and set out in the internationally recognised Research Data Policy.
- 2.27. In 2017 we published our <u>Principles of Research Assessment and</u> <u>Management</u>, being the second University in the UK to do so. This was our institutional response to the Metrics Tide Report: an institutional set of principles that work for all of our disciplines and for all research performance indicators. A further push for culture change is now underway, prompted by evolving expectations.

Interdisciplinary Research

- 2.28. Our compact campus makes interdisciplinary research easy and our research centres and institutes are fundamental to supporting it. We regularly run sandpits to enhance cross-disciplinary working, build research collaborations and develop large interdisciplinary funding applications. The most recent drive was in response to COVID.
- 2.29. Our research strengths make us well placed to address the big research challenges through an interdisciplinary approach. Exemplars include our work on the policy and ethical considerations of big data and AI, research to improve housing in refugee camps and the use of bacteria to 'heal' concrete.
- 2.30. Our externally funded DTE's have been a force for interdisciplinary research, with those in Statistical Applied Mathematics (<u>SAMBa</u>), Sustainable Chemical Technologies (<u>CSCT</u>), Accountable, Responsible and Transparent AI (<u>ART-AI</u>), and Advanced Automotive Propulsion Systems (<u>AAPS</u>) being especially powerful in this regard.

3. People

Staffing strategy and staff development

- 3.1. We have invested significantly in staff appointments through the REF period, with our research active staff FTE increasing from 870 to 1,060 FTE over the current REF period. 97% of our submitted staff are on open-ended contracts.
- 3.2. A significant proportion of this recruitment has been at early career stage (see below) with Early Career Researchers accounting for 21% of our submitted staff. Our staffing strategy embraces diversity as a valuable cornerstone of successful research, and we have positively sought diversity in recruitment.
- 3.3. All staff who are employed with independent research as a part of their contract, are supported in numerous ways in their research and scholarship. These include reserved time, automatic access to the services and structures that support research at every level, and the right to apply to the University's well-subscribed and successful sabbatical scheme.
- 3.4. In 2016, we developed a new workforce strategy to underpin the University Strategy. This builds on national work including that from UKRI and has the following research related aims:
 - Develop strategic leaders who are alert to opportunities, plan and focus on outputs and have the ability to engage, trust and empower others to deliver
 - Actively intervene to develop a talented workforce
 - Create new styles of performance development, tailored to the University
- 3.5. Development of our researchers, at all levels, takes place in an active and engaged research community. Peer review and mentoring are encouraged and where disciplinary differences are identified they are supported as appropriate. At an aggregated level most commonly by academic Department we use external benchmarking to enable researchers to understand institutional performance and to be confident that their own careers are developing them as globally competitive.
- 3.6. To realise the University's ambition to have a research culture that fosters the highest achievements, encourages originality and innovation and embraces diversity, a portfolio of development opportunities is offered. The Academic Staff Development Team provides support for all staff, with a focus on nurturing early career researchers. Development opportunities align to the Research Development Framework and UK Professional Standards Framework as well as the strategic priorities of the University.
- 3.7. We recognise recruitment as a powerful opportunity for change and we advance equality, diversity and inclusion through our recruitment processes. This includes analysing job advertisements for bias in language and offering inclusion advice for drafting to recruiting managers. Our recruitment team all hold the <u>Ambassadors for Autism certification</u> following the introduction of a series of evidence-based alterations to make recruitment processes more autism-friendly. Anonymised shortlisting is available for all recruitment.

3.8. The dedicated careers advisor for research staff provides access to online and in-person career management training sessions, 1-1 advice as well as extensive tailored web resources, regular blog articles tailored to the career development needs of research staff, emails on career opportunities inside and outside of academia, career panel and facilitates access to professional networks inside and outside of research.

Implementation of the Concordat to Support the Career Development of Researchers

- 3.9. Our alignment with the Concordat is one of the key tenets underpinning our strategic aim to recruit and retain excellence, and we have held the HR Excellence in Research Award since September 2011.
- 3.10. The responsibility for implementation lies with the Pro-Vice-Chancellor Research and is managed by the Research Staff Working Group (RSWG). The group is cochaired by a senior member of academic staff and a member of research staff, supported by the dedicated Researcher Development Manager. The research staff co-chair attends University Research and Knowledge Exchange Committee.
- 3.11. The RSWG has developed a shared '<u>Vision for research staff working at the</u> <u>University of Bath</u>' setting out our vision for a highly skilled and empowered community of research staff who make informed career choices, and work together to contribute to their discipline and the University community.
- 3.12. We have established an <u>Academic Career Academy</u> with around 15 attendees supported per year; 12 individuals from the first two cohorts have secured lecturer or senior lecturer positions. In October 2017, we introduced a promotion process from Research Associate to Research Fellow. Our programme, <u>Careers</u> <u>beyond Academia</u> supports research staff to advance their careers in diverse ways.
- 3.13. To recognize the important contribution of research staff we have introduced the annual <u>Peter Troughton Research Staff Prize</u> for the most outstanding performance by a member of research staff.

Early Career Researchers

- 3.14. The 21% of Early Career Researchers in our REF submission have played a major role in our research success over the period under review. Our welcoming culture and our supportive policies have enabled us to attract a generation of dynamic researchers who have fully matched the institutional support offered with their own energy, driving institutional change.
- 3.15. The University of Bath Prize Fellowship Scheme enabled outstanding early career scholars to make rapid progress in establishing their careers. Since 2014 we have appointed 39 Prize Fellows in several cohorts, in strategically identified growth areas, who have benefitted from two years dedicated research time and development activities before being assessed for their suitability to begin probation as a lecturer, as part of a university-wide scheme of mentorship, peer exchange and development.

3.16. The GW4 Crucible Programme provides hands-on training and mentoring to develop collaborative research leaders of the future. Introduced in 2016, the programme has trained around 100 early career researchers across the alliance (22 from Bath).

Research Students

- 3.17. In 2017 we created a <u>Doctoral College</u> to bring together institution-wide support, training, development and administration for our diverse doctoral population and actively encourages cross-disciplinary and cross-institutional collaboration to further enrich the student experience. The Doctoral College has promoted important EDI campaigns such as <u>#NeverOK</u>, representing the University's commitment to creating a community where harassment and assault are never tolerated, and where all students, staff and visitors feel safe and valued. Students with disabilities are supported by the Doctoral College and the well-being services on campus.
- 3.18. The quality of our Doctoral training provision is evidenced by the University's leadership of and partnership in a significant number of <u>DTEs</u>. During the REF period the University has led six externally funded DTEs and has been a partner in 15 others spanning the Research Councils and our discipline base, frequently alongside our partners in the GW4 collaboration. Their inter-disciplinary and outward-looking nature together with the strength of industry engagement echo and support the University's research strategy.
- 3.19. The University actively supports the internationalisation of doctoral training, encouraging international mobility for both UK and non-UK students. Working closely with the Doctoral College and DTEs, the International Relations Office has established joint PhD programmes with international partner institutions and funding opportunities for short-term doctoral mobility. The University has recently committed to recruiting up to 30% international students to UKRI studentships at no additional cost to the student.

Equality and diversity

- 3.20. We value, promote and celebrate inclusion, challenging discrimination and putting equality, diversity and belonging at the heart of everything we do. We aim to be an inclusive university, where difference is celebrated, respected and encouraged. We truly believe that diversity of experience, perspectives, and backgrounds will lead to a better environment for our employees and students.
- 3.21. We have made a positive commitment towards gender equality and intersectionality receiving a Bronze Athena SWAN award, and we are actively working towards a Silver award. We are members of the Aurora network and our academics and professional services staff have participated since its launch. In 2019, the University established a Gender Pay Gap Working Group, jointly with the Trades Unions, to investigate gender pay gaps and to identify systemic causes that might be addressed. As a result, an action plan, which focuses on recruitment and progression, was developed and is being implemented.

- 3.22. Our workforce is drawn from 68 different nationalities and our Postgraduates represent 130 nationalities. Recognising the importance of tackling racism, in 2020 we established a Race Equality Taskforce chaired by a senior academic.
- 3.23. We are a family-friendly University, with an agile workforce, and open to flexible working arrangements. We're proud to be a disability confident employer. Our Equality and Diversity network oversee self-organised staff groups focussing on specific aspects of equality and diversity, including groups for carers, LGBT+ and disabled staff.
- 3.24. We have set ourselves some challenging equality objectives for the period 2019 to 2021 to build upon this strong platform. These include:
 - increasing the proportion of women in senior roles and taking positive action to address gender imbalances and the gender pay gap;
 - improving the recruitment of staff and students from under-represented groups in order to better reflect the society in which we operate;
 - creating and maintaining a living and working environment that supports the health and wellbeing of all staff and students;
 - fostering a culture of inclusion and belonging through a programme of raising awareness and training; creating a supportive environment for our LGBT+ community
- 3.25. With funding from the EPSRC Inclusion Matters scheme we are conducting a programme of research into the experiences and attitudes of early career academics and their potential future employers, leading to evidence-based policy change recommendations.

Construction of REF submission

3.26. Our REF submission has been constructed in line with our institutional <u>Code of</u> <u>Practice</u>. The Code set out how our selection procedures would be consistent, transparent, accountable, and conducted in an inclusive manner, in accordance with our institutional values and existing policies. The Code was promoted internally via email, the University homepage, digital signage and staff twitter account. Open staff meetings were held both as part of the consultation exercise on the Code and to discuss the code once it was finalised. All staff involved in REF decision making processes received REF specific ED&I training.

4. Income, infrastructure and facilities

- 4.1. Growth in research income is a key element of the University strategy for 2016-21, with research representing 13% of the University's total income. Research Councils continue to be our largest source of research income (we are a Tier 1 Strategic Partner for EPSRC). Nevertheless, we have a broad portfolio of funders with awards secured from over 450 different funders during the REF period. Our portfolio of funded research has grown from £119 million in 2014 to £155 million in 2020.
- 4.2. RIS supports all aspects of securing, managing and optimising the outcomes of research funding, taking a whole lifecycle approach to research funding. The department has dedicated teams to support academic and research staff in all aspects from developing a funding idea and identifying appropriate funding opportunities, through bid development and submission, project management and financial oversight, research commercialisation support to impact evaluation and evidencing.
- 4.3. Steps are taken at all points in the research lifecycle to address ED&I issues in our research support mechanisms. Our regular funding bulletin includes a section to highlight funding opportunities to support, for example, part-time staff and staff returning after career breaks. We have taken steps to ensure that our internal funding allocation mechanisms take an approach to promote ED&I. This includes ensuring diversity of internal assessment panels, formalisation of assessment processes and the publication of assessment criteria, and on occasion the use of anonymised assessment.
- 4.4. The University has professionally supported Core Research Facilities (CRFs), ensuring maximum up-time and accessibility to our research equipment. Research Technical Professionals working alongside our Technicians are an active, recognised and valued part of our research community. The major CRFs include:
 - Material and Chemical Characterisation Facility (MC2);
 - Advanced Research Computing (ARC)
 - David Bullett Nanofabrication Facility;
- 4.5. The Institute for Advanced Automotive Propulsion Systems is a major offcampus new-build facility currently approaching completion. It will offer nationally distinctive capabilities and serve as a meeting place for the automotive industry with innovative academic researchers to build the vision for the future of automotive.
- 4.6. We recognise that baseline investment in infrastructure is critical to underpin the research portfolio, and this is central to the University's strategic planning. Our Major Research Equipment Fund, an annual ring-fenced fund, is complemented by Faculty-level research infrastructure budgets. The University supports bids to the Research Councils with (additional) cash contributions to major investments.

- 4.7. Key to the sustainability of these research facilities is our commitment to technical staff. The University has been a signatory to the Technician's Commitment since 2018 and has developed a two year <u>action plan</u> outlining the actions we will take the address the four key areas of the Commitment.
- 4.8. Our facilities are a means to engage with industry partners and we actively promote them. Over the REF period this has generated £14m of income.
- 4.9. We work with our GW4 partners on more ambitious research infrastructure and equipment projects at a regional level. Examples include the shared GW4 facility for cryo-microscopy opened in 2017 at the University of Bristol, and a new Tier 2 high performance computing (HPC) service ("Isambard") joint with the Met Office and Cray Inc.