

UNIVERSITY OF EXETER

RESEARCH AND IMPACT STRATEGY 2015-20

EXECUTIVE SUMMARY

Exeter is the UK's fastest growing and fastest rising research university and REF 2014 confirmed our status as a leading research intensive university with one of the three largest increases in QR funding. Set against this success, and completion of all of the goals set in the Research and Knowledge Transfer Strategy 2010-15, we are setting our sights on taking Exeter to new heights over the next five years.

Fundamental to our future success as a global seat of higher education, is the need to increase our research power. Increasing research power is, indeed, the overriding strategic aim of the University of Exeter, because our international aspirations as a Global top 100 University are dependent on achieving a global reputation for research excellence, which can only come with scale. We have therefore developed the Research and Impact Strategy 2015-20 with the following major aims.

- 1. The Research and Impact Strategy 2015-20 aims to increase research volume and quality of research across our disciplines, with a particular emphasis on increasing the size and quality of our science and medicine base, whilst ensuring that we enhance the quality of our humanities and social sciences still further.**
- 2. We will provide an exceptional environment for our academic staff, developing exceptional resources for humanities and social sciences scholarship, and ensuring provision of key platform technologies for our scientists.**
- 3. We will launch the *Exeter Global Vision 2050 Project* to enhance our interdisciplinary research across the broad area of sustainability, setting an exciting context within which new major research initiatives will be formed and new ideas developed.**
- 4. We will establish a *University of Exeter Institute for Advanced Study* to create and nurture the ideas that will allow our academics to emerge as key opinionformers in their fields and to attract the finest minds to come to Exeter for study visits, sabbaticals, collaborations, and innovative new research.**
- 5. We will prepare for REF2020 (or its successor) by enhancing our presence in Main Panels A+B, and by ensuring we develop sufficient impact case studies for a 100% return of 1000 FTE staff.**
- 6. We will strengthen significantly our approach to impact and partnership, by establishing a new Innovation, Impact and Business Engagement Directorate and developing a new infrastructure to support strategic external partnerships.**

Meeting these ambitions will require significant investment in research infrastructure and academic staff recruitment, which we currently estimate at £8m one-off investment and £4.6m recurrent. We recognise the financial context in which the University must operate and the likelihood of constraints on the UK research budget, in addition to the need for high margin activity to provide the financial headroom for investment. Notwithstanding that

context, Exeter must expand its research base if it is to become a global top 100 institution. This is a sovereign aim of the University and we need to remove obstacles to this ambition and invest at an appropriate level to realise the potential of Exeter to become a major international research university.

This strategy has been developed by the DVC for Research and Impact, supported by the Associate Deans for Research working through the Research and Impact Management Group, informed by significant consultation involving 6 institutional consultation sessions and extensive online feedback from the wider academy at Exeter.

Council is asked to **ENDORSE** the vision of the strategy set out in this paper, and to note the indicative costings. A full implementation plan accompanies this strategy, which Council members are welcome to review should they wish to. Copies can be obtained from e.m.james@exeter.ac.uk. Once Council has agreed the strategic vision, the costings will be developed further and progressed through the planning and budgeting process with the aim of finalizing investment for report to Council later in the year.

HOW WILL SUCCESS BE MEASURED?

The following indicators of success have been formulated and should be measured by Council to measure the success of the Strategy in Academic Year 2020/21.

RESEARCH ENVIRONMENT

- We will aim to submit 1000 staff to REF2020, requiring all to have 3* and 4* outputs and/or impact case studies of this quality.
- We aim to be in the top 15 for research power in the next REF.
- We intend that all REF UoAs will be in the top 20 for their overall 4* profile and aim for at least 5 of our UoAs to be rated in the top 5 in the UK for REF (in respect of overall 4* profiles and/ or GPA x intensity ie demonstrably world leading).
- We will double the number of members of national academies among our academic staff (FBA, FRS).
- 40% of our overall combined output will be rated at 4* level.
- We will aim to increase the quality of research students measured by the proportion holding prestigious scholarships

GLOBAL RESEARCH REPUTATION

- By the end of 2020 Exeter will be recognised as a leading world university for research consistently ranked within the top 15 UK HEIs within the global league tables
- AND rated in the top 50 globally in at least 5 research areas – measured by Leiden, QS and THE tables.
- We will increase citations and proportion of highly cited research by 20%
- We will maintain 10% annual growth in research income throughout the period.

IMPACT AND PARTNERSHIP

- 150 high quality impact case studies will be developed and evaluated.
- Overall Business and Community Interaction value to increase by 20% per FTE to mid-Russell group level.

- 100% increase in research income from industry (UK and international). □ IP exploitation and consultancy income to increase to c£2m pa
- Place-based innovation c£5m pa (contingent on match funding).

SUSTAINABLE BUSINESS MODEL

- Cost recovery rates for research will match upper quartile Russell Group performance.
- Cost recovery rates for PGRs to match Russell Group median.
- Annual return on investment from investments made (ie leverage) 4:1
- Research volume will be matched sustainably by high margin revenue generation.

RESEARCH AND IMPACT STRATEGY 2015-20 - OUR VISION

A LEADING WORLD UNIVERSITY FOR RESEARCH

Exeter is at a point in its history when it has a realistic prospect of becoming a global top 100 university. However, to become universally recognised in this elite group of higher education institutions, and to maintain such a position, is a very considerable challenge. It requires Exeter to grow its research base, especially in the sciences (STEM), because these subjects are the most universally studied internationally and they generate the most research income and citation impact. It is not possible to be a top 100 full service university, without worldleading presence in science. However, a key strength of Exeter is that it has superb humanities and social science (HaSS) research, ranked consistently within the top 100 internationally, with many leading international scholars. We therefore also need to build on this success, in terms of research quality, resources and environment, so that these disciplines progress and flourish. World class HaSS research is necessary, but not sufficient, for a top 100 university. We also need to have critical mass and excellence in STEM and Medicine.

Exeter, however, has another great strength, which is an extraordinary capacity to carry out interdisciplinary research. This is due to our systematic investment, over the last 10 years, in interdisciplinary research themes, through our Science Strategy (2008) and our Humanities and Social Sciences (HaSS) strategy (2011). These strategies identified large interdisciplinary research questions addressing global challenges, which have energized our staff and attracted leading scholars at all levels to come to Exeter. This has been pivotal to our successes in building research income and succeeding in REF2014. We have also organised the university into large multi-disciplinary Colleges, removing barriers to collaboration and providing financial incentives to encourage collaboration, we need to capitalise on this interdisciplinary ethos, which has served us so well.

Interdisciplinary research is, indeed, the future of academic enquiry and Exeter can become a leader in this mode of research. Our creative co-location of staff, flat organisational structures, fleet-of-foot professional services, and our simple financial structures, are all designed to facilitate this modern form of academic research. It is clear, however, that we have considerable capability gaps and areas of sub-critical activity. Some research areas are prime for expansion and investment, while we must withdraw from other sub-disciplines and specific topics where we lack cutting-edge expertise. These decisions will be actively driven through annual Research Monitoring and the PRG process, with the full support and engagement of PVCs. There is, however, also a need to incentivise investments in key interdisciplinary areas from the centre of the university and

the *Research and Impact Strategy* will do this. We also need to improve the academic environment at Exeter so that it matches those found within the very best global universities.

Despite a more threatening external environment for research we believe the next 5 years offers amazing opportunities for Exeter. The *Research and Impact Strategy* has the capacity to Exeter towards being one of the very best places to undertake research and higher education anywhere in the world.

The *Research and Impact Strategy* has 4 pillars, which are described below:

1. **Building A World Class Research Environment**
2. **Growing A Global Research Reputation for Exeter**
3. **Driving Impact and Partnership**
4. **Delivering a sustainable business model for Research**

1. Building A World Class Research Environment:

We will cultivate a world-class environment for research that makes astounding things happen and facilitates success for staff and students. Our research environment will be tailored for our particular staff profile, which has more early career researchers (ECRs) and fewer mid-career academic staff than most Russell Group universities and will create opportunities for our most accomplished research teams to excel in the global research competition.

- a) **Infrastructure, Support and Tools for Cutting-Edge Research** - The mark of a leading-edge university is its ability to provide state-of-the-art infrastructure for academic research with world-class specialist facilities that enable scholars to perform research at the highest level. In HaSS disciplines, this means excellent library and digital resources to facilitate world-leading scholarship.
 - i. **The University Library** will receive investment to create a 21st century research resource, closely engaged with the research interests of the academic community. It will provide access to necessary journals and datasets from around the world and will also drive new ways of publishing research and providing the means by which all of our staff can publish in open access formats, consistent with HEFCE, RCUK and EU requirements. The Library will acquire and host specialist **research collections and digital archives** designed to meet the needs of HaSS researchers. Exeter academics will thus be able to pursue their research in Exeter we will be able to attract World leading scholars.
 - ii. **Research Funding Support** Through the Exeter Transformation process, we will transform research support under the direction of the DVC Research and Impact to provide a single coherent service with clear accountability and line of sight to academic priorities. This will be built on focused and expert local support for grant preparation and specialist services to manage increasingly complex funding schemes and a wide range of research sponsors.
 - iii. **Research Systems** - We recognise that Exeter has under-invested historically in Research Systems to facilitate grant applications, post-award grant management and open access publication. These systems are vital because they underpin our research effort and also provide key performance management information. We will invest in new systems that operate within the context of the Exeter Future

Finance Programme, which are necessary to create the best research environment.

- b) **The Exeter Doctoral College** - The newly established *University of Exeter Doctoral College* will create a vibrant and creative research environment for post-graduate research students and postdoctoral fellows. Through the Doctoral College we will engender a culture of research excellence, collaboration, interdisciplinary enquiry, and impact. We aim to attract the finest young minds to study in Exeter as PhD students. To do this, we will pump-prime an international scholarship Programme aimed at attracting the very best PhD students from anywhere in the world to come to Exeter.
- c) **The Exeter Institute for Advanced Study** - Leading universities are characterised by providing Centres for interdisciplinary discourse and ideas generation that are outside of conventional Departments or Colleges. These also provide a magnet for leading international visitors to plan extended study visits to the university. We aim to establish an *Institute for Advanced Study*. This will be a residential, research centre, hosting a dynamic community of researchers composed of both external visitors and internal research fellows, who will spend periods of between 1 semester and 2 years in the Institute. Working through a series of rolling, cross-college themes, with regular presentations and workshops and awarding a series of prestigious fellowships, the Institute will build the international reputation of Exeter as a top seat of learning. We will invest in core staff for the Institute, raise funding for the building through philanthropy, and pump-prime a series of international fellowships that extend across the REF2020 census period. This will build REF2020 volume and quality, build 4th Age of Research activity and allow us to attract members of prestigious national academies and award-holders to Exeter.

2. Growing A Global Research Reputation

To build our global research reputation we require selective investment to build further capacity in STEM and Medicine. Critical mass is important in these subjects, to drive research income growth, citations and QR volume. We need to build our presence in the existing REF Main Panel A and B subjects by REF2020 which will reap dividends through both parts of the dual support mechanism for research funding.

- a) **Building Critical Mass in STEM/M** - We aim to recruit a further cadre of high performing academic staff to meet our aspiration of submitting 1000 staff to REF2020. However, it is important that the hiring mechanism is driven in an interdisciplinary manner from the centre of the University, to ensure we develop the right blend of capabilities to tackle grand challenge research questions at scale, and provide complementary skills to those already present in Exeter. We also need to ensure that we build expertise in developing industrial partnerships, leading international research consortia and building interdisciplinary teams. The *Research and Impact Strategy* will invest in new academic exceptional talent on a competitive basis, following our successful formula in the Science and HaSS strategies. We will ensure that hiring coincides with building towards the REF2020 census date.
- b) **The Exeter Global Vision 2050 Project** - Exeter is becoming well known as a leading centre for research across the theme of Climate Change and Sustainability. This has

been recognised by our recruitment of a Royal Society Research Professor and FRS, among leading academics that have joined Exeter from Princeton, Los Alamos, and other leading international centres in both the public and private sectors. Indeed, we now have more than 200 academics in the Sustainability area and Exeter has more coauthors of the IPCC Intergovernmental Report on Climate Change than any other city on the planet. We must capitalise on this international presence and become synonymous as an institution with environmental research. The *Exeter Global Vision 2050 Project* will explore the major questions facing society over the next 40 years. The aim will be to combine education, research, engagement and action to help societies understand and find ways of ensuring a flourishing future for the planet. We will invest in this overarching research project by hosting symposia to frame research questions, studentship and fellowship schemes to attract young researchers to Exeter, and to provide an engaging environment for our leading researchers to build long-term careers in the university. *Exeter Global Vision 2050* will put Exeter on the map as a university which challenges its academic staff to address the most pressing questions facing humankind.

- c) **Rigorous Performance Management of Research** - As well as selective investment, we need to ensure that a higher proportion of our academic staff meet the quality threshold for submission to REF2020, either with published outputs or impact case studies. This will require a re-doubling of effort through the annual Research Monitoring process to identify mentoring and training needs of ECR and mid-career staff, encouraging collaboration and joint publication, but also identifying under-performance as early as possible and using rigorous processes to ensure that performance targets are met by all of our staff, either through publication or impact. We will also rigorously review the research portfolios of all Colleges to identify sub-disciplines and specific areas where we lack sufficient research quality and scale to be competitive. We will withdraw from such areas, providing further headroom to expand areas where we can be world-leading.

3. Driving Impact and Partnership:

We will develop a strong focus on developing societal and economic impact from our research. We will conduct more engaged research with external partners, both public and private sector. To facilitate this expansion in engaged research, we will train research students and ECRs, including a renewed focus on entrepreneurship and enterprise.

- a) **Creating Impact and a Strongly Engaged Research Culture** - REF2014 provided the first national competitive evaluation of the economic and societal impact of research in HEIs. As a consequence of our rapid expansion between 2008 and 2014, we had less time than competitor institutions to build long-term case studies of the impact of our research. Although we had world-leading impact in all subject areas, we performed less well than any Russell Group university in Impact at REF2014. We have also under-invested in the support of impact generation within the University and must redress this deficiency in our current research support. In the *Research and Impact Strategy*, we build a culture in which impact, innovation, engaged research and partnership with business, is valued and supported. We will establish an Innovation, *Impact and Business Engagement Directorate* (IIB), with new specialist support provided in industrial engagement, policymaker engagement, and enterprise. This will be supplemented by establishment of a venture fund for investment in commercial exploitation of research (through external partnership with *Arthurian Life Sciences*), strong links to the SET Squared innovation and business

incubator, of which we are a member, and a more rigorous approach to Intellectual Property (IP) Management.

- b) **Engaging with Strategic Partners** - We will pro-actively identify and support strategic opportunities for collaboration with major partners across the globe, country and region to deliver research of value and impact. We will support academic contacts directly, but also provide introductions, facilitate initial meetings, and support businessassistants to build industrial interactions and engagement. This will be carried out systematically on a sector-by-sector basis mapping against current expertise and academic hires.
- c) **Pro-active co-creation with business** - We will develop a small number of deep, strategic, corporate partnerships with business. We will co-invest in such relationships using *open innovation* funding provided by HEIF and RCUK Impact Accelerator funds to maximise opportunities for our academic staff to establish and grow long-term research programmes with industry. These will range from the creative industries engaging with our HaSS specialists to high-tech, life sciences, biomedical, and engineering industries engaging with the Exeter STEM community.
- d) **Innovation and entrepreneurship** - We will foster innovation and entrepreneurship and provide a supportive environment for both academics and students to create and grow new businesses. Consistent with the principles of the Dowling and Witty Reviews, our aim will be to generate long term value for our communities, leading to long- term investment and creation of new industries and the associated skills and jobs.
- e) **Place-Based Innovation** - We will shape a significant role for the University in placebased research and innovation, utilising the strengths of the region and building on the GW4 research alliance and the SETsquared partnership. *Innovation Exeter* and the Exeter Science Park will become a key framework for regional innovation and a platform from which to engage in entrepreneurial activity on a national and global basis. We will deploy IIB resource, specifically to ensure delivery of *Innovation Exeter*, in partnership with the regional LEPs. We will form part of the BIS Science and Innovation

Audit with GW4 partners and other key research centres across the region, highlighting key scientific strengths and associated industry-pull, that could be targets for large-scale BIS investment. We will develop the Exeter Science Park and the Global Environmental

Futures campus, which will provide high level strategic link with the Met Office and its Hadley Centre, the new BIS-funded supercomputer and associated commercial enterprises. This activity will be developed within the context of the *Global Vision 2050 Project*. We will also support Local Enterprise Partnerships in the Heart of the South West and Cornwall and the Isles of Scilly to develop their productivity and skills agendas, and use the availability of European Structural and Investment Funds to build critical mass in those research areas aligned to the Smart Specialisation themes of both LEPs.

4. Delivering a Sustainable Business Model for Research

It is crucial that research makes a stronger financial contribution to the university and that we do all that is possible to cover research expenditure from external sources at the full economic cost. We will therefore operate a sustainable business model that

optimises the financial return on past investment, provides appropriate resources for future investment, and ensures that these generate an appropriate level of return.

- a) **Diversified income streams** – We will seek new sources of research funding that enable us to cover more of our underlying costs, particularly from business and other users. We will ensure that all industrial contracts cover the full economic cost of research. We will also create financial and other incentives to encourage academic staff to take an entrepreneurial approach to building partnerships and projects supported by a more entrepreneurial Professional Services. We will make available funding through the *Impact Accelerator* and *Open Innovation Fund* to facilitate partnerships. We will use GW4 Initiator Funding to position research groups to optimise alternative funding sources. We will work with GED to ensure we optimise relationships with Charities and Trusts. We will ensure that the full earnings of these grants and their associated Charities QR are recognised through PRG.
- b) **Leverage** - We will ensure that our own funds and those of our partners work harder by achieving significant leverage – either in the form of additional income generated via external sources or via philanthropy. Working with the Doctoral College, we will use the *Palmer Legacy* model to lever gifts against RCUK DTP funding to optimise PhD studentships. We will work with GED to establish a longer term endowment fund, which we believe is an essential pre-requisite for success in the Global 100.
- c) **Improved cost recovery** – We will ensure that our research activity is optimally costed, by establishing best practice through the PST process and dissemination across the institution. Research Accounting will operate a single set of procedures for optimisation of research costings. We will ensure that TAS/TRAC returns are accurate representations of staff time to ensure our costings are brought closer to the Russell Group Median. We will use the SWARM work-load allocation model to achieve greater consistency and accuracy of the costs of research.

SUMMARY

Exeter has a once in a lifetime opportunity to become a global top 100 university. It has achieved several necessary pre-requisites, including a strong national profile built upon an excellent educational offering, strong and growing citations, significant research income growth, an impressive REF2014 outcome, and increasing internationalisation in its student and staff base. To progress further, the university must improve its research profile very significantly. Its HaSS community is appropriately sized, but must achieve a higher proportion of world-leading research. To do this the resources for humanities scholarship must improve. The STEM/M base at Exeter, however, is too small and must grow significantly to achieve global presence, at scale, in these subjects, which drive both income and citations. Coupled with this is a critical weakness in industrial income generation and impact, which must be urgently addressed. Interdisciplinary and distinctiveness, however, are the key strengths that we can deploy to build the STEM/M base and strengthen the whole university. This *Research and Impact Strategy* sets out to drive the university to the global top 100. It sets ambitious goals and will provide a step-change in the volume and quality of scholarship at Exeter. Above all, it offers *ideas*, the true currency of universities. I commend it to Council for consideration.

Professor Nicholas J Talbot, DVC, Research and Impact
Professor Mark Goodwin, DVC Innovation and External Engagement