“Only by ensuring that our research, innovation and knowledge exchange activities and structures work to the benefit of each other can we maximise capacity, impact and effectiveness.”
Introduction

This Research, Innovation and Knowledge Exchange strategy focuses on the strategic alignment and integration of our activities in order to foster world leading, impactful research and knowledge exchange across our University.

Only by ensuring that our research, innovation and knowledge exchange activities and structures work to the benefit of each other can we maximise capacity, impact and effectiveness. The strategy addresses a series of recent external and internal developments, including the Nurse Review and the Green Paper *Fulfilling our Potential*, all of which further support the need to more closely integrate research, innovation and knowledge exchange.

In particular the strategy is aimed at ensuring that we are best positioned to capitalise upon the increasing opportunities for large-scale, multi-disciplinary, research-led activity addressing key societal concerns in areas in which we have distinctive capacity and expertise, including Medical Technologies, Assisted Living, Smart Cities and Blue Lights.

By the end of this planning period (December 2017), this strategy aims to ensure that we have:

- World leading research outcomes in every Department.
- An excellent research environment in which our PGR students thrive.
- Substantially increased levels of research and knowledge exchange income.
- An international reputation for our work across a number of key sectors, including Medical Technologies, Assisted Living, Smart Cities and Blue Lights.
1. Research

Our aim:

To produce world leading research outputs across all of our disciplines, laying the foundation for a successful submission to the next Research Excellence Framework (REF), while building research capacity across our University and supporting the development of early career researchers.

Strategies

We will:

1.1 Focus our institutional support (including sabbaticals, research enhancement fund, research internship scheme) on a) those staff most able to produce 3* and 4* outputs in time for the next REF, and b) early career researchers, including those currently completing doctorates.

1.2 Ensure our Annual Workload Balancing Model (AWBM) is sufficiently flexible in design and implementation to allocate appropriate time to a) those most able to produce 3* and 4* outputs in time for the next REF and b) early career researchers.

1.3 Develop a new system of annual Individual Research Reports to complement the appraisal process and support REF preparation and research management within Faculties and Departments (by July 2016).

1.4 Ensure that all academic staff are offered appropriate research mentors, and that all academic staff are recorded within their Faculties as belonging to at least one research strand or cluster and, where appropriate, recorded as potential members of one or more Units of Assessment (by July 2016).

1.5 Ensure that all academic appointments include as an appropriately weighted criterion the potential to contribute positively to future REF submissions.

1.6 Ensure that Faculties, Departments and Research Institutes use their devoted QR funding effectively and in line with the aims of this Strategy, through annual planning and reporting against a set of KPIs to include: outputs published, bids submitted, income generated, PGR student recruitment and completion, KE and public engagement activities, and progress towards impact case studies (by July 2016).

1.7 Review our Research Investment Fund strategy in order to ensure it is targeted effectively at the aims of this Strategic Plan (by June 2016).

1.8 Conduct a light-touch review of all Research Institutes early in academic year 2016-17, in order to ensure a) their alignment with REF strategies at UoA level and b) their cost effectiveness and sustainability, and c) to determine levels of internal financial support for 2017-2020, thereby offering a stable planning environment.

1.9 Conduct a light-touch review of all other research Centres and Units late in 2016-17, in order to ensure a) their alignment with REF strategies at UoA level and b) their cost effectiveness and sustainability, and c) to achieve a distribution of research Centres and Units that effectively supports and maximises the external visibility of our research.

1.10 Offer a new series of research funding seminars, workshops and other events through the Research Funding Observatory to increase the success rate and value of our external research funding bids (from January 2016).

1.11 Refocus the work of Research, Development and Commercial Services (RDCS) around supporting a) external income generation to grow research and innovation capacity, b) research student success and c) preparation for the next REF, and rename as Research, Innovation and Development Office (RIDO) upon appointment of the Director (by July 2016).

1.12 Create an online ‘Experts’ Directory’ to raise the internal and external visibility of our researchers’ expertise, and to foster collaborative and interdisciplinary research activity (by July 2016).

1.13 Enhance our research management capacity and meet the Open Access requirements of the REF by upgrading our online repository (to E-Print), investing in Symplectic across all Faculties, and purchasing a bid management software system (probably Unit4) (by July 2016).
1.14 Offer workshops and CPD for all staff around maximising and evidencing impact, encourage all researchers to develop and articulate personal or team-based impact strategies, and support researchers in collecting evidence of impact through, for example, QR funding and the undergraduate research internship scheme.

1.15 Identify a full set of potential impact case studies for each potential UoA for the next REF, including ‘spares’, and establish a strategy for supporting and monitoring their development, including through an ongoing consultancy arrangement with RAND Europe (by July 2016).

1.16 Hold annual REF awaydays (October), REF audits (September) and other REF planning activities in line with the internal REF timetable, reporting regularly on REF progress to Research Committee and CMT.

1.17 Ensure that UoA convenors receive appropriate Departmental and Faculty support, including agreed time allocations through the AWBM.

1.18 Appoint for each potential UoA at least one external advisor (by March 2016) and engage them in the annual REF audits working to a set of agreed institutional guidelines.
2. Research Students and Research Environment

Our aim:

To provide a high quality research environment for all our staff and postgraduate research students (PGR), ensuring our PGR students complete their degrees in a timely fashion while developing the key skills required to further their careers.

Strategies

We will:

2.1 Establish a Doctoral School to provide corporate oversight of, and direction to our PGR student activity, from recruitment to examination (by January 2016).

2.2 Build a cross-faculty programme of seminars and conferences, ensuring that each research student and member of staff has access to regular, high quality discussion of research topics in cognate areas and opportunities to present and receive feedback on their research, and monitor attendance.

2.3 Ensure that criteria and approval processes for PGR students’ progression decisions (including Approval of Research Proposals, Annual Monitoring and Confirmation of Candidature) are robust and fit for purpose, thus better managing each student’s progression towards timely completion (by September 2016).

2.4 Develop a high quality CPD programme for supervisors with required minimum levels of engagement, in order to ensure effective supervision across all areas, and monitor supervisors’ success in terms of student progression (by September 2016).

2.5 Ensure that the allocation of Doctoral students to supervisors is transparent and equitable, and that effective steps are taken in all Departments to grow supervisory capacity by offering supervision opportunities to all who are appropriately qualified (by March 2016).

2.6 Review and update our Researcher Development Programme, and enhance our support for PGR students’ broader career development (by July 2016).

2.7 Review AWBM allocations for PGR supervisors (by March 2016).

2.8 Enhance the marketing of Doctoral courses placing an emphasis upon clear areas of faculty expertise and activity in order to encourage closer alignment of potential students to areas of strength (by July 2016).

2.9 Expand and enhance our pre-sessional support for potential PGR students, including language support for international students (by July 2016).

2.10 Review our PGR admissions processes to ensure they are fit for purpose (by March 2016).

2.11 Implement the outcomes of the review of our ethical approval processes to ensure they are proportionate and fit for purpose (by July 2016).

2.12 Review our PGR student regulations to ensure they are fit for purpose and in line with sector best practice (by April 2016).

2.13 Review the provision of work space for PGR students across all Faculties, with a view to providing (by September 2016 if possible) a dedicated work space for all full-time campus-based PGR students.

2.14 Develop an Early Career Researcher charter, setting out the support available to early career researchers to ensure they are able to develop their research careers (by March 2016).

2.15 Enhance the development opportunities and support environment available to all researchers, meeting the expectations of the Concordat to Support the Career Development of Researchers, and retaining our HR Excellence in Research Award at its review in 2017.

2.16 Further develop access to relevant research databases, journals and other library materials as appropriate.

2.17 Enhance the visibility of our research internally and externally through increased web content, our research blog, and publications including Research Highlights and Innovation Highlights; and ensure that each Department and Research Institute promotes its work effectively (by September 2016).

2.18 Ensure that every Department has at least one Visiting Professor contributing to its research environment and research profile and fostering external links (by September 2016).
3. Innovation and Knowledge Exchange

Our aim:

To maximise the economic, cultural and social impact of our research expertise, providing near-market solutions to a set of strategically identified priorities across the private and public sectors, and generating income in order to drive sustained growth in capacity.

Strategies

We will:

3.1 Develop and implement an overarching management and support structure for bid development, from horizon scanning through to post-award support, engaging both Faculties and support services (by July 2016).

3.2 Identify and promote innovation, knowledge exchange and commercialisation opportunities to our researchers, helping them to articulate and promote their research to external stakeholders and potential end-users in the private and public sectors.

3.3 Bring together multi-disciplinary teams to tackle large scale social challenges, focusing our investment and support around key sectors including Medical Technologies, Assisted Living, Smart Cities and Blue Lights, each led by an identified ‘sector lead’ within Faculties working with dedicated professional support from within RIDO.

3.4 Grow the engagement between research active staff and the MedBIC, MedTech campus and the Smart Living Accelerator, and ensure closer strategic alignment between these activities and our Faculties.

3.5 Further develop the collaboration between Faculties, support services and Ixion to secure increased funding from UK and EU sources, in particular Horizon 2020 and Innovate UK.

3.6 Support SMEs to access funding, expertise, facilities and other commercial partners, in order to drive innovation and economic growth, and to generate opportunities for us to apply our academic expertise and research capabilities.

3.7 Provide physical innovation space for early stage companies in our MedBIC, fostering partnerships between companies and our researchers including through our Proof of Concept scheme, and seek to secure funding and approval for a MedBIC extension.

3.8 Review our HEIF strategy in order to ensure it is targeted effectively at the aims of this Strategic Plan (by June 2016).

3.9 Monitor and report annually on the performance of all of our externally funded innovation and knowledge exchange projects, particularly in terms of finance (contribution) and capacity building (e.g. impact generation).

3.10 Establish an Innovation and Knowledge Exchange subcommittee, and a Sector Strategy Delivery Group to oversee and set the strategic direction for our innovation and knowledge exchange activities (by January 2016).
## Milestones

<table>
<thead>
<tr>
<th>Milestone</th>
<th>Baseline</th>
<th>Target 2016</th>
<th>Target 2017</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. The proportion of academic staff engaged in research (CP 6.5)</td>
<td>60%</td>
<td>80%</td>
<td>100%</td>
</tr>
<tr>
<td>2. The percentage of eligible staff submitted to annual REF audits (CP 6.6)</td>
<td>35%</td>
<td>45%</td>
<td>55%</td>
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<tr>
<td>3. The proportion of UoAs identifying 4* outputs in the annual REF audits</td>
<td>75%</td>
<td>80%</td>
<td>100%</td>
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<td>4. Total number of doctoral students (CP 5.3)</td>
<td>650</td>
<td>700</td>
<td>800</td>
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<tr>
<td>5. Percentage of PhD students who complete within 4 years (full time) or 7 years (part-time) (CP 5.6)</td>
<td>est 18%</td>
<td>55%</td>
<td>65%</td>
</tr>
<tr>
<td>6. Percentage of PGR students who are satisfied overall with the experience of their research degree programme (CP 1.7)</td>
<td>86%</td>
<td>n/a</td>
<td>90%</td>
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<tr>
<td>7. Number of Doctorates awarded (CP 5.8)</td>
<td>50</td>
<td>60</td>
<td>80</td>
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<tr>
<td>8. Number of Professional Doctorate students (CP 5.7)</td>
<td>150</td>
<td>200</td>
<td>250</td>
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<tr>
<td>9. Number of disciplines for which PhDs awarded (CP 5.9)</td>
<td>10</td>
<td>12</td>
<td>15</td>
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<tr>
<td>10. Overall proportion of academic staff with doctorates (CP 9.3)</td>
<td>60%</td>
<td>62%</td>
<td>64%</td>
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<tr>
<td>11. Number of students on our undergraduate research internships scheme (CP 5.2)</td>
<td>70</td>
<td>220</td>
<td>300</td>
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<tr>
<td>12. Number of bids for external research funding (CP 6.1)</td>
<td>250</td>
<td>300</td>
<td>350</td>
</tr>
<tr>
<td>13. Percentage of bids which are successful (CP 6.2)</td>
<td>26%</td>
<td>28%</td>
<td>30%</td>
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<tr>
<td>14. Average value of successful bids (CP 6.3)</td>
<td>£50k</td>
<td>£55k</td>
<td>£60k</td>
</tr>
<tr>
<td>15. Contract research activity (CP 6.4)</td>
<td>£0.5m</td>
<td>£1m</td>
<td>£1.5m</td>
</tr>
<tr>
<td>16. Research income from transnational, national and regional European Structural and Investment Funds (CP 11.3)</td>
<td>£1.2m</td>
<td>£1.4m</td>
<td>£1.7m</td>
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<tr>
<td>17. External income (CP 11.1)</td>
<td>£12m</td>
<td>£13m</td>
<td>£14m</td>
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<tr>
<td>18. Knowledge Transfer Partnership (KTP) and KEEP funding (CP 11.2)</td>
<td>£1.2m</td>
<td>£1.5m</td>
<td>£2.0m</td>
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<tr>
<td>19. Local Enterprise Partnership (LEP) funding (CP 11.4)</td>
<td>£1m</td>
<td>£2m</td>
<td>£3m</td>
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</table>

(A set of additional REF-specific milestones (at UoA level) will be developed in due course, once the Stern Review is completed and the REF guidelines published.)