

## Research Strategy – Department of Engineering

### Vision (max 200 words)

Our vision for 2028 is a unified engineering department of 80 academic staff undertaking a broad spectrum of world class, high impact research, supporting our research-led teaching activities. This will maintain our excellent collegial atmosphere, enable flexibility and creativity in our work but with sufficient groups of researchers (our 'nodes') to challenge on the world stage in terms of research quality and impact.

To deliver on the vision, the Department will :

- Increase our PGR numbers and submission rates to 0.6/FTE/year
- Increase research funding to £10M annually in 2028
- Continue world leading interdisciplinary research, within the department, the wider university and with key external collaborators
- Maintain the world leading impact of our research, in terms of the REF metrics
- Increase the GPA of the departmental REF return to 3.50 based on the 2021 metrics

In the ten-year timeframe, the Department is looking to consolidate its position as a leading interdisciplinary engineering department offering world leading research that supports industry and academia and has strength in depth. We will be ambitious in our applications for research funding and the strategic direction that reflects the evolving areas that support grand challenges, where we can make a significant, world leading contribution.

### Strategic Research Themes and Priorities

<p><b>Research Themes – Challenges / Nodes :</b></p> <ul style="list-style-type: none"> <li>• Consolidate the Research Node structure within the department to support world leading, interdisciplinary research by engaging with research institutes</li> <li>• Ensure critical mass in the fundamental academic disciplines within engineering to support the production of world leading research by securing large research grants and strategic hires</li> <li>• Continue to show how the research in the department, which is conducted in Nodes, supports the Grand Challenges and UN Sustainable Development Goals, which are the externally facing shop window of our activity</li> </ul>	<p><b>Increase Research Spend :</b></p> <ul style="list-style-type: none"> <li>• Target an increase in research spend to exceed £10M annually by 2028</li> <li>• All members of academic staff to be named as an investigator on a current externally funded research grant</li> <li>• Professional development support, through the Research Nodes and RIS trainings, for academic and research staff to ensure grant applications are effective, increasing success rate of applications</li> <li>• Diversification of research income to include a wide range of funders, including industry</li> <li>• Increase the number of mid-career level staff winning substantial (£500k +) grants</li> </ul>
<p><b>Improving Outputs, Impact and Profile :</b></p> <ul style="list-style-type: none"> <li>• Professional development support for academic staff through the Staff Information Sessions to increase the fraction of 4* outputs to 40% at the next REF</li> <li>• Targeting overseas collaborators to increase position in world ranking</li> <li>• Maintain REF position within top quarter of discipline, with an ambition to improve position to top 15</li> </ul>	<p><b>Research Environment and Culture :</b></p> <ul style="list-style-type: none"> <li>• Increase the number of available PhD studentships through diversified funding routes, including industrial funding of 10 studentships annually</li> <li>• Create more PhD scholarship opportunities to attract high quality candidates</li> <li>• Ensure the Department is an open, friendly and inclusive place to work; providing support for all members of its diverse research community.</li> </ul>

**Aims and Indicators of Success**

<b>Aims</b>	<b>Strategy into action: critical initiatives</b>	<b>Success indicator</b>
<p><b>Increase research income and diversify funding streams</b></p> <p>Professional development support for academic and research staff</p>	Dissemination of information and best practice through Staff Information Sessions, with support from colleagues in RIS	Increased number of high quality applications to diverse funding streams (i.e. beyond UKRI)
	Support for grant applications through Research Nodes and project review at department level to increase success rate	Number of grants falling in the bottom half at panel reduced to under 10%
	Targeted support for mid-career academic staff to apply for longer, larger grants (£500k+)	25% of staff submitting £500k+ grants as PI By October 2025
	Establishment of Engineering / RIS Liaison Group to identify and mitigate the effect of road blocks in the obtaining of funding	Formation of Liaison Group, fewer issues raised during pre and post award of research grants and industrial contracts Done – Liaison meetings every Thursdays
	Increased success of research grant applications	Annual research spend to exceed £10M by October 2028
<p><b>Development of 4* Impact Case Studies for REF</b></p>	Encouraging the use of research leave and industrially focussed fellowships (i.e. Royal Academy of Engineering)	Increased number of academic colleagues collaborating with / embedded within industrial companies New areas of research developed in conjunction with industrial collaborations By October 2025
	Selecting potential Impact Case Studies early in the REF cycle and developing tracking	Increased GPA for Impact at next REF
	Creation of a Working Group to consider the incentivisation of impact generating activities in the department	Formation of Working Group and initiatives developed for Board of Studies, through Research Committee Done – Impact Action Group created, and led by Dol
	Investigate the potential to provide analytical and other skills related services for industry to increase involvement and impact	Development of a shop window for services; active use externally.
<p><b>Increase 4* Outputs to 40% at next REF</b></p> <p>Professional development support for academic and research staff</p>	Mentoring and support for staff to understand the difference between 3* and 4* outputs. Understanding the importance of the 100 words Collaboration with other departments in the faculty to disseminate best practise and experience	Improvements in external review scores for journal papers, alignment between internal and external scores, all academic staff involved in the grading of outputs to gain experience and facilitate further improvements Over 40% of outputs graded as 4* at external scoring as part of REF preparation
	Support for high quality outputs through Research Nodes to increase the fraction assessed as 4*	40% of outputs scored as 4* at the next REF

<b>Increase the number of PGR completions to 0.6 / FTE / Year</b>	<i>Ensure the delivery of timely, high-quality individual PGR reviews structured towards timely completion</i>	<i>Increased fraction of registered students submitting thesis within the period of supervised study to 70% By October 2025</i>
	<i>Through the review process identify issues and intervene early via Department-wide PGR review meetings</i>	<i>Increased fraction of registered students submitting thesis within the period of supervised study to 70% By October 2025</i>
	<i>Ensure engagement with CDT opportunities (renewals, such as ReNU and Aura, and new collaborations)</i>	<i>CDT renewals are scheduled for submission in 2023. Both CDTs successfully renewed in 2024.</i>
	<i>Support potential research students to apply for external PGR funding (such as China Scholarship Council, Commonwealth Scholarship Council, etc.), utilizing internal reviewer expertise to improve success rates</i>	<i>Increase the number of externally funded students to 20 annually, including 10 that are funded through collaboration with industry By October 2026</i>
	<i>Invest in Department scholarships, with a specific focus on supporting new/early career staff in attracting excellent research students</i>	<i>Increase the number of internally funded PhD scholarships (partial fund) to match those funded by industry or attract more self-funded PhDs, to provide a cohort of 20 annually.</i>