

## Research Strategy – Department of Engineering

### Vision (max 200 words)

In the next five years, we will be a unified engineering 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
- 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</li> <li>• Ensure critical mass in the fundamental academic disciplines within engineering to support the production of world leading research and foster interdisciplinary work</li> <li>• Continue to show how the research in the department, which is conducted in Nodes, supports the Grand Challenges, 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</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, 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>• 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>	<p>Dissemination of information and best practice through Staff Information Sessions, with support from colleagues in RIS</p>	<p>Increased number of high quality applications to diverse funding streams (i.e. beyond UKRI)</p>
	<p>Support for grant applications through Research Nodes and project review at department level to increase success rate</p>	<p>Number of grants falling in the bottom half at panel reduced to under 10%</p>
	<p>Targeted support for mid-career academic staff to apply for longer, larger grants (£500k+)</p>	<p>25% of staff submitting LOLA grants as PI By October 2025</p>
	<p>Establishment of Engineering / RIS Liaison Group to identify and mitigate the effect of road blocks in the obtaining of funding</p>	<p>Formation of Liaison Group, fewer issues raised during pre and post award of research grants and industrial contracts By the end of Epiphany Term 2023</p>
	<p>Increased success of research grant applications</p>	<p>Annual research spend to exceed £10M</p>
<p><b>Development of 4* Impact Case Studies for REF</b></p>	<p>Encouraging the use of research leave and industrially focussed fellowships (i.e. Royal Academy of Engineering)</p>	<p>Increased number of academic colleagues collaborating with / embedded within industrial companies New areas of research developed in conjunction with industrial collaborations By October 2025</p>
	<p>Selecting potential Impact Case Studies early in the REF cycle and developing tracking</p>	<p>Increased GPA for Impact at next REF</p>
	<p>Creation of a Working Group to consider the incentivisation of impact generating activities in the department</p>	<p>Formation of Working Group and initiatives developed for Board of Studies, through Research Committee By October 2023</p>
	<p>Investigate the potential to provide analytical and other skills related services for industry to increase involvement and impact</p>	<p>Strategy document developed and sent to Board of Studies for approval, subsequent advertisement to potential collaborators. By October 2023 NDAs signed with new collaborators By October 2025</p>
<p><b>Increase 4* Outputs to 40% at next REF</b></p> <p>Professional development support for academic and research staff</p>	<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</p>	<p>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</p>

Engineering Department  
Research Strategy Refreshed 2022/23

		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>	Ensure the delivery of timely, high-quality individual PGR reviews structured towards timely completion	Increased fraction of registered students submitting thesis within the period of supervised study to 70% By October 2025
	Through the review process identify issues and intervene early via Department-wide PGR review meetings	Increased fraction of registered students submitting thesis within the period of supervised study to 70% By October 2025
	Ensure engagement with CDT opportunities (renewals, such as ReNU and Aura, and new collaborations)	CDT renewals are scheduled for submission in 2023
	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	Increase the number of externally funded students to 20 annually, including 10 that are funded through collaboration with industry By October 2024
	Invest in Department scholarships, with a specific focus on supporting new/early career staff in attracting excellent research students	Increase the number of internally funded PhD scholarships to match those funded by industry, to provide a cohort of 20 annually By October 2024