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## Introduction

The Engineering Professors' Council ([epc.ac.uk](http://epc.ac.uk)) represents the academic engineers in the UK. Our primary purpose is to provide an influential voice and authoritative conduit through which engineering departments' interests can be represented. Our membership comprises engineering departments in 81 UK universities with nearly 8,000 academic staff in all branches of engineering, all UK administrations (and regions) and all provider types.

The EPC – together with our members – have much to input in this space but the range of the enquiry is so broad that a detailed response in this format is not feasible in the timescales outlined. We have therefore outlined below the details of a number of our recent campaigns to exemplify our extensive expertise in these areas, should the inquiry wish to contact us on the range of or specific issues in future.

## Covid response

Universities play a vital role in promoting research and innovation that helps generate economic growth throughout the UK and university Engineering departments have consistently been at the forefront of innovation. Notwithstanding business-as-usual long-term research and innovation projects, this is exemplified in the way university [Engineering departments responded to the Covid-19 pandemic \(\[epc.ac.uk\]\(http://epc.ac.uk\)\)](#) in early 2020.

## The Crucible Project: Industry & academia

During the course of the EPC 2020 Annual Congress, 'Industry & Academia: Supercharging the Crucible', EPC members explored the interface between industry and academia and some of the challenges to developing the relationship between industry and academia.

A panel session (featuring Johnny Rich, EPC Chief Executive; Prof Liz Barnes, Vice-Chancellor and Chief Executive, Staffordshire University; Michael Hill-King, University Engagement, Huawei; Dr Sarah Main, Executive Director, Campaign for Science and Engineering (CaSE); and Prof David Docherty OBE, former Chief Executive, National Centre for Universities & Business (NCUB)) discussed the cultural divide between industry and academia that throws up barriers to better collaboration. We explored whether that divide is real and, if it is, why. Do the cultural differences between the sectors impede collaboration or even create opportunities to learn from each other? Our expert panelists drew on their experience about how the divide may be bridged, especially in the context of engineering. The recording is available on the [EPC website](#).

Across nearly 30 speakers over 4 days of sessions, activities and events (more information [here](#)) EPC Congress 2020 highlighted five areas of mutual concern:

- Universities' and businesses' shared role in regional development (in response to the challenges of regional inequality)
- Academia collaborating with industry for teaching and learning
- Knowledge exchange

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- Research (and research funding)
  - Graduate employability and recruitment

The EPC Research, Innovation and Knowledge Transfer Committee brings together sector experts in university engineering research and development work offering perspective and relevant insight into our members' experience.

The Committee is currently building on this insight through 'The Crucible Project' to share best practice to facilitate UK Engineering's ongoing role working with business to deliver innovation, economic growth and prosperity throughout the UK. Case studies are currently being collated from members and will be showcased through an online Industry-Academia event in February 2022. We will also be developing exemplar-based online resources to help EPC members to build better industry links.

We expect the work to cover the interplay between these first two areas of interest and to challenge of unnecessary award barriers to collaboration between universities and industry, highlighting the need for greater flexibility in funder timescales/conditions to accommodate transient difficulties/challenges to which SMEs may be particularly susceptible. We know members have observed that these types of inequalities are increased during events such as the Covid pandemic.

### **Social Mobility**

EPC's recent policy report on social mobility in engineering, [\*Engineering Opportunity: Maximising the opportunities for social mobility\*](#), revealed earnings variability after graduation linking institutions that serve regions of the country with higher levels of deprivation and lower employment rates. Median incomes favour institutions in the South of England, East of England and London and Scotland. Ten years after graduation, Engineering graduates in London and Scotland have the highest median incomes of between £48,000 and £50,000 annually; in Yorkshire and the Humber, median incomes are between just £36,000 and £38,000 (LEO, 2020).

If graduates decide to remain in the region after study and are therefore least likely to achieve high income premiums, that demonstrates that the regional lens is an important one for both teaching and research. For students, graduates and universities, the Government's 'levelling up' agenda requires greater regional alignment in the research and development funding stream.

The research also suggests that engineering is less prone to the regional disparities of earnings than most aspirational professions. This suggests investment in engineering – through research, skills and infrastructure – may be highly effective in driving greater regional equality and breaking the link between geographic mobility as a necessary adjunct to social mobility.

### **Brexit Impact on Regional Research Funding**

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EPC's 2019 research on [The Impact of Brexit on Engineering Research Funding](#) revealed huge variation in the distribution of European Research funding across the UK and highlighted the critical role EU funding has in fuelling innovation through engineering research, which boosts industry at a regional level, which in turn drives the national economy.

### **Engineering as a Regional Leveller**

The latest HESA data (2018-19) shows that research grants and contracts income is not distributed evenly throughout the UK, with London, the South East and Scotland accounting for half of this. In Engineering, a more significant proportion of engineering research funding ends up outside London and the South East (61%). With approximately £1 in every £5 of university research grants and contracts income going to Engineering (around £1 in £3 in Wales, West Midlands and Yorkshire and the Humber), targeting extra R&D spending at Engineering is a good strategy for levelling up.

This is confirmed by the *UKRI gateway to publicly funded research and innovation*, which shows the proportion of active “engineering” projects concentrated proportionally less around London and the South East (32% of active projects with known locations in Engineering, compared to 39% overall). Commensurately more engineering projects were distributed (in order of proportional variance from all projects) to Scotland, the South West, Yorkshire and Humber, the North West, Wales and the West Midlands (source: <https://gtr.ukri.org/> accessed 30/6/21).

Such regional levelling up could, for example, include the promotion of schemes requiring collaborating partners in under-funded regions and ensuring finalised ranking lists in prioritisation panels include proportional funding to applicants in under-funded regions to extend inclusivity.

*EPC RIKT Committee*

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