

## Management response to CRAC evaluation report

The Royal Academy of Engineering commissioned Careers Research and Advisory Centre (CRAC) to undertake a survey of previous award holders of the Academy's Research programmes. The Research programmes (schemes) are designed to promote excellence in UK engineering research and innovation by supporting outstanding researchers and enhancing partnerships with industry.

A key objective of the evaluation was to determine the long-term impact of these schemes on awardees' careers and their contributions to engineering research, industry and the engineering profession. The Academy also wanted to evaluate whether the schemes remain fit for purpose and whether improvements are needed.

We accept in full the findings of the evaluation report. The results of the survey are a testament to the wider impact that Academy support has on society and the UK economy. In particular, we welcome recommendations one to three: that the schemes should be continued since most awardees are achieving the intended objectives; that no major changes are recommended as the schemes appear to remain largely fit for purpose and appropriate in terms of positioning in the research funding landscape for UK engineering; and that no substantial changes to the operation of the schemes are recommended as in the main they appear to be functioning effectively and almost all awardees report positive experiences.

The early-career Research Fellowships scheme was uniformly perceived as a critical opportunity for engineering researchers to transition to independent research leadership. We note that one effect of the scheme has been as a net importer of skills to the UK. Consistent with the aims of the scheme, almost all the alumni surveyed had obtained permanent employment in a research-related career.

The Research Chairs/Senior Research Fellowship (RC/SRF) was perceived as being one of the most prestigious fellowship opportunities in the UK for senior researchers and the very direct engagement with the industrial partner was a distinctive feature. Many awardees described the impact of the award on their career progression as transformational and a third of alumni have been elected as Fellows of the Academy.

The outcomes for our second industry-partnership programme, the Industrial Fellowship (IF) scheme, were similarly encouraging. Applicants were attracted by the opportunity to work in an industrial setting and the prestige of the scheme. For both RC/SRF and IF schemes, collaborations established during the awards were sustained, including setting up a joint research centre and applying jointly for further funding opportunities. Across all the schemes, awardees viewed mentoring and the potential opportunities for engagement with peers and others through the Academy as valuable.

The evaluation highlights some issues with the diversity of the awardees and regional (university) diversity, challenges that the Academy has long appreciated and is endeavouring to address. The Academy is committed to improving the diversity of the engineering career path, so that better reflects the society that it serves. We work in partnership with universities to encourage the submission of applications from groups underrepresented in engineering. Our Research Fellowship scheme permits an additional application if it comes from an underrepresented group. As a result of this positive action, 29% of the awards are held by female engineers. We will continue and strengthen these efforts alongside monitoring data on applicants and awardees.

The Academy is also committed to an inclusive economy, ensuring that we invest and support excellence across the UK. The regional diversity of our Research programmes is evaluated annually. We have increased programme outreach to universities over the past three years, through hosting the Academy-ARMA study tours but also through targeted, regional university visits and participation in

relevant events across the UK. This has increased awareness of the Academy's schemes and supported potential applicants with their applications. The total number of applications we have received has significantly increased due to the Department of Business, Energy and Industrial Strategy Investment in Research Talent funding received in 2016 and 2017. In total we received 993 applications throughout this period (2016-2019), with 190 awards represented across all regions in the UK. We currently have 68 RC/SRF awards distributed across 25 institutions.

We would also like to note that the Research schemes have significantly evolved in response to stakeholder needs and a changing R&D landscape. The IF scheme has recently changed so that awards can last over a two year period and include industry researchers moving into academic environments. Alongside this evolution, we have developed a suite of training and professional opportunities for our awardees, as well as additional funding opportunities. We will continue to improve our schemes, so that they continue to deliver for society and the economy. Recommendation four is valuable in this regard and we will use it to steer our plans.

We also accept recommendation five that further career tracking of scheme participants and alumni, together with periodic evaluation work are undertaken on a planned and systematic basis, to build upon this initial study.

I would take the opportunity to thank the Department of Business, Energy, and Industrial Strategy (BEIS) for supporting the Research programmes and our Fellows who give their time generously in our committees, steering groups and as awardee mentors.

Professor Karen Holford FREng CBE FLSW on behalf of Research Committee