Royal Society of Biology (RSB) – Written evidence (HFV0032)

The Royal Society of Biology (RSB) is a single unified voice for biology: advising government and influencing policy; advancing education and professional development; supporting our members, and engaging and encouraging public interest in the life sciences. The Society represents a diverse membership of individuals, learned societies and other organisations. Individual members include practicing scientists, students at all levels, professionals in academia, industry and education, and non-professionals with an interest in biology.

The RSB welcomes the opportunity to comment on the Lord's Select Committee inquiry on the economics of higher education, further education and vocational training. With planned and recent reforms in the UK's higher education and further education systems it is anticipated that structural and financial changes will follow. The scope of this inquiry is vast, however we have kept our response brief as requested, highlighting key areas for consideration. We are pleased to offer these comments which have been informed from our committees, special interest groups and member organisations.

Is the current structure of post-school education and training, and the way it is financed, appropriate for the modern British economy?

1. As highlighted in our response to government on the inquiry into *Closing the STEM skills gap*, there is a fundamental need to raise the total number of skilled individuals in the STEM workforce and a number of skills gaps have been identified.[1] To begin to address the STEM skills gap we will need to increase the number of people continuing to study STEM subjects post-16 on both technical and academic pathways. Both of these routes must have parity of esteem if we are going to encourage more young people to ultimately enter the STEM workforce. The alternative technical pathways must be supported and promoted as equivalent to traditional academic routes.

2. We support the government's recent commitment to investing in a stronger technical workforce in the future. We also recognise that academic and technical training routes must have equal standing and therefore both pathways must be funded to ensure that they are adequately supported. It is well-known that the Further Education (FE) sector has been under great financial pressure for many years. Traditionally, funding provisions for the FE sector have been considerably smaller than funding for students in the higher education sector or in schools. The Society welcomes the government's pledge of £500 million per year to invest in T-levels. As technical education expands, it will be crucial to ensure that funding for 16-19 further education

[1] http://data.parliament.uk/writtenevidence/committeeevidence.svc/evidencedocument/science-and-technology-committee/closing-the-stem-skills-gap/written/45123.pdf

is fairer and matches equivalent funding provisions for higher education and pre-16 education.

3. We support the government's investment in training through apprenticeships and encouraging organisations to take on more apprentices to take advantage of the funding from the apprenticeship levy.[2] It is important that businesses invest in the training of their staff who are working through an apprenticeship but also that they support all staff throughout their career. In order to pay the levy, businesses should not be depleting their training budgets for their other employees; the investment in apprenticeships must not be to the detriment of investment in training the rest of the workforce.[3]

4. The introduction of higher-level apprenticeships presents an opportunity for companies to develop superior technical skills in their workforce. The Government could explore the possibilities for tailoring advanced technical training to take account of the structure of this sector.[4]

5. The life sciences sector is growing and new jobs and job roles will be created to keep pace with rapidly developing scientific fields and technologies. It will be necessary to prepare individuals coming through the current education system and future cohorts with the skills needed to keep pace with scientific advancement.[5] To increase the pool of STEM talent and strengthen the British economy we must also increase diversity and attain a gender balance across the STEM sector by addressing barriers preventing groups from entering and remaining within the STEM sector.

6. University tuition fees have risen in recent years, and are increasingly becoming a key consideration for students choosing to pursue higher education.[6] We do not want to see tuition fees and the costs of university being a barrier to students who would like to continue their studies.

7. University funding must match the government's increased expectations for university and school collaborations. In the Department for Education Green Paper *Schools that work for everyone*, the government indicated that UK universities should engage and support schools further. UK universities currently engage with a wide range of STEM initiatives with schools. In order to increase participation and widen access of these initiatives to students, universities must receive adequate funding from the Government to ensure initiatives between universities and schools are properly resourced.[7]

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[2] https://www.rsb.org.uk/images/article/policy/RSB_response_to_BEIS_consultation_Building_our_Industrial_Strategy.pdf
[3] https://www.rsb.org.uk/images/RSB_Apprenticeship_Inquiry_Response_final.pdf
[4] https://www.rsb.org.uk/images/RSB_response_to_the_BEIS_Bioeconomy_consultation_Final_response.pdf
[5] http://www.scienceindustrypartnership.com/media/529050/sip_science_industry_demand_for_skills_final.pdf
[6] https://www.suttontrust.com/newsarchive/growing-fee-fears/
[7] https://www.rsb.org.uk/images/Schools_that_work_for_everyone_RSB_consultation_response_12.12.pdf

8. Adequate funding must be available to support STEM subjects in further and higher education. These subjects incur higher costs compared to other subjects as they are resource intensive with their practical aspects, including laboratory and fieldwork, as well as high requirements for staff time. However, developing these practical skills are vital to ensure we have a highly skilled STEM workforce. Often 'cross subsidising' of the science subjects is necessary to fund these areas of practical work in colleges and universities. It is important that this continues in order to ensure high quality STEM graduates enter the workforce with a strong skills and knowledge base, and to ensure parity between graduates of different subjects.

If not, what changes are required to develop a system that meets the needs of enterprise and the labour market whilst providing value for students and the Government?

9. Technician-level skills are in high demand but we face long-term shortages in the STEM sector if we are unable to keep up with demand for these skilled roles.[8] Many technician level jobs are increasingly being filled by graduates,[9] who are often equipped with the appropriate theoretical knowledge but need to develop their practical and applied skills further at the start of their role. The implementation of the new technical routes outlined in the government's Post-16 Skills Plan, including apprenticeships and T-levels which require a high-level of technical knowledge and practical skills, may be able to alleviate this skills mismatch in the life science sector.[10] Forecasts suggest that the number of apprenticeships will need to significantly increase to fill these roles and ensure recruitment is sustainable. To promote and encourage uptake of these roles, technicians must be recognised for the vital role they play in supporting research and education.

10. To meet demand for a highly skilled workforce, there must be investment in ongoing training and upskilling of the current workforce. As previously recommended in our response to *Closing the STEM Skills Gap* and the *Industrial Strategy*, we believe employers should be encouraging their employees at all levels to work towards professional registration. By achieving professional registration employees demonstrate their commitment to undertaking continuing professional development as well as having a portable recognised qualification demonstrating their competency within their field.[11] In order to meet this demand, measures should be considered to assist capacity-building within professional bodies, particularly for smaller organisations.

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[8] http://www.gatsby.org.uk/uploads/education/links-6838-gatsby-a5-technicians-brochure-2016-digital-aw-1.pdf
[9] http://www.scienceindustrypartnership.com/media/529053/5202fd_sip_skills_strategy_2015_final_low.pdf
[10] https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/536043/Post-16_Skills_Plan.pdf
[11] https://www.rsb.org.uk/images/article/policy/RSB_response_to_BEIS_consultation_Building_our_Industrial_Strategy.pdf

11. The links between employers and education and training providers must be supported to ensure that the system meets the needs of students undertaking work placements and students are equipped with the skills necessary for employment in their chosen sector. Employers should be encouraged to collaborate on work placements, as there is likely to be additional competition between higher education and further education students for the similar placements.

12. In regions with a low concentration of higher and further education providers, STEM employers should be encouraged to collaborate and consider flexibility around training processes, for example through distance learning modules. The geographical proximity to the workplace could be a barrier to individuals located in these areas, who wish to pursue technical courses, retrain or upskill.

13. Fundamental, 'blue sky,' research is vital for generating knowledge, and may lead to future development of trade, economic or welfare gains, as well as ensuring that the UK has absorptive capacity to benefit from advances made worldwide. Fundamental research also contributes to the development of skilled graduates and post-graduates. Funding for this kind of research should be seen as a priority for investment to enable further innovation.

14. Feedback from the community has highlighted concern around the standardisation of the awarding process for higher and degree apprenticeships and how standardisation will be achieved to ensure that learners obtain awards that are comparable between providers. Technical education standards must be developed to enable individuals to gain transferrable skills relevant to related industries and facilitate a flexible, adaptable skilled STEM workforce. It is important that the learned societies are represented and included in the discussion and development of these standards.

15. The Royal Society of Biology's degree accreditation programmes are raising the standards of bioscience education in higher education institutions, and enabling students to develop the skills needed by employers alongside strong academic knowledge and practical skills. The RSB has accredited 45 university across the UK, which include Degree Accreditation (245 degree programmes at 33 universities), Advanced Degree Accreditation (213 degree programmes at 22 universities) and Master's Degree Accreditation (5 master's programmes at 1 university). The accreditation of bioscience programmes within the FE sector would help to raise the standards of technical and profession education and training. Whilst initial work is being done by the RSB in this area, the support of Government funds for the accreditation of FE bioscience programmes would enable accreditation processes to launch on a greater scale and have a wider impact.