

Written submission by the British Pharmacological Society to the *Consultation on the revision of Concordat to Support the Career Development of Researchers*

About us

The British Pharmacological Society (BPS) is the primary UK learned society concerned with research into drugs and the way they work. The Society has around 4,000 members working in academia, industry, regulatory agencies and the health services, and many are medically qualified. The Society covers the whole spectrum of pharmacology, including laboratory, clinical, and toxicological aspects. Pharmacology is a key knowledge and skills base for developments in the pharmaceutical and biotech industries, and is therefore fundamental to a thriving UK industry and R&D. The Society publishes three scientific journals: the British Journal of Pharmacology, the British Journal of Clinical Pharmacology, and Pharmacology Research and Perspectives.

Purpose

The Review of the Concordat to Support the Career Development of Researchers recommends that a revised Concordat has a continued role to play in improving the career development of researchers (Recommendations 1, 11, 12 of the [review report](#)). The following questions address the usefulness and purpose of a revised Concordat.

Please note, the questions have been extracted from an online survey. They start at Q10 because Q1-9 cover details about survey respondents.

10. The review highlighted that the existing Concordat has had some impact in driving cultural change. What in your view would make the revised Concordat more effective? What are the opportunities and challenges (within your organisation / across the sector) in implementing the Concordat?

Competing pressures are becoming more problematic for PIs because they are assessed as individuals on the basis of their input and outputs and this can conflict with the mentoring/nurturing of early career staff. With the ever-growing pressures (eg REF, TEF, KEF), attending to the needs of early career staff by more senior colleagues could become a victim because it has implicit, rather than explicit, value. Only dedicated PIs will make the time to do it.

The most effective strategy would be to ensure that compliance with the Concordat is rewarded—e.g., through a formal funding stream and explicit recognition of criteria for promotion. This already happens to some extent—e.g., the HR Excellence in Research Award¹. The assessment of 'Environment' in the forthcoming REF (i.e., the extent to which the employer supports researchers) will also help, but this factor should be explicit and prominent in the REF guidance for submission.

Furthermore, there should be explicit acknowledgement that current "metric driven" approaches should not discriminate against early career staff who are just developing their careers as independent researchers. Equally, there should be support provided at institutions to develop staff along the lines of "recognition metrics" (e.g., within a competency framework, as is common practice in other sectors) to ensure that there is objective evidence for implementation and impact.

Structure

The Review of the Concordat to Support the Career Development of Researchers recommends that its structure is revised to include specific principles, obligations and

¹ Vitae. HR Excellence in Research Award. Available at: <https://www.vitae.ac.uk/policy/hr-excellence-in-research>

good practice to apply to researchers, principal investigators, employers, and funders (Recommendations 6, 13). An example of this proposed revised structure is given in Annex 2 (pp 20-28).

11. In general, do you support the proposed structure of the revised Concordat to include					
	Strongly agree	Agree	Undecided	Disagree	Strongly disagree
Principles	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Obligations	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Examples of good practice	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Strongly agree on all points.

12. In general, do you support the structure segmented by these different groups?					
	Strongly agree	Agree	Undecided	Disagree	Strongly disagree
Researchers	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Principal investigators	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Employers	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Funders	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Strongly agree on all points.

13. How can the structure or format of a revised Concordat improve accessibility and use by researchers, PIs, employers and funders?

The existing format looks good and should be accessible for most people; it is well-organised with highlights at key points. However, it is rather long, which will discourage many people from reading it. This could be resolved by removing some of the (extensive) repetition of points and text, using design/visuals to make the content easier to engage with, and also by including a summary of key points. Creating an animation/video discussing the key principles may also help people to engage with the content. We would further recommend consulting experts on accessibility to ensure good practice formats for disability are followed.

14. How can the revised Concordat best facilitate equality and diversity in the research environment and create a more diverse and inclusive research culture?

Ultimately, the Concordat will best facilitate equality and diversity if it is widely used. The Concordat places explicit value on people and their development. However, current research culture can be individualistic and competitive due to the nature of incentives and rewards, such as the pressure to publish. This presents a barrier to implementing the Concordat: the time and resource it will take to do this properly is in opposition to current incentives. The Concordat is a potentially powerful tool to help shape these incentives and culture for the future. Its success will depend critically on the active support from funders – not just lip service, but actively engaging with its principles as part of decision making on awarding grant money. It will also depend on how effectively mechanisms such as REF2021 are deployed to drive behavioural change at institutions.

The Concordat could also be used in discussions to support the sector in developing and committing to a shared vision of a positive research culture.

We agree with all the points proposed in the Concordat, and there are sensible suggestions on how this can be achieved. However, the document could reflect a more balanced and explicit attention to all protected groups, especially those with disabilities, insofar as that is possible.

In the short-term, financial rewards for promoting facilitation of equality, diversity and inclusion (EDI) within HEIs will be a faster and more effective mechanism than merely relying on goodwill and aspirations. In the longer term, the EDI profile of researchers at HEIs will become more favourable as the imbalances in the pool of students and workforce are progressively eliminated. As part of achieving this, the revised Concordat should recommend incentives and requirements at an institutional and funder level that explicitly reward non-research activities (e.g., budget management, laboratory management, public engagement, seminar programming and organisation, volunteering on university committees, etc), and where appropriate make them a conditional part of being promoted or receiving funding.

As a learned society, we would be keen to support activities to raise awareness of the Concordat, and to actively engage with it where appropriate. We recognise that we exist in a complex ecosystem of HEIs, funders, industry and government, but also have levers at our disposal (such as the prizes we choose to award) that could support the aims of the Concordat. We would be interested to work with the Careers Research & Advisory Centre to explore such opportunities.

Audience

The Review of the Concordat to Support the Career Development of Researchers recommends that its reach should be extended to include all institutional staff engaged in research, while keeping the primary focus as research staff (Recommendation 2).

The proposed new definition would include all staff who are research active (whether or not primarily hired as researchers), such as postdoctoral researchers, research assistants and associates, research fellows, technicians, and 'hidden researchers' (e.g., teaching fellows, hourly paid teaching staff who are research active).

15. Do you agree with the recommendation to explicitly broaden the definition of 'researchers' to include all staff engaged in research?

Strongly agree Agree Undecided Disagree Strongly disagree

Strongly agree.

16. Please explain your answer (you may wish to consider opportunities/challenges, consistency of definition, inclusivity, and specific target audiences).

It is important to support the view, expressed in the document, that 'researcher' does not simply refer to academic research staff, but should include support staff (e.g., technicians), especially 'hidden researchers'. These comprise many highly qualified researchers who, for various reasons are now employed in HEIs on Teaching and Scholarship contracts rather than Research and Teaching contracts, an unintended consequence of the REF. There is increasing realisation that separation of teaching and research can have a detrimental effect on high-quality research-led teaching and undermines our future pool of research expertise. The proposals in the Concordat would help to repair the damage.

In addition to this point, research rarely rests on the shoulders of one individual and everyone engaged in the work, at whatever level, has contributed in some way—e.g., animal technicians and software specialists whose contributions to biomedical research are fundamental and yet rarely acknowledged. It has been possible for papers to be published in high impact journals which, despite being based on the development of new software, do not include the developer in the list of authors, or acknowledge their contribution in other ways. Setting clear expectations about such recognition in the Concordat could help to prevent such injustice. We are supportive of the work done by the Academy of Medical Sciences on 'team science'² that aims to improve the recognition of team science contributions in biomedical research careers. Indeed, many of the recommendations in the 2016 report align with the aims of the Concordat. The report states that "findings indicate that academic reward and recognition systems have failed to match the growth of team working"². As mentioned in our response to Q14, incentive, reward and recognition systems need to develop in such a way that these are not barriers to implementation of the Concordat, and indeed, uptake of the Concordat may help drive changes in those systems. Furthermore, we want to highlight the important contributions of technologists to team science (for example AI experts, mass spectrometrists etc), who like statisticians, play a huge role as part of team science, but are not adequately recognised. It is important that appropriate career structures are developed for these technologists.

17. Are there any groups that should be specifically excluded from the Concordat definition of 'researchers'?

(select all that apply)

- Postgraduate researchers (studying for doctorate)
- Teaching staff (e.g. teaching fellow, sessional/visiting lecturer)
- Academic staff (e.g. lecturer, senior lecturer, assistant/associate professor)
- Principal investigators, research group leaders (with responsibility for managing research staff)
- Technicians or technical / software specialists
- Professional/support staff who research
- Senior staff who research
- Researchers employed outside of academia
- Other (please specify)

Yes. Postgraduate researchers.

Career and research identity

The Review of the Concordat to Support the Career Development of Researchers recommends that there should be increased support for researchers to develop their career and research identity, proposing allocation of 20% of a researchers' time, including '10 days' training allowance' (Recommendation 4) to further their career opportunities in any employment sector.

18. In principle, there should be increased support for researchers to develop their career and research identity

- Strongly agree Agree Undecided Disagree Strongly disagree

Agree.

²The Academy of Medical Sciences. Improving recognition of team science contributions in biomedical research careers. March 2016. Available at: <https://acmedsci.ac.uk/file-download/6924621>

19. How should the Concordat support researchers to develop their career and research identity?

	Strongly agree	Agree	Undecided	Disagree	Strongly disagree
Funders place "increased emphasis and support on uptake of 10 days' training"	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Employers place "increased emphasis and support on uptake of 10 days' training"	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
"Allocated time within grants for developing researcher independence"	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
"20% of a researcher's time allowed for developing independent research and skills"	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Strongly agree, Strongly agree, Agree, Strongly agree.

20. Please provide some context to your answers to Q18 and Q19. How can these be implemented? What are the barriers? What additional factors and alternative models should be considered?

Our response below is based on the understanding that this 20% includes time for personal development and non-research skills, as set out by the consultation document on page 12:

"Researchers should be allowed 20% of their time for personal development, including time to pursue independent research, training (currently 10 days per year), consultancy, visits to other research centres or groups, organising seminars and networking events, placements at industry or policy organisations, teaching or other relevant activities".

It is important to strike the right balance and to provide reasonable support and development structure, along with meetings to ascertain development progress. This development time should also take into consideration the career aims and capabilities of individuals: not everyone is suited to, or desires, an independent research career. Therefore, there should be means to use this development period to support researchers in the exploration of, and transition to, another career option. The implication is that researchers should be free to use this time in line with their own career aspirations and realities. Further, regardless of whether researchers choose a career 'in research', non-research skills are increasingly valued as part of delivering impactful research, for example through public engagement.

There may be challenges to this working in practice, because it will depend on active support from PIs and institutions. The document recognises tensions between PIs and their researchers, and these may increase as a result of this proposal (and we have noted this in our answers to Q14 and Q16). It is also unclear how this process would be monitored to ensure it is delivered. Would there be penalties if such benchmarks are deemed to have not been met and, if so, what might they be? Would there be incentives for early adopters? In short, effective implementation of this proposal needs careful forethought and planning if it is to deliver a net benefit. It would be helpful for the Concordat to provide resources such as training providers, links to funding schemes and other case studies that would demonstrate the value of such training and facilitate access to them.

Contracts, mobility and promotion

The Review highlights the prevalence of fixed term contracts, the need to be mobile and a lack of progression and promotion opportunities for research staff (Recommendation 5).

21. The revised Concordat should address the use of fixed term contracts for researchers

Strongly agree Agree Undecided Disagree Strongly disagree

Agree.

22. Please provide some commentary to explain your answer to Q21. How should the revised Concordat address the use of fixed term contracts? What alternative models and existing good practice should be considered?

To develop independence, researchers need a wide range of research experience (e.g., technical, field, different styles of management). One way of gaining this is by spending short periods of time in different laboratories. To date, this has been delivered through fixed-term contracts and a cultural expectation of mobility. We do not dispute that the availability of fixed-term contracts at the beginning of a career can support career flexibility and widen experience of different research environments. However, fixed-term contracts are not the only mechanism capable of driving such experience and, in fact, they have the significant disadvantage of exacerbating career insecurity. There is also evidence that these contracts are being increasingly used to drive productivity through an employment model that is both of lower cost and lower risk to employers. For example, a recent PNAS paper shows that the age at which a researcher reaches independence has dramatically increased over the past few decades³: many people are in a precarious employment position for longer. The authors show that this phenomenon is well-recognised in the USA and describe it as problematic because innovative, breakthrough research is more often done by younger scientists. The NIH has begun to address this at an administrative level by actively funding younger PIs at higher rates. Further, the paper notes a hope “that existing PIs over the age of 55 will realize how fortunate they were in their youth and help younger PIs by mentoring them for independence and originality”. We support this sentiment but argue that the provision of mentoring and support must be explicitly valued and built into academic promotion criteria rather than relying on goodwill alone. Further, the system of fixed-term grant funding puts substantial pressure on students and young scientists to produce results and publish, potentially at the cost of a considered approach to their research – as noted in the context of recent concerns about the root causes of poor research integrity and reproducibility^{4,5,6}. The sector also needs to consider how this pressure is contributing to the rise in mental health issues, as discussed in Nature⁷ and BPS blogs^{8,9}.

A related problem is that postdoctoral researchers employed continuously on a series of fixed-term contracts find themselves in an increasingly risky position. There is a danger that when a PI (who has been a long-term employer of a postdoctoral researcher) retires

³ Levitt & Levitt (2017). Future of fundamental discovery in US biomedical research Proc Natl Acad Sci U S A. 114(25): 6498–6503

⁴ House of Commons Science and Technology Committee. Research integrity. Sixth Report of Session 2017–19 Report. Available at: <https://publications.parliament.uk/pa/cm201719/cmselect/cmsctech/350/350.pdf>

⁵ Anonymous academic. Pressure to publish in journals drives too much cookie-cutter research. Available at: <https://www.theguardian.com/higher-education-network/2017/jun/30/pressure-to-publish-in-journals-drives-too-much-cookie-cutter-research>

⁶ Sattary L. Publishing pressure eroding research integrity. Available at: <https://www.chemistryworld.com/news/publishing-pressure-eroding-research-integrity/3003342.article>

⁷ Evans TM, Bira L, Gastelum JB, Weiss LT, Vanderford NL. (2018) Evidence for a mental health crisis in graduate education. Nat Biotechnol 36: 282–84.

⁸ Seeley A, McKerr N. Mental health issues: a common lab hazard? Available at: <https://www.bps.ac.uk/publishing/blog/june-2018/mental-health-issues-a-common-lab-hazard>

⁹ Wickstead E. There is a heavy cost to getting a PhD that nobody talks about. Available at: <https://www.bps.ac.uk/publishing/blog/july-2018/there-is-a-heavy-cost-to-getting-a-phd-that-nobody>

or otherwise fails to renew their grant funding, those relying on fixed-term contracts will find themselves facing redundancy in a culture in which researchers who are 'long-term postdocs' are generally not viewed as high quality or competitive hires.

We are cautious in our suggestions to address this issue. The use of fixed-term contracts is systemic, and any fast, radical changes are likely to disadvantage some individuals. For example, we would ideally like to see a restriction on the number of fixed-term contracts that can be held by a single individual before they move onto a permanent position or into another sector. However, there are likely to be many people in this position and implementing such a solution without an alternative career pathway would likely be disastrous for them.

Instead, we would challenge signatories to the Concordat to explore and promote a variety of employment models within an academic setting. Being able to work independently as a researcher in a team setting is not the same as being an 'independent researcher', which we understand to mean leading a research group and bringing in grant money. Not all individuals will want a career as an independent researcher, but many of these people would be suited, and attracted, to a career pathway that would reward high-level research skills for those wishing to contribute to a research group rather than lead it. Currently, there is nowhere for these researchers to go, unless they take a series of fixed term contracts. New, permanent employment pathways and strengthening of technologist pathways would help address this loss of talent. We reiterate that there is nothing wrong, and plenty right, with moving to a career other than research. However, many leave because there are simply not enough permanent jobs. Creative approaches to the academic career model would likely result in a more effective use of the significant public investment made in training researchers.

Further, providing parallel employment models that allow people to progress on research and technical pathways (and move flexibly between them) is likely to support retention of key (and expensive) skills in the sector. The private research sector (e.g., pharmaceutical companies) would likely be a good source of expertise regarding potential career models. We are also aware that many institutions are developing creative approaches to career pathways. For example, Professor Dame Anna Dominiczak (University of Glasgow, Regius Professor of Medicine, Vice Principal and Head College of Medical, Veterinary and Life Sciences) has been pioneering an academic/technical career pathway with equal promotion opportunities and flexibility to move between pathways and a focus on developing Imaging Scientists¹⁰ (backed by BBSRC, the Wellcome Trust, MRC, EPSRC, BioImaging UK and twelve institutions) has led to greater recognition and strengthening of this career pathway, retaining the skills of those people who may otherwise have chosen a different route:

"I did lots of imaging during my PhD research, and I liked microscopy and science a lot, but I didn't want to be a PI. I guess this is a common profile." - Carina Monico; Assistant Facility Manager, Micron Oxford Advanced Bioimaging Unit (quote taken from the Imaging Scientist website)

Initiatives such as these could be publicised as part of Concordat communications to raise awareness of new approaches and encourage their uptake.

23. The revised Concordat should address the progression and promotion opportunities for researchers

Strongly agree Agree Undecided Disagree Strongly disagree

Strongly agree.

¹⁰ ImagingScientist. Available at: <http://www.imagingscientist.com/>

24. Please provide some commentary to explain your answer to Q21. How should the revised Concordat address progression and promotion? What alternative models and existing good practice should be considered?

We have answered this in relation to Q23, because we think Q21 was noted by mistake.

We would suggest a review of current and emerging practice in institutional internal promotion criteria, including the extent to which non-research skills are actively valued. The Concordat could make recommendations on good practice based on the outcomes of such a review.

25. The revised Concordat should address the expectation of mobility for researchers

Strongly agree Agree Undecided Disagree Strongly disagree

Undecided.

26. Please provide some commentary to explain your answer to Q21. How should the revised Concordat address mobility? What alternative models and existing good practice should be considered?

There is no definitive answer to this point; mobility should be facilitated but should not be an expectation. Whereas mobility offers opportunities to increase inclusivity, it imposes the disadvantages (e.g., reduced security), as mentioned above. However, mobility does enable individuals to develop broader skills more quickly through exposure to different working cultures and expertise; interdisciplinary research is particularly dependent upon this factor. It is important to acknowledge that mobility may also not be possible for certain specialties where opportunities to work in that specialised area is limited. -We need to ensure that orphan areas of research are not disadvantaged and therefore disappear from our portfolio as an unintended consequence of imposition of mobility on all researchers.

Overall, it is not clear what view the Concordat takes on mobility. We suggest that mobility should be facilitated (because it is one mechanism through which researchers' gain experience and perspective), but that researchers should also be confident that choosing to develop their career in a more stable manner will not disadvantage them, and we do not disadvantage certain research areas where opportunities for mobility are limited.

The query notwithstanding, the main issue is whether it is acceptable to increase support for, and the security of, researchers at the expense of speed of research progress.

Communication, dissemination and sharing practice

The Review highlights that all researchers and signatories should be aware of the Concordat (Recommendation 8).

27. What is the most effective way of ensuring all relevant audiences are aware of the Concordat?

It will be important to disseminate the Concordat through as many channels as possible, using certain points in the system as nodal points for amplification of communications (e.g., learned societies, postdoc development centres, funders). However, awareness of the Concordat is not the aim – engagement with it is. For example, it would be helpful if there were toolkits such as workshop packs that would support those on the ground to engage with their peers, employers and funders. Furthermore, mass communication should be done through as many channels as possible (including funders, employers,

and learned societies); electronic communications will enable this to be achieved at minimal cost.

The Review encourages the sharing of good practice across the HE sector and learning from other employment sectors (Recommendations 3, 5).

28. What should happen to encourage and facilitate sharing good practice within your organisation?

N/A. We are not an HEI or research establishment

29. What should happen to encourage and facilitate sharing good practice across the HE sector or learning from other sectors?

See response to point 28, above.

Governance

The Review recommends that the Concordat must continue to be owned by the HE sector overseen by a representative steering group (currently performed by the Concordat Strategy Group) (Recommendation 10).

30. How can continued sector ownership be best achieved? Who should be represented? What does true sector ownership look like?

We are not an HEI or research establishment. However, we are aware that HEI Human Resource departments will need to support the principles expressed in the Concordat, if it they are to be adopted in any effective way. This would need to be driven, top-down—i.e., by HEI management leaders, especially VCs.

Currently, representative groups (e.g. Universities UK, Guild HE, Russell Group) are Concordat signatories on behalf of the individual institutions.

31. Individual institutions (as well as the representative bodies) should be invited to be signatories of the revised Concordat

Strongly agree Agree Undecided Disagree Strongly disagree

SA.

Monitoring and review

The Review highlights the importance of reviewing sector progress in implementing the Concordat principles (Recommendations 9, 14, 15) and recommends a review of the HR Excellence in Research Award, and any other relevant awards, to ensure it remains relevant and accessible as a driver of change (Recommendations 14, 15).

32. How should the implementation of the Concordat principles be evaluated within your organisation?

We are not an HEI or research establishment. Nevertheless, our implementation of the principles of the Concordat, generally, is reviewed annually by our Finance Committee, Management Committee, Membership & Awards Committee and Council. On the basis of this scrutiny, we promote the careers of early career scientists as best we can through the provision of a PhD studentship and prizes for research output as well as reserving roles for early career scientists at the annual meeting (e.g., Co-Chairs of symposia and acting as judges for poster prizes). We also strongly encourage early career scientists to gain valuable experience by contributing fully to all other activities of the Society; much

of this activity is channelled through our Early Career Advisory Group, from which EC representatives are elected to join on all the Society's governance committees.

**33. How should implementation of the Concordat principles be evaluated as a sector?
Evaluation can be achieved through REF (backed up by TEF for the teaching fellows).**

N/A.

34. How helpful is it to be able to benchmark progress against others?

Very helpful Helpful Slightly helpful Not at all helpful

35. Please describe what approaches would be more helpful. Which aspects of the Concordat would be most valuable to benchmark?

N/A.

36. How useful is the HR Excellence in Research Award in supporting your implementation of the Concordat principles?

Very useful Useful Slightly useful Not at all useful Not applicable

N/A.

37. What approaches, models, or awards should be considered to support benchmarking and implementation?

N/A We are not an HEI.

The Concordat review recommends a more comprehensive collection and understanding of researcher careers data (Recommendation 9).

38. How important is it that researcher career data is collected at an

	Very important	Important	Slightly important	Not at all important
Organisational level	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
UK level	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Very important, very important.

39. Please explain your answer (you may wish to describe what data you already collect, what would facilitate better collection and sharing of data, what the challenges are, existing models, and innovative approaches).

Training Researchers through the HEI system is expensive and we need to ensure that investment is justified by long-term career trajectories. We need better data on what people do, where they go, and why.

Data on the diversity of the workforce is also important in terms of assessing progress. The issue of why some people are more likely to stop progressing in an academic research career than others has been considered in detail, especially in relation to a lack of diversity in senior positions. The House of Commons Science and Technology Select

Committee again noted the “*system of short-term employment contracts for post-docs results in job insecurity and discontinuity of employment rights that is difficult for any researcher, but disproportionately deters women from continuing with science careers.*”¹¹

We also need a better understanding of the research skills required for the future. For example, the balance of need between technical expertise and academic leadership, and therefore the recruitment and progression pathways required to meet this need.

Analysis of the commitment by the UK Government to work with industry to boost spending on R&D to 2.4% of GDP by 2027 indicates that the UK needs to train many more researchers. In addition to pumping in more talent, it will be crucial to understand what level of retention is possible and reasonable given this target – and what changes need to be made in employment pathways to get there (please also see our answer to Q22). We suggest that some element of the challenge in retention is due to inadequate provision of flexible career pathways that support a wide variety of research roles. Achieving goals of growing the UK research workforce (that is, through expansion of low security PhD and postdoc positions) without addressing the loss of people and due to rigid career pathways with low-security, would, in our view, be unethical and a poor use of the investment already made into the education and training of existing researchers.

Final comments

Please take this opportunity to raise any other comments, ideas, or concerns for the revision and implementation of a new Concordat.

40. Any other comments.

None.

¹¹ House of Commons Science and Technology Committee. Women in scientific careers. Available at: <https://publications.parliament.uk/pa/cm201314/cmselect/cmsctech/701/70107.htm#a16>