

DR MATTHEW C. GAGE (Orcid ID : 0000-0002-6668-6573)

DR RACHEL GIBSON (Orcid ID : 0000-0002-5823-6468)

DR ALISON D. MCNEILLY (Orcid ID : 0000-0003-4869-178X)

Article type : Letter

Title: Challenges and solutions for diabetes early career researchers in the COVID-19 recovery – perspectives of the Diabetes UK Innovators in Diabetes

Short running title: Early career researcher challenges and solutions in the COVID-19 recovery

Authors:

*Matthew C. Gage¹, *Deirdre Harrington^{2,3}, Gemma V. Brierley⁴, Rachel M. Freathy⁵, Brendan M. Gabriel^{6,7}, Rachel Gibson⁸, Alison D. McNeilly⁹, Claire L. Meek¹⁰, Lee D. Roberts¹¹

***Corresponding authors:**

Matthew C. Gage, mgage@rvc.ac.uk

Deirdre Harrington, deirdre.harrington@strath.ac.uk

Institutional affiliations:

¹Department of Comparative Biomedical Sciences, Royal Veterinary College, 4 Royal College Street, London NW1 0TU, UK

²School of Psychological Sciences and Health, University of Strathclyde, Glasgow, UK

This article has been accepted for publication and undergone full peer review but has not been through the copyediting, typesetting, pagination and proofreading process, which may lead to differences between this version and the [Version of Record](#). Please cite this article as [doi: 10.1111/DME.14698](https://doi.org/10.1111/DME.14698)

This article is protected by copyright. All rights reserved

³Diabetes Research Centre, University of Leicester, Leicester, UK

⁴The University of Cambridge Metabolic Research Laboratories, Wellcome Trust-MRC Institute of Metabolic Science, Addenbrooke's Hospital, Cambridge, CB2 0QQ, UK

⁵Institute of Biomedical and Clinical Science, College of Medicine and Health, University of Exeter, RILD Building, Barrack Road, Exeter, EX2 5DW, UK

⁶Aberdeen Cardiovascular & Diabetes Centre, The Rowett Institute, University of Aberdeen, Aberdeen, UK.

⁷Department of Physiology and Pharmacology, Integrative Physiology, Karolinska Institutet, Stockholm, Sweden

⁸Department of Nutritional Sciences, King's College London, UK

⁹Division of Systems Medicine, Ninewells Hospital and Medical School, University of Dundee, Dundee DD1 9SY

¹⁰Wolfson Diabetes and Endocrine Centre, Cambridge University Hospitals NHS Foundation Trust, Cambridge, UK

¹¹Leeds Institute of Cardiovascular and Metabolic Medicine, School of Medicine, University of Leeds, Leeds, UK

Key words: Early career, researchers, diabetes, IDia, pandemic, COVID-19

Word count: 800

Main text:

The COVID-19 pandemic has put diabetes at the forefront of conversation. The prevalence of type 2 diabetes in the UK is high¹ and has links to adverse COVID-19 outcomes². Research investigating the links between these two public health issues are moving at pace. However, the pandemic has seen early career researchers (ECRs) in diabetes face professional and personal

challenges that have the potential to slow down or derail burgeoning careers. These challenges are not unique to ECRs working in the diabetes field - and they compound a challenging decade that included the fallout from an economic crisis and uncertainties arising from a protracted Brexit.

In May 2021, 15 ECRs gathered online as part of the Diabetes UK annual Innovators in Diabetes (IDia) training programme. A discussion on the career challenges faced and possible solutions to facilitate a healthy future for diabetes ECRs was initiated and facilitated by senior leaders in diabetes research. This letter summarises the themes from that discussion.

Challenges faced: Academic career progression: Academic progression is precarious and often without a well-defined career pathway³. Timing is crucial when applying for fellowships or institutional posts with strict criteria related to number of years worked post-PhD. Probationary periods have demanding goals combining research, teaching, clinical and citizenship achievements. ECRs whose career routes are seen as 'non-conventional' (e.g. changing fields, spending time in industry, time off for caring duties) are particularly vulnerable to inflexible criteria. The pandemic's impact; through the redirection of research council and NIHR funding, in combination with reductions to medical research charities income now exceeding £292 million⁴, third level recruitment-freezes and juggling personal and clinical duties will only exacerbate this.

Practical research: The pandemic-associated lockdowns have meant laboratory closures, disruption to support services and an increase in teaching workload due to pivoting from in-person to online teaching. For many ECRs their lab-based research slowed down or halted. Human studies paused due to restrictions and social distancing, studies were redesigned to minimise face-to-face contact and staff were retrained in the use of virtual methods. Research support services such as ethics committees have, rightly, prioritised COVID-19 studies.

Personal and professional development: Navigating teaching duties alongside skills to develop research independence is challenging, resulting in long working hours⁵ which is of concern due to increased risk of burnout and physical health risks⁶. The impact of the additional COVID-19 related pressures are as yet unclear but may be significant⁷. Institutions are facing unprecedented demands on their resources, however support must remain in place to equip ECRs to manage teaching workloads with research time ring-fenced and investment in training in areas such as grant writing, public engagement, and financial and staff management.

Opportunities identified: Long-term funding plans: While the format of the next Research Excellence Framework⁸ is under review, it is imperative that it be cognisant of the diversity of career pathways and the demonstrable benefit of supporting ECRs and the impact COVID-19 will have had. The demonstrable benefit of taking a long-term view of research funding over decades

has ultimately resulted in the UK's successful vaccination programme. Since government allocation of funds is a core part of many universities' funding models, real change must emanate from the government assessment and funding models of UK research and include a long-term view of scientific research funding – which we hope will include financial support to the medical research charities recently affected.

Support networks: The opportunity to network with other researchers is a vital source of support, information and career-direction for ECRs. Networking may happen informally or be formally institutionally facilitated. External organisations, professional conferences and professional and personal development courses also enhance ECRs support-networks. While meetings remain online, we advocate for the inclusion of virtual networking sessions that create new sharing opportunities. We encourage senior members of the research community to consider formal or informal mentoring of ECRs and a repository of names and links be made available.

Employer support: ECRs are employees of research institutions. The introduction of formalised “Tenure Track” schemes across the sector, designed to support ECRs on a path to independence, have been welcome. However, to support ECRs through the COVID-19 pandemic and work to limit its' long-term impact on research careers, institutions should consider that original expectations regarding grant capture or publication set within pre-pandemic timeframes will need to be modified to help mitigate against irrevocable damage to careers.

In summary, with the majority of the adult UK population now vaccinated and restrictions on distancing being eased, there is light at the end of the tunnel. The years ahead will undoubtedly be tough and there will be as yet unrecognised outcomes from the pandemic that will be far-reaching. However, with recognition and support from organisations such as the Diabetes UK IDia programme and intra- and interinstitutional mentorship and training programmes we hope our return to full strength will be facilitated.

References:

1. Karuranga, S., Malanda, B., Saeedi, P. & Salpea, P. IDF Atlas 9th edition and other resources. *International Diabetes Federation 9th editio*, 1–176 (2019).
2. Bakhai, C. *et al.* Associations of type 1 and type 2 diabetes with COVID-19-related mortality in England: a whole-population study. *Artic. Lancet Diabetes Endocrinol* **8**, 813–835 (2020).

- Accepted Article
3. Woolston, C. Wheel of fortune : Uncertain prospects for postdocs. *Nature* **588**, 181–184 (2020).
 4. AMRC. Medical research charities and COVID-19: AMRC’s response and key guidance. (2020). Available at: <https://www.amrc.org.uk/blog/medical-research-charities-and-covid-19-amrcs-response-and-key-guidance>.
 5. Sang, K., Powell, A., Finkel, R. & Richards, J. ‘Being an academic is not a 9–5 job’: long working hours and the ‘ideal worker’ in UK academia. <https://doi.org/10.1080/10301763.2015.1081723> **25**, 235–249 (2015).
 6. Conway, S. H., Pompeii, L. A., Gimeno Ruiz de Porras, D., Follis, J. L. & Roberts, R. E. The Identification of a Threshold of Long Work Hours for Predicting Elevated Risks of Adverse Health Outcomes. *Am. J. Epidemiol.* **186**, 173–183 (2017).
 7. Gewin, V. Pandemic burnout is rampant in academia. *Nature* **591**, 489–491 (2021).
 8. Research Excellence Framework. Home - REF 2021. (2021). Available at: <https://www.ref.ac.uk/>. (Accessed: 2nd August 2021)