

This article explores how the sudden unanticipated closure of research facilities in March 2020 due to the Covid-19 pandemic has impacted on the research community, especially on early career researchers. It focuses in particular on the effects of reduced mobility.

In Ireland, as in other countries globally, the impact of the Covid-19 pandemic and associated travel restrictions on research activities has been very significant. Indeed, it is now clear that the disruption will extend into 2021, and perhaps beyond, depending on progress in vaccine development and distribution.

In 2020, all across the research system in Ireland, research teams adapted to working in new ways, with discussions taking place on virtual forums that provided a welcome space to share and challenge ideas. Depending on the discipline, some researchers were able to continue their projects with relatively minor disruption, perhaps working at a desk at home instead of in a school or research institute. In other disciplines, where access to library resources or laboratory or other specialist facilities is essential to progress the research, the impact was more dramatic.

Nevertheless, in all cases, the overnight move to remote working, and the loss of opportunities to bounce around ideas informally and share the highs and lows of research, reflects a dramatic alteration of the research process and experience. This reduction in informal interaction and communication has inevitably affected early career researchers – PhD students and postdoctoral researchers – at a critical point in their careers.

Clearly, where access to library collections or artefacts elsewhere is a central element of researchers' projects, the capacity to progress their research is severely limited for now. And the impact is disproportionately serious for early career researchers, who are at a crucial part of their career, and where postponing a visit for a year may not be feasible due to their funding timescale.

### Reduced mobility

One of the principal negative impacts experienced by early career researchers is on their mobility and their opportunity to spend time with other research teams internationally, undertaking key

# The Impact of the Pandemic on Early Career Researchers

How researchers have been affected by Covid-19-related travel constraints and other issues



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experiments and learning new approaches. Spending three months in a leading international team can be a career-defining opportunity for early career researchers, especially PhD students who take up employment on graduation and do not remain in academia. This is their sole opportunity to see how research operates in other environments.

In my experience, most early career researchers who undertake an international placement come back pleasantly surprised at the effectiveness of the Irish research system. This, in itself, is an important learning! The networks they develop through short, 3-6-month exchanges often stay with them for their whole career. Opportunities to travel that are supported by the European Commission, Fulbright, and other programmes can be critical in shaping their subsequent career.

While it is clear that the current travel restrictions affect all researchers, for established investigators this is a temporary issue; in time, they will be able to reach out again to visit colleagues internationally. For early career researchers, however, there is a critical narrow window of just a few years when they have opportunities to develop their expertise, grow their network, and establish competitive CVs. The impacts on mobility for this group, at the very point in their career when they are carefully planning next steps with an eye on long-term goals, is a significant concern, and very unsettling in the context of a career path where it can be difficult to anticipate what, when, and where future opportunities might open up.

“ For early career researchers, the impacts of COVID-19 on mobility is a significant concern, and very unsettling in the context of finding their career path.

Early career researchers typically plan how they will develop their research careers in terms of both time and location – moving to specific places to gain specific expertise or undertake specific experiments. Disruption of these plans due to the pandemic is enormously unsettling for them.

Though employment has continued throughout the closure, their inability to undertake specific elements of research, especially time-sensitive elements, is likely to affect their research outputs, including publications.

Many of our young researchers were close to completing their current contracts and were anticipating moving to other research teams internationally as a key next step in their careers. This path is now on hold depending on location, and for researchers with families the challenge is even greater.

The travel restrictions associated with the Covid-19 pandemic have also impacted on the mobility of more experienced researchers in tenured academic positions. For these researchers, however, it is a temporary disruption: what does not happen in 2020 will likely happen a year or two later. For early career researchers, the opportunity may be lost completely if travel in 2020 is missed.

It is also important to note that the need for universities to pivot their teaching missions to online and blended learning has significantly increased the workload of more senior researchers and academics. This affects the time they have available to work with research teams and to mentor early career researchers through these unprecedented challenges.

## Impact on informal interactions

Travelling to conferences is a key aspect of a research career. It is fair to say that many of us were amazed at how effectively the research community has migrated to online conferences and seminars as an alternative mechanism for sharing research results, while saving hours that would have been spent getting to the locations. One of the positive outcomes of the pandemic is the hope that we embrace the advantages of the virtual environment for certain meetings even when it is no longer essential, thus facilitating much greater participation at events and conferences.

But there is a downside. Often the most valuable part of meetings and conferences is not the formal part – the contents, lectures, and presentations – but the informal discussions that happen over coffee before and after the meeting, the unintended exchanges where serendipity brings opportunity that cannot be orchestrated remotely. It seems to me that this is the strongest rationale for returning to international travel after Covid-19.

The planned communications and the transactional elements of research interactions can be conducted effectively in a virtual environment, but it is not possible to orchestrate unplanned side conversations and chance encounters, which are often the most valuable elements of international engagements. Opportunities are created by finding someone with a complementary expertise that catalyses you to look at something in a completely different way. The challenges to one's thinking, the opening of new opportunities in travelling to a meeting or seminar: I fail to see how these can be reproduced effectively online.

It is important to acknowledge and welcome the flexibility offered by funding agencies that enables researchers to adjust budgets to facilitate no-cost extensions, together with other initiatives that provide funding for costed extensions for awards. In many cases, this flexibility will allow early career researchers to complete important elements of their projects, publish their results, and mitigate, to some extent, the impacts of the pandemic and the associated closure and travel restrictions.

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## Gender dimension

There cannot be many elements that cannot be readily addressed. For example, researchers with young children or other caring responsibilities were unable to work remotely, and though access to labs and so on was possible after a few months, in many cases childcare facilities were closed for much longer. International evidence increasingly highlights the gendered aspect of these challenges, which have their greatest impacts on researchers at an early career stage.

Given enough notice, most researchers could have planned effectively for two or three months of desk work from home. But the sudden unanticipated closure did not provide the luxury of planning ahead. So, while many early career researchers were able to focus on writing papers or analysing data, for others the closure happened at a time when they were unable to use their time as productively. Acknowledging the different individual experiences at this time is very important in supporting our research community.

### Researcher careers moving forward

What can be done to support our early career researchers and minimise the impact of the pandemic on their future careers? A key intervention is the delivery of effective mentorship by those in leadership positions – watching out for opportunities where each researcher can be supported in achieving their career goals, albeit via a potentially altered path in a post-Covid-19 world.

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In the coming years, evaluating the CVs of early career researchers as part of selection committees or grant review panels must be done through the lens of the pandemic and its ramifications. The question must be asked: Was the productivity of an early career researcher impacted by the constraints imposed by the pandemic? There may be merit in allowing them to articulate the impacts of the pandemic on their experience when applying for positions or funding opportunities, mirroring the way that parental leave is taken into consideration in many competitions today.

Whatever steps are taken to mitigate the impacts of the pandemic on our early career researcher community, it is essential that they are identified quickly and implemented effectively, not only to protect the next generation of research leaders but also to help ensure the future effectiveness of the research and innovation ecosystem. Our ability to stave off the worst effects of the next pandemic depend on it.

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