How publishers and editors can help early career researchers: Recommendations from a roundtable discussion

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Key points
- Hearing the views of early career researchers (ECRs) provides valuable insights and is a worthwhile investment for publishers.
- Understanding the time and relationship issues that ECRs face can help publishers develop better systems and services.
- Talking to ECRs demonstrates a frustration that the editing, peer reviewing, and publishing ecosystem is built by people with whom they do not identify and by whom they are not represented.
- There is a greater role for journal editors to offer support, advice, and encouragement to ECRs.
- ECRs want journals to take more of a lead in promoting open science and supporting novel research outputs.
- There is a need for publishers to develop tools and systems that simplify journal requirements and help ECRs to publish.

INTRODUCTION

The world is producing more PhDs than ever before (Cyranoski, Gilbert, Ledford, Nayar, & Yahia, 2011). With more early career researchers (ECRs) comes more research, so these individuals are critical to the future of research (and to the publication of that research). However, with editorial boards often dominated by a more senior scientific generation, how do we ensure that our journals meet the needs and represent the opinions of ECRs? We set out to make research publishing a better experience for the world’s ECRs by listening to their thoughts and practical recommendations, made by ECRs, for journal editors-in-chief, publishers, and societies that publish.

ECRs are the newest cohort of researchers (Nicholas, Watkinson, et al., 2017) and are a large cohort. Like their more-established counterparts, they are under considerable pressure to publish, but ECRs need to gain a good scholarly standing from their work rather than just maintain that standing. Many ECRs report they are unsure about how best to approach the publishing process (Glover et al., 2016). As journal publishing remains, by a long way, the main method of research dissemination (Nicholas, Rodríguez-Bravo, et al., 2017), it is crucial that we recognize the issues ECRs face and that we identify the ways in which we, as publishers, can ease and improve their experience.

Research into the views of ECRs has reported that many are open to changes in how they conduct and publish their research, although traditional behaviours of established, senior academics still appear to prevail. According to Nicholas, Watkinson, et al. (2017), ECRs ‘have little choice but to abide by the established rules, at least until these are changed’, with many ECRs conventionally following well-used publishing routes chosen by their seniors. There is evidence of enthusiasm among ECRs for more open research practices and greater transparency (Nicholas et al., 2018), but ECRs also report that the opportunity for change is currently limited: They perceive their position to be precarious as research ‘apprentices’ and may be less able to take risks with new approaches. To give ECRs what they need from research journals, we must, as publishers, identify the main problems ECRs face today and then create
practical ways to aid them in their publishing. Ultimately, this will help facilitate the creation of genuine, high-quality research. This is what we set out to start by asking ECRs directly.

METHODS

We set out to hear, first hand, the pains and gains expressed by ECRs about the research endeavour and to respond to those with a set of recommendations for research journal editors, publishers, and societies that publish. For the purposes of this study, we defined ECRs as postdoctoral researchers who were 3–5 years into their research career. Through a combination of direct approaches and open calls for participants at a few UK institutions, we recruited a panel of nine ECRs and collected their observations during a structured roundtable discussion, facilitated but not led by Wiley colleagues and a professional cartoonist. The ECRs who joined us had together published a total of 42 papers across a total of 33 peer reviewed journals (according to records in Clarivate's Web of Science). So, each of our participants had experience in publishing an average of five papers and of working with an average of four journals. Although we secured more participants via open calls than direct invitations, all participants were women researchers. This was by accident rather than by design. Nine research disciplines were represented, across STEM and SSH subjects.

The discussion was structured in three parts: 'Finding your Research Idea', 'Doing Your Research', and 'Sharing your New Knowledge'. Our ECR panel shared insights that we collated under 12 headings: time, research ethics, funding, impact bias, open research, access, information overload, getting published, writing and publishing tools, peer review, diversity, collaboration, and competition. From these insights, we derived a unique set of recommendations and progressive goals for journal editors-in-chief, publishers, and societies that publish.

We used a structured question framework at a roundtable meeting to map the research endeavour and identify the pains and gains inherent in the publishing process for ECRs. The discussion was structured sequentially in three parts: 'Finding your Research Idea', 'Doing Your Research', and 'Sharing your New Knowledge'. Participants were asked to work alone for around 10 min on one of these questions, highlighting pains and gains in each section on Post-It Notes, which were then mapped on a whiteboard. A Wiley colleague summarized visible themes (multiple responses) and then opened the floor to a wider group discussion (Fig. 1). The process was repeated for each question.

Prior to the main event, we road-tested the idea and format with Wiley colleagues (Cassidy, 2018) – we were conscious that we were asking ECRs to give up a whole day of their research time and so wanted to be sure to honour this time commitment by offering the best experience possible. The road test involved gathering a group of Wiley colleagues who had worked as researchers in the recent past, presenting them with the same questions as for the main event, and offering the same facilitated discussion. From this trial event, we learned that our format was good, but our timing was off, and this resulted in our adding more time to the schedule. For the roundtable itself, we invited three

![FIGURE 1](Image)

Participants were asked to highlight pains and gains in each section, which resulted in wider group discussion.
researchers individually and recruited an additional six ECRs from a number of UK institutions with a variety of academic positions (Table 1) and disciplines (Table 2). We acknowledge that we were only partly successful in drawing together a diverse participant pool. We achieved diversity in subject discipline but not in gender: we only received positive responses to our invitations from women. It should also be noted that some aspects of the feedback gathered will be specific to the country in which an individual ECR works, for example, aspects of funding. We collected and collated what they shared and derived recommendations for editors-in-chief, publishers, and journal teams. We worked during the session with a cartoonist to capture our thoughts live. Some of those cartoons are included in this report.

FINDINGS

The findings identified by participants are presented below. Publishers, societies, and editors-in-chief together can address some of these issues directly (e.g. finding and accessing content and sharing data). Other issues identified were bigger problems within research, academia, and research communication (e.g. negative supervisor relationships and experiments that do not work). Each pain and gain was identified by multiple people (and some were both pains and gains, such as open access and research funding) and included:

- The publishing process – particularly formatting and general speed concerns.

**TABLE 1** Academic positions of the ECRs who participated.

| Position                      |
|-------------------------------|
| Postdoctoral Research Associate |
| Postdoctoral Training Fellow   |
| Research Associate            |
| Research Fellow               |
| Senior Research Associate     |
| Teaching Fellow               |
| Tutor                         |

**TABLE 2** Disciplines represented by the ECRs who participated.

| Discipline                          |
|------------------------------------|
| Ancient History                    |
| Social Policy and Intervention     |
| Electrical and Electronic Engineering |
| Evolution, Ecology, and Behaviour  |
| History of Art and Architecture    |
| Molecular Biology                  |
| Patient Safety and Translational Research |
| Psychology                         |
| Physical Sciences                  |

- Finding a research idea and knowing that it is original.
- Funding limitations.
- Working on deadlines and the administrative effort associated with research.
- Diversity and the lack of it.
- Fear of being scooped.
- Fear of public speaking.
- Feelings of accomplishment and 'Eureka moments'.

The sections that follow report the ideas expressed by roundtable participants. When we refer to ECRs in these sections, we refer to the roundtable participants. We recognize that our sample was small and that this may limit the generalizability of the observations captured.

Key findings

- ECR concerns are broadly the same across varied fields of interest and research.
- They are keen to make a difference in the publication experience and are often at the forefront of driving change.
- They feel the same, possibly greater, pressures with regard to rate of publication, funding struggles, and gaining acceptance from established academics within their research areas.
- Integrity is a priority among ECRs, and unethical or unsupportive behaviour from colleagues and authority figures results in poor morale.

Time

One of the overriding difficulties discussed by ECRs was the problem of insufficient time. This affected all stages of the research and publication process, from the initial stages of developing a new idea right up to submission.

The pace of publication was raised as a concern – there is enormous pressure to ‘publish or perish’ (Fig. 2). ECRs face real difficulties in getting enough work out there to create a strong early résumé, and deadline constraints often impinge on the perceived quality of their own output.

ECRs struggle with the expectation of long working hours from their principal investigators/departments. There is a feeling that they should always be doing something, either reading, writing, or promoting their own work. This affords them very few opportunities for real ‘downtime’ and creates conflict in work–life integration. Demands on present-day ECRs’ time are not the same as those experienced by today’s more senior academics when they were at the start of their careers, for example, the expectation that those in labs promote their work via social media accounts.

Ultimately, the common problem appears to be a lack of skills that could be gained by training in time management. In contrast to a typical office environment, where employees are trained in communication and efficiency skills, this is not common in academia. ECRs report feeling overwhelmed by the amount that is
expected from them at any given time – this is compounded by a lack of basic workload management training.

Research ethics

ECRs recognize the importance of research ethics and research ethics approval (e.g. for studies involving people and animals).

They recognize the related need for informed consent from research participants and that new open research expectations and practices (e.g. data sharing) bring with them additional ethical considerations. They view research ethics approval as a necessary, albeit cumbersome, and bureaucratic process.

Conversely, there is the persistent problem of ideas poaching, although this is not exclusive to ECRs. However, in a world where emerging academics are often pushed or encouraged to collaborate and share more than their senior colleagues might have, ECRs perceive the potential for scooping to be a particular problem. This problem may be intensified in fields where the pressure for fast publication is greatest.

This can encourage game playing among ECRs against their principles, and at the embryonic point in a career, this leaves them grappling with very real ethics questions, knowing that they may not advance as they wish to if they do not turn their backs on some of their core principles.

Funding

Similar to established researchers, ECRs measure their research output and success by their publication activity. They are assessed by it, too. They must demonstrate that their work is ongoing, and they are becoming increasingly aware of preprint servers to do this without delay. In some disciplines, they meet their reporting deadlines by posting their work to preprint servers prior to submitting to journals.

ECRs express concerns that funder needs shape research ideas. They recognize that securing research funds requires effort
and paperwork and that the timing of this is important. They are positive about the opportunities created for them by research funding – particularly funding designed expressly for ECRs. They understand the need for funding to support dissemination of research to the public.

ECRs think funders attempt to incentivize collaboration (and interdisciplinarity) but that this conflicts with working practices among established, senior researchers who want to pursue their own research agenda (rather than to support collaborative work with ECRs) and who have a publication record that helps them secure further funding. This approach conflicts with funder ambitions for collaboration and interdisciplinarity. ECRs see the academic promotion system, based on publications, as out of line with what funders want.

ECRs would like to work with more interdisciplinary ideas; however, it is often almost impossible to receive validation and funding for projects that span various fields of research (Fig. 3). Not only does the institution or the funder have to be supportive, but it must also persuade co-authors who may be less willing to share the credit.

ECRs across disciplines can face problems when principal investigators/supervisors hold up their research. Principal investigators often favour topics in their own area of expertise, leaving ECRs to find their own path through the process, feeling unsupported. As such, this is a barrier to timely publication as the principal investigator/senior researcher does not prioritize getting ECR research out.

ECRs recognize that funders (and other organizations, including universities and publishers) support and launch new journals to disrupt traditional journals. They appreciate the innovative approaches to research publishing (including peer review) that these new journals provide.

**Impact bias**

ECRs place value on journal reputation – but need guidance to assess that, so they can choose where to publish. They note that journal reputation can correlate with impact factor and, similar to established researchers, feel pressure to publish in high-impact journals.

ECRs know that research assessment exercises, like the UK Research Excellence Framework, require narrative impact case studies that take emphasis away from articles in high impact factor journals, but they recognize that, despite this, there remains an incentive to publish in high-impact ‘glamour’ journals. They are most proud when they publish in journals with good reputations.

ECRs recognize that publishing well-executed research that has reliable but not paradigm-changing results is good research practice (whether those results are positive, negative, or inconclusive) – but they need support to publish this. They recognize that this support will not come from so-called glamour journals. Similarly, they believe that it is a struggle to publish research that takes an unusual approach (perhaps by using techniques from a different discipline) or that delivers unexpected results (that challenge the status quo).

**Open research**

There are several problems inherent within the concept of data sharing. ECRs struggle with questions around ethics, consent, resources (how-to), and any associated costs (e.g. paying to reuse their own work).

Although innovations like Registered Reports may not work in every discipline, many ECRs would welcome the opportunity to be able to publish these types of article. Not enough publishers and journals offer the chance for this, although in some fields, Registered Reports are becoming a recognized method to publish research papers.

ECRs have a collective interest in reproducibility (Fig. 4) but remain unsure about when access should be made available to research data and code. They suggest that journals should request this during the peer review process to make sure it happens. Furthermore, they suggest that journals (perhaps via their peer reviewers) should ask for missing links to data and validate that the links work.

**Access**

ECRs follow familiar paths when developing their research ideas. They aim to work on innovative ideas that fill knowledge gaps. They scope their work with background reading, sometimes in unfamiliar research territory, and aim to choose ideas that other researchers have not already addressed, asking themselves ‘Has someone done this before?’ They can be challenged by having too many research ideas and may adopt a rather narrow focus to overcome this. They consider whether they will be able to publish
the results of their idea in a high-impact journal, and this influences which ideas they choose to pursue.

To develop their research ideas, ECRs need access to research journals. They recognize the lack of open access as a challenge. They appreciate what open access journals and publishers are doing. They value academic networking sites like ResearchGate as a place to gain access. Similar to established researchers, they need ways to judge the quality of the previous research they access, wherever they access it.

A key problem facing ECRs lies in accessing older, archived publications. If their institution does not provide access, then ECRs must bear the cost themselves, and this is not always possible. For researchers at smaller or less well-funded institutions, this can be a barrier to exploring new research ideas.

ECRs enjoy learning about new areas and the work they can do to bring new ideas to life (Fig. 5). At the same time, ECRs can become fatigued with a narrow restrictive focus, and they feel pressure to focus on something new.

‘Idea fatigue’ was also highlighted as a pain point by ECRs. Towards the end of the research process and the beginning of the publication process, they want to gain closure for their current research topic and are eager to move on to something new. As such, long waits for acceptance and peer review can be frustrating.

Information overload

ECRs are diligent in reviewing the existing literature. They acknowledge that a research idea cannot come from skim-reading abstracts but from the tiniest detail found across four or five other papers. ECRs believe they are often more up to date on the literature than many principal investigators. However, they frequently have less confidence in their own research path and easily fall victim to information overload because of the many channels to new information and the ever-increasing growth of research output. ECRs would appreciate more opportunities, for example, at conferences, to meet with journal editors, to seek out tailored advice to help shape their research question.

To keep up with developments in their field, ECRs feel the pressure to read as much new research and as many new publications as possible while recognizing it is largely impossible to keep up with all the content being published. This can lead to a sense of failure – that they are not being ‘good enough academics’. It also means that they are often uncertain whether their new research idea has already been published by someone else. ECRs feel guilty about a lack of time available for reading, often resulting in cramming ahead of projects/deadlines. Some try to share the load via Journal Clubs. For others, Journal Clubs were a new idea, and it was suggested that the (re)introduction of Journal Clubs could enable ECRs to stay on top of the literature, build networks, and develop critical review skills.

ECRs develop their own systems to stay informed of progress in their field of study and use sophisticated processes and tools to do so (e.g. an initial triage skim read, followed by PDF annotation, and then use of OneNote). ECRs want a simple and accurate system of tracking papers they have read: one had created a bespoke logging system, and another tried to use Mendeley for this purpose. Is there room in this already crowded market for a new software tool to help?

Regarding routes to content, journal tables of content are not favoured by ECRs as a path to finding the right research. Poster sessions at conferences are more popular and may mitigate the ‘selection effect’. Many feel a responsibility to assist their peers by sharing critical papers, often at an early stage through the use of preprint servers, rather than waiting for the final published article.

Getting published

ECRs value and enjoy writing and rewriting during the publishing process. They gain satisfaction from crystallizing their ideas and seeing their research come together. When they publish, they value the subsequent pause point. They celebrate the feeling of completion before moving on to the next project.

ECRs feel they are expected to have an inherent knowledge and understanding of the publishing process. It is mission-critical for them as it is for established researchers. They feel the same pressure to publish and to create an output from their research. They face long delays when they try to publish their work and are unhappy when they are not given progress updates by journals. They think that word limits set by journals are unnecessary and perhaps harmful because restrictions suggest higher value is placed on studies that can be described in shorter articles (e.g. quantitative studies may be favoured over qualitative studies that require longer descriptions).

ECRs realize the privilege of being an academic, in that they can forge a career and a living from a subject about which they are passionate, that holds their interest, and that they view as exciting. They value their own subject expertise and the
recognition that comes from within their discipline. They recognize the opportunities that are available and proactively work towards career progression in their field, despite the many challenges they face. ECRs also value being the drivers of positive change, through contributions from their work to policy and policy change and by finding out that their research has helped an individual or a community.

When ECRs publish, they appreciate the closure and the completion of a piece of work that the act of publication indicates. They appreciate seeing their work in the public domain and the recognition they gain from publication (particularly peer reviewed publication). However, they receive little support with press coverage, promotion of their research, or in engagement via social media from their universities. They are concerned about high open access article publication charges.

ECRs enjoy and value the opportunity to make a positive impact by doing their research. They consider being a researcher and an academic to be a great privilege. They value research publications as a window into research data, both into their own new methods and data (i.e. publishing brings them an opportunity to clarify their message, make their data understandable and relatable, and communicate it) and as a window into other researchers’ new methods and data. ECRs appreciate research articles as a way to tell their research story and to share their perspectives.

**Writing and publishing tools**

ECRs believe they are expected to understand the publishing process, although few are taught about it, with most learning only through personal experience. This is a significant pain point.

ECRs have altruistic motivations for writing, as well as the obvious career benefits. They enjoy the process of writing a paper; they want to share their perspective and to make a difference/impact in their subject area. The process of writing offers them the opportunity to clarify the message arising from their research and allows them to demonstrate their knowledge.

There is confusion over the expected level of output for today’s ECRs. How many articles should an ECR produce in a year for them to be competitive within their discipline? For some, this lack of clarity, alongside the pressure to publish, is paralysing; for others, it results in hyperproduction and burnout.

ECRs often prefer to present papers at workshops rather than conferences as papers presented at these smaller events can subsequently be submitted to journals (they do not count as publications).

Formatting manuscripts for journals is a major source of frustration (Fig. 6), and a universal, simple standard across publishers could be a solution. This would also eliminate the pain of reformatting following rejection and resubmission to an alternative journal. ECRs are frustrated by overly strict guidance on the production of figures. They think referencing software is clunky, out of date, and can vary wildly in quality. Word limits also vary wildly, with ECRs questioning the need for any word limits in an online publishing environment (and noting that they are a major disincentive to the production of qualitative work). Juggling the demands for formatting, references, figures, and word counts from different publications is a major time sink: ECRs think publishers should take this burden from them.

ECRs may face difficult political decisions over authorship, exacerbated by uncooperative collaborators. Academic politics...
can be a struggle. Publisher involvement here may be useful: some journals acknowledge individual contributions, as well as authorship, using initiatives like CREDIT from CASRAI, and this may address the problem in part. Lengthy delays in response times from co-authors are also a major problem, with many ECRs fearing it impolitic to chase more senior collaborators.

**Peer review**

ECRs spoke at length about their need for ‘academic kindness’ as they navigate through the early stages of their research careers. In receiving reviews of their own work, they hope for a fullness of explanation, honesty, and the willingness on the part of their referee to help improve their research output. A phrase one ECR used – to much agreement – when setting out her expectations of peer review, she wants peer review that offers the ‘sh*t sandwich’: some points for improvement are expected, but it can also help improve articles if the positives are also clearly highlighted. ECRs made a case for editors-in-chief to ask reviewers to highlight the positives that they see during peer review, as well as showing where improvements can be made.

Offering better, fuller reviewer reports to ECRs will also offer a model for emulation: ECRs spoke of their willingness – but also a lack of experience – in writing reviews of colleagues’ work. Senior academics sometimes lean heavily on ECRs to undertake their reviews but are not committed to teaching ECRs the skills they need as peer reviewers.

All agreed that there is a role for publishers in providing more assistance/training/support for ECRs with peer review; reviewing workshops were particularly popular among the ideas floated. Perhaps there is also a case for rethinking how peer review works: ‘peer review comes at exactly the wrong time’, when researchers have spent their funding and collected the data, only then to be told that their study design was poor.

One ECR described ‘shopping’ for publication in a journal: first writing the paper and then shopping for the right journal before it finds its ‘forever home’. Journals should not be so selective that they no longer serve the community but serve only their own purposes (journals as elitist gatekeepers).

ECRs see little consistency or clarity of decision-making by editors; two papers from the same research study and of a similar quality can end up in two journals with widely varying impact factors. ECRs would like to see the decision-making process de-mystified. Speed of review is also a commonly recognized problem. Decision-making by editors can be too slow for ambitious ECRs (such as more experienced researchers) who are under increased pressure to publish. Regular progress updates on articles throughout peer review should be the lowest level of service offering for ECRs and all researchers.

As well as speed, ECRs see the ‘infinite loop’ of submission – rejection – reformat – resubmission as a significant problem. Formatting matters should be sufficiently uniform or handled by the publisher (rather than the researcher) so that peer review focuses solely on content. One ECR described a regular strategy in her discipline to anticipate reviewer questions and comments, and deliberately to provoke them, so that you are ready to address them immediately upon receipt of a revise and resubmit decision – thereby distracting reviewers’ attention from any errors that the authors themselves have failed to identify prior to submission.

Our ECRs led the conversation expressing universal enthusiasm for double-blind peer review: ‘It is a must’, but it is not the standard. ECRs respond positively to newer peer reviewed publishing models such as, for example, the experiments in peer review that eLife offer (where a handling editor writes a consensus response on a paper following a call with reviewers).

**Diversity**

ECRs feel that their limited involvement in peer review and publishing means the pool of those doing this work is limited, and editors tend to recruit editorial teams and reviewers in their own image. There was much discussion about the impact of the ‘echo chamber’, or the selection effect, on current working methods. Despite an increasing drive for interdisciplinarity, ECRs are still encouraged to work within their silos. They trust the authors whose research they know.

ECRs believe the editing, peer reviewing, and publishing ecosystem is built by people with whom they do not identify and by whom they are not represented (e.g. by gender or by race). There was a consensus that senior researchers are not consciously working to protect that ecosystem but do so subconsciously by promoting within their own ranks and recruiting in their own image (Fig. 7). ECRs report a more representative/diverse workforce among their peers than they see at more senior levels in academia. Interestingly, although our invitation to participate in

![FIGURE 7](https://via.placeholder.com/150)

ECRs believe the editing, peer reviewing, and publishing ecosystem is built by people with whom they do not identify and by whom they are not represented.
the ECR event was issued widely, only women researchers responded positively and attended as mentioned above. There were no male participants.

ECRs note the differences in the research experiences of men and women. They report the impact of negative internal chatter about gender, fear of being the one person to ‘make a fuss’, and imposter syndrome. The lack of gender diversity at our event means we cannot draw conclusions about whether these are more common experiences for women researchers than for men, but our ECRs also articulated the negative impact on all, irrespective of gender. They suggest that male researchers do have opinions on these issues but generally choose not to voice them. They also suggest that perhaps the stakes are lower for men because ‘men are more easily forgiven their mistakes’ and because men can look to the senior researchers above them and see people who look like them and a ‘clear path to the top’. The expectation of long working hours for researchers was considered discriminatory against women researchers – who frequently bear the greater weight of family responsibility – by our ECRs.

Diversity on editorial boards is crucial to the advancement of research and of women and other groups who are not adequately represented in research. Many look to the ranks above them in the hierarchy and see only male examples. This has wider impact when publication records influence career progression. This could, in part, be mitigated by journals offering clear and unambiguous diversity statements.

Collaboration and competition

‘True collaboration is really wonderful, but I have never worked with a senior academic who truly values collaboration. The funders want it’ (Fig. 8). Our ECRs shared a view that senior academics want the money to further their own research agenda. This can mean an individual ECR’s experience of research and authorship can be very limiting; ECRs described information not being shared even inside of a collaborative interdisciplinary working group. ECRs believe the peer reviewed publishing system and the promotion system to be out of step with what funders want.

ECRs struggle to publish any research that goes against the received wisdom within their field. Despite a strong argument or a sound principle, the fact that ECRs are not yet established works against them when they attempt to bring something new to the table. They link this to the idea of ‘gatekeeping’ that is so problematic in the ECR career path, where more senior academics refuse to allow them space for a seat at the table.

In the same vein, putting forward new methodologies can also be poorly received. ECRs report that finding a new way of doing something is often seen as rejecting tradition or as an overstepping of boundaries. As such, inefficiencies are being carried forward, and new methodological developments are at risk of being ignored.

ECRs make good use of conferences to scope out the competition and seek potential collaborators. They report widespread use of Twitter for discovering new, hot key emerging research and emerging researchers.

RECOMMENDATIONS

From the discussion above, and directly in response to observations shared by the roundtable participants, we make these recommendations, expressed as goals for publishers and societies that publish and as goals for editors-in-chief. They represent progression for all of us involved in research publishing and describe an approach to research publishing that is within reach.

Key recommendations

- Publishers and societies must make changes to facilitate easier, more effective publishing for ECRs.
- Editors-in-chief play a critical role in the level of support offered by individual journals.
- Publishers have a duty of care to provide a supportive and efficient publication process.

Goals for publishers and for societies that publish

- Manage publishing business models so that publishing does not create an undue financial burden for ECRs. Business models must be transparent and choices clear.
- Make accessing research journals and archived materials as easy as possible.
- Think of any one journal as part of an ecosystem, access to the whole of which (i.e. beyond any one journal, beyond any one publisher) is what is important to ECRs.
- Help ECRs with information overload and time management.
o Consider offering journal clinics – or ways to track and round up all newly published content in a specific discipline – in a single, accessible format.

o Consider ways to contribute to time management training for researchers.

• Take stock of innovations and experiments (e.g. in journals launched by or supported directly by research funders); identify what is working; experiment with similar ideas in a carefully directed and managed way; and build robust, scalable ways to deliver the best of those innovations into normal practice.

• Create opportunities for communication between ECRs and editors. In particular, address how to identify when and whether ideas are good to work up and submit; how to communicate research that goes against the grain; and how to know when a paper is complete and to stop writing.

• Address the speed of publication and offer all a best possible author experience by providing regular, clear updates throughout.

• Promote kindness in peer review.

• Standardize formatting requirements and/or alleviate the burden of specific formatting requirements on authors.

• Relax word limits – or at least review their appropriateness.

• Look at functionality and uptake of Registered Reports.

• Publish clear guidelines for authors on data sharing and make publishing ethics guidance easily discoverable.

• Develop better software for writing and publishing.

• Get editors on board to support new research methodologies and to encourage interdisciplinary work.

• Recognize the work of ECRs and consider creating initiatives specifically for ECRs: ECR prizes, ECR essay recognition, ECR editorial boards.

• Support ECRs in their quest for impact, including via social media promotion/press releases. Support ECRs as they engage on social media and with other forms of media.

• At conferences, create opportunities for editors-in-chief and publishers to engage with ECRs. Consider holding careers sessions with editors and flash reviews sessions focusing on research (flash reviews are growing in number and popularity – the British Ecological Society is one example of a group doing good work in this area). Consider publishing development tracks for ECRs, for example:

  o Review school, to equip ECRs with the critical appraisal skills needed when they act as peer reviewers;

  o Editor school, to prepare ECRs for senior roles at journals and increase diversity in journal teams; and

  o Publishing 101, an overview of the journal publishing process as a whole specifically designed for ECRs.

• Nurture ECR talent within journal teams, so ECRs can be part of how journals work and change (e.g. to address bias, including impact bias).

• Be more available for and accessible to ECRs – possibly via specialized sessions at conferences. This would facilitate discussion of grey areas that might be subject-specific, for example, the ideal output for an ECR; shaping a research question from an early stage (and redirecting those that are taking a wrong turn before it is too late); and guidance on academic politics. Could also offer ‘flash reviews’. ECRs use conferences to scope competition/seek collaborators, so this is rich commissioning ground for editors-in-chief.

• Evaluate research for publication based on the strength of the idea, its methods, and its execution at least as much as how exciting the results are.

• Continually reflect on whether their journal’s selectivity criteria serve the community or whether the journal consciously or unconsciously excludes any community (e.g. ECRs, women researchers, those from BAME background). Appoint ECRs to inform this process – possibly in the form of an ECR Editorial Board.

• Continue to require researchers to report, within their articles, a record of research ethics approval wherever that is relevant.

• Continue to focus on journal reputation because this is what ECRs base their choices on. Focus on new ways to measure and communicate journal reputation in addition to impact factors.

• View early publication via preprint servers as a positive innovation.

• Celebrate publications from ECRs. Encourage acknowledgement of ECR contribution to published papers among the authorship of their journal. A standard specific question could be introduced at submission, around the acknowledgement of all contributors (e.g. more widespread adoption of the CREDIT taxonomy).

CONCLUSION

Today’s ECRs will soon become established researchers. Tomorrow’s ECRs will have new needs. This is perhaps our biggest challenge: to keep learning from each subsequent generation of researchers, so we continue to deliver relevant services and value to those researchers. The ECRs we spoke with reported pains and gains through their research work, from the stage at which they conceive a research idea, through their work to begin and complete a research project, and onwards to sharing and communicating their work in ways that achieve maximal impact. What they told us reinforces findings from work by others (Glover et al., 2016; Nicholas, Rodríguez-Bravo, et al., 2017; Nicholas, Watkinson, et al., 2017; Nicholas et al., 2018). What is unique about our work is that we derived a set of recommendations for practical steps that editors, publishers, and societies that publish, likely working in collaboration, can take to ensure they keep up with the evolving needs of researchers. This is important. First, researchers (including ECRs) need support to thrive in their research careers. Second, we (publishers and editors) need to
remain relevant, and it is only by listening to and acting on the needs expressed by researchers that we can do this.

Many research projects conclude with a suggestion that ‘more research is required’. Our project is the same, and for good reason. This generation of ECRs will become our next generation of established researchers, and a new cohort of ECRs will arrive. Tomorrow’s ECRs will also experience pains and gains. Some of these will be similar to those expressed by today’s ECRs; others will be new. We will need to understand what the priorities are from the ECRs’ point of view, to discover and address those new pains and gains, and to keep doing that. This is perhaps our biggest collective challenge, to keep on learning and moving, retaining what is good right now about research publishing, and evolving or discarding the things that we could do better for the researchers we serve.

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CONFLICT OF INTEREST

All authors are employed by Wiley.

REFERENCES

Cassidy, G. (2018). How should journals adapt to the needs of the next generation of researchers? The Wiley Network [Web log post]. Retrieved from https://hub.wiley.com/community/exchanges/discover/blog/2018/03/21/how-should-journals-adapt-to-the-needs-of-the-next-generation-of-researchers

Cyranoski, D., Gilbert, N., Ledford, H., Nayar, A., & Yahia, M. (2011). Education: The PhD factory. Nature, 472, 276–279. https://doi.org/10.1038/472276a

Glover, N. M., Antoniadi, I., George, G. M., Götzenberger, L., Gutza, R., Koorem, K., ... Mayer, P. (2016). A pragmatic approach to getting published: 35 tips for early career researchers. Frontiers in Plant Science, 2016(7), 610. https://doi.org/10.3389/fpls.2016.00610

Nicholas, D., Rodríguez-Bravo, B., Watkinson, A., Boukacem-Zeghmouri, C., Herman, E., Xu, J., ... Świgoń, M. (2017). Early career researchers and their publishing and authorship practices. Learned Publishing, 30(3), 205–217. https://doi.org/10.1002/leap.1102

Nicholas, D., Watkinson, A., Abrizah, A., Boukacem-Zeghmouri, C., Xu, J., Rodríguez-Bravo, B., ... Herman, E. (2018). What publishers can take away from the latest early career researcher research. Learned Publishing, 31(3), 249–253. https://doi.org/10.1002/leap.1165

Nicholas, D., Watkinson, A., Boukacem-Zeghmouri, C., Rodríguez-Bravo, B., Xu, J., Abrizah, A., ... Herman, E. (2017). Early career researchers: Scholarly behaviour and the prospect of change. Learned Publishing, 30(2), 157–166. https://doi.org/10.1002/leap.1098