

EDITORIAL

Early-career researchers: answering the most important scientific questions of our time

Steven Kelly, Editor-in-Chief, *Biology Open*

Being a biologist is a truly wonderful thing. For your job, you get to immerse yourself in the natural world and discover the secrets of life on Earth. I can think of nothing better. Whether investigating why ~30% of people sneeze when they look at the sun (Forrester, 1985) or figuring out how bacteria can photosynthesize in the dark using geothermal radiation from deep-sea hydrothermal vents (Beatty, et al. 2005), biology is endlessly fascinating and opportunities for discovery in the biological sciences are almost limitless. There has also never been a better time to be a biologist. The 21st century, according to both leading thinkers and venture capital investors, promises to be the age of biology. We are anticipating revolutions in medicine, agriculture, energy and the environment that are unprecedented and all founded in biological science research. Thus, being a biologist not only provides endless opportunities for discovery, but also has the potential to make a real impact in our rapidly changing world.

Although being a biologist is fascinating and important, it is also extremely challenging; for no-one is the challenge greater than early-career researchers (ECRs). Being an ECR can sometimes feel like having the weight of the world on your shoulders. Your day job is to answer the most important scientific questions of our time and, if that was not challenging enough, at the same time you have to figure out how to forge your own unique career in a fickle and mercurial world where professional expectations are constantly changing. This challenge can often be made more difficult by the transience of research contracts – ECRs don't always know where they will be living in two years' time, they are often distanced from friends and loved ones, and can be struggling financially. A number of excellent books and articles have been produced by a disparate array of authors that aim to guide ECRs through the process of building a career while trying to maintain a healthy work/life balance (Yewdell, 2008; Gabrys and Langdale, 2011; Eley, 2012; Stull and Ciappio, 2014; Tregoning and McDermott, 2020; Bartlett et al., 2021). Although it is important that ECRs make use of these (and similar) resources to help them find their own unique career path, it is also key that group leaders, institutions, societies and publishers find ways to help foster the career development of ECRs (see Box 1).

As the Editor-in-Chief of *Biology Open* (BiO), I have made it my mission to use BiO as a platform to help support ECRs, supported by our not-for-profit publisher The Company of Biologists (see Box 1). We proudly publish First Person interviews and promote them on our journal site. We also provide funding to support meetings and conferences organised by or in support of ECRs. Our

Box 1. How The Company of Biologists supports ECRs.

BiO is published by The Company of Biologists, a not-for-profit publishing organisation dedicated to supporting and inspiring the biological community. The Company uses its income for the benefit of biology and the biological community. Many of its activities focus on supporting ECRs in the vital first stages of their academic careers, offering a number of practical ways to meet their unique needs and the challenges they face (see <https://www.biologists.com/stories/how-the-company-of-biologists-supports-early-career-researchers/>).

Facilitating scientific collaboration

Travelling Fellowships of up to £2,500 are offered to graduate students and post-doctoral researchers wishing to make collaborative visits to other laboratories (<https://www.biologists.com/travelling-fellowships/>). Conference Travel Grants (up to £600) from sister journal *Disease Models & Mechanisms* are aimed at ECRs wanting to attend scientific meetings, conferences, workshops and training courses relating to the areas of research covered by the journal.

Communication and blogging

ECRs might consider writing for one of our community sites – the Node and FocalPlane – or even joining our ever-expanding group of preLighters writing for preLights (the preprint highlighting service). These dedicated community sites provide scientists with a place to interact, learn and discuss science informally.

Hosted internships

We offer professional internships for PhD students (funded through PhD programmes). Each internship is carefully defined, both with the institute and the individual, and usually involves projects with our journal teams.

Funded Workshop places

Our Workshops provide a stimulating, and equal, environment for leading experts and ECRs. There are usually 30 participants at each Workshop, including 10 places that we fund for ECRs to join. Everyone attending speaks for the same amount of time and ECRs gain one-to-one access to leaders in their field.

most recent effort to support ECRs has been the launch of our Future Leader Reviews program. Future Leader Reviews comprise a publishing programme specifically created for ECRs. These peer-reviewed articles highlight, critique and analyse recent important findings in a defined field of biological research. We encourage our Future Leader Review authors to be forward thinking in their approach and to discuss future prospects, challenges and questions that are yet to be addressed. We created the Future Leader Reviews program specifically to help ECRs establish an identity and demonstrate independence in their chosen field. This is a feat that ECRs often find difficult to achieve when working in a lab led by another individual. As BiO is an Open Access journal that exists to support and inspire the next generation of researchers, we publish all of our Future Leader Reviews for free! Thus, you don't need to have funding to publish (or a subscription to read) a Future Leader Review.

Although the Future Leader Reviews program is just getting going, we have already published a stellar set of Reviews from

Department of Plant Sciences, University of Oxford, South Parks Road, Oxford OX1 3RB, UK.

Email: steven.kelly@plants.ox.ac.uk

 S.K., 0000-0001-8583-5362

Box 2. Join the Biology Open Editor team.

Do you have a broad interest in the biological and biomedical sciences? Are you teaching or have you taught undergraduate courses in these areas? Are you an active researcher in a relevant research group or program? Do you have an interest in science publishing or in advocating for and supporting early-career researchers?

BiO is looking to appoint a new member of its international team of research-active editors. The new editor would particularly focus on supporting and expanding BiO's initiatives concerning early-career researchers. You would be responsible for soliciting and assessing submitted Future Leader Review articles, finding and inviting reviewers, evaluating their feedback and communicating editorial decisions to authors. In addition, you will write and commission editorial pieces on issues concerning Early-Career Researchers, as well as advocating for those in the first stages of their academic careers.

The Editor would also evaluate occasional research submissions within their areas of expertise.

The key qualities we look for are breadth of scientific interest, the ability to think critically about a wide range of scientific issues, good writing and communication skills, and the ability to learn quickly. Previous experience in an editor role is not required.

We are able to offer an annual stipend and a per-article handling fee.

If you are interested in the role, please email your CV to the Editorial Office at bio@biologists.com. Please also include a short letter explaining why you are interested and your areas of scientific expertise, as well as outlining what you think the main challenges of the role are and your involvement in any activities that particularly support Early-Career Researchers.

rising stars in their fields. On the biomedical side, we have had Future Leader Reviews on the molecular mechanisms of neurodegeneration in Alzheimer's disease (Olajide et al., 2021), cardiac myosin super relaxation (Schmid and Toepfer, 2021) and the role of intercellular communication in heart disease (Martins-Marques, 2021). Outside of human biology, we have published exciting articles on the unsolved mysteries in auxin movement through plasmodesmata (Paterlini, 2020), the cutting-edge developments in natural product discovery in fungi (Alberti et al., 2020), gap junctions in the *C. elegans* nervous system (Jin et al., 2020), and how animals use colour and motion to disguise and beguile (Tan and Elgar, 2021). Some of our Future Leader Review authors have even tried to take on the whole of the biological sciences by taking a hard look at research culture in the biological sciences and how it translates from the bench to society at large (Canti et al., 2021). At BiO, we are very proud of our Future Leaders and we hope that our platform helps to provide a stepping stone to a fascinating and rewarding career in the biological sciences.

To help support and develop the Future Leader Reviews program, BiO is recruiting a new Editor. This Editor will specifically work on our ECR initiatives, including our Future Leader Review program.

We are looking for someone who is passionate about the biological sciences and who is committed to supporting ECRs. More information about the role and how to apply is given below (Box 2). Through this new role, we are looking forward to finding new ways to strengthen our commitment to ECRs and to help support the Future Leaders of the biological sciences.

Although it is challenging, being an ECR in the biological sciences is a wonderful thing. Almost every discovery in the biological sciences is first made by an ECR and, critically, these discoveries are answering the most important scientific questions of our time.

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