

# OA in physics:

August 2022



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## Research methodology

Over 3,000 physical science researchers from across the globe participated in an online survey distributed by all four society partners to their researcher communities between December 2021 and January 2022.

**Most regions, subdisciplines and career stages are represented in the responses:**

### Geography

**Most respondents:**

**31%**

UK and Western Europe.

**Fewest respondents:**

### Career role and stage

**45%**

## Fields of study

Respondents represented a broad range of physical science research areas.

Most respondents:

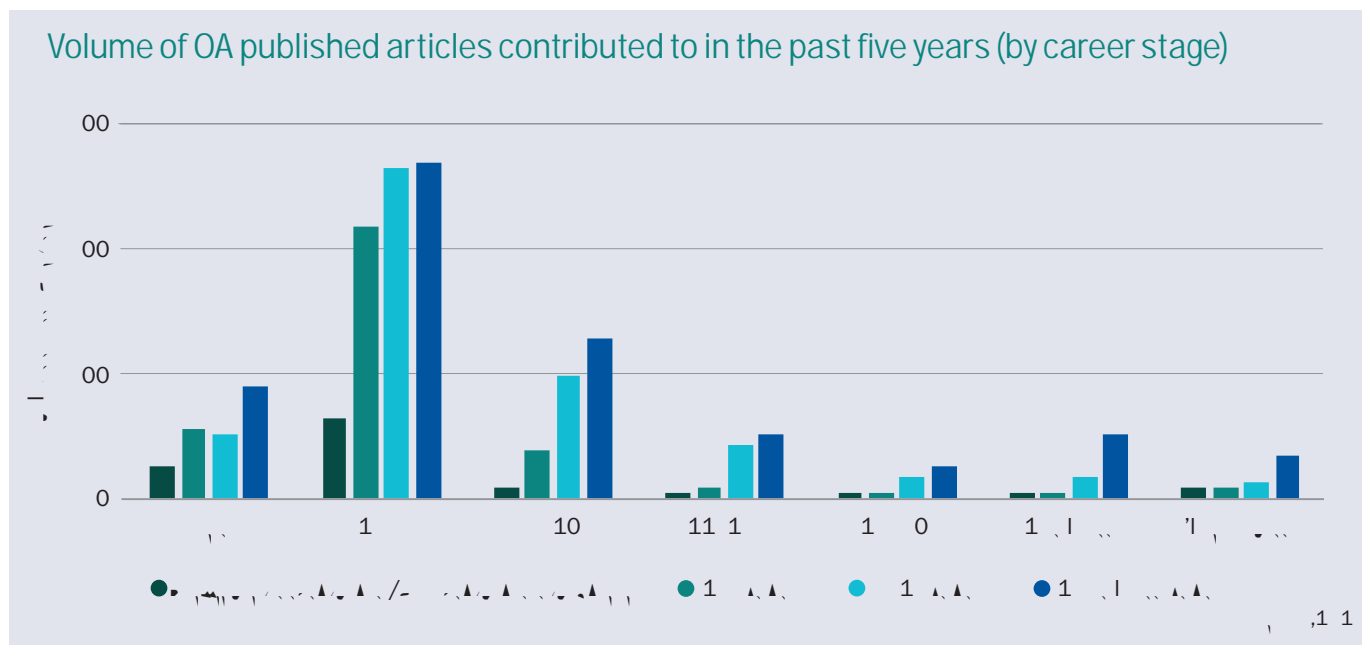
**27%**

Optics and photonics .

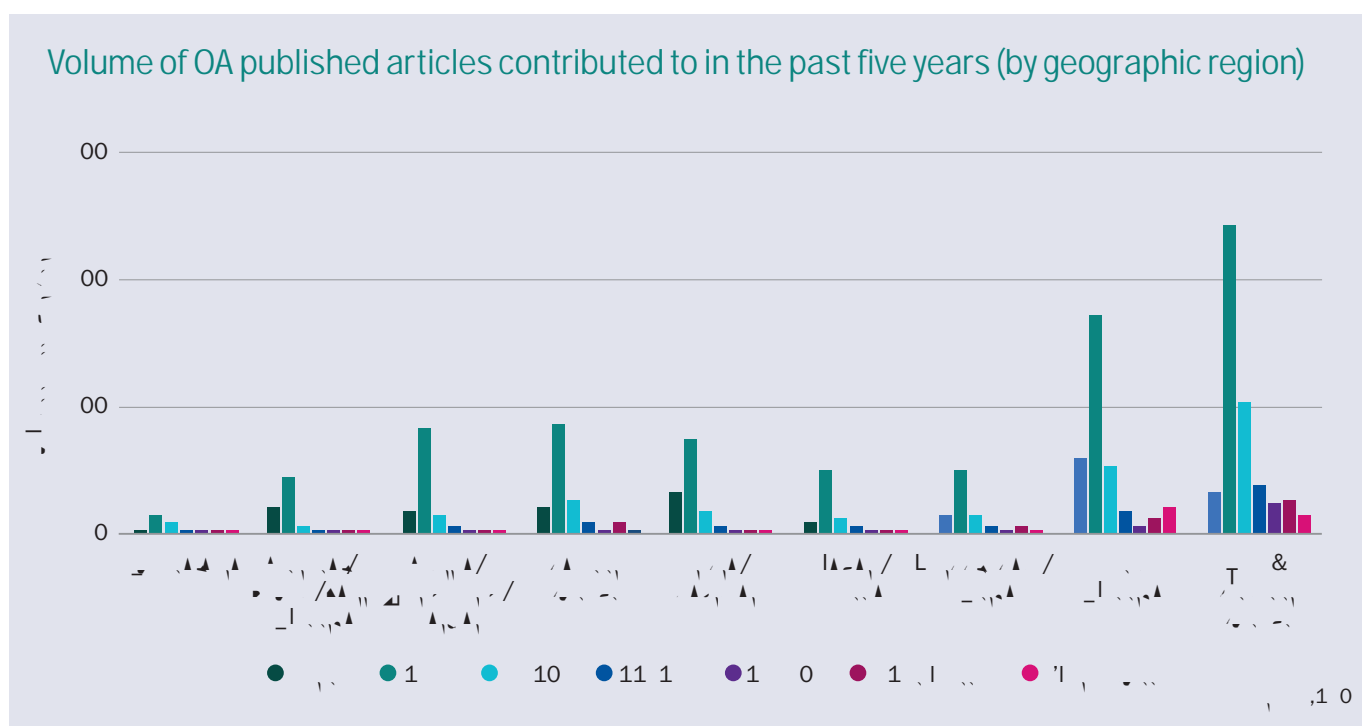
**19%**

Condensed matter.





Among the various geographic regions, contribution to OA published articles was highest in the UK/ Western Europe, while it was lowest in Australasia and South/Central/Latin America.



# What is driving OA publication in physics?

## Principles and benefits of OA

**26%**

respondents agree with the principles behind OA.

**25%**

want to reach a wider readership.

**24%**

thought an OA journal was the best fit for the work.

When asked whether researchers would prefer OA or have unrestricted choice of where to publish, more than




**53%**

said they would prefer their work to be published OA.

A significantly higher number of respondents indicated their agreement with the principles of OA in the UK/Western Europe, consistent with the higher volume of OA publications and funder mandates for OA from this region. In general, researchers recognise the importance of widening access to readers around the world.

There are some institutions, students and poor countries...they don't have good access. If we publish in OA journals then our research will be available to them all the time 24-7, they will get some knowledge from this sharing.

**PhD candidate**, 1–5 years' publishing experience, Korea

This is consistent with research findings that 25% of researchers recognise the importance of widening access to readers around the world.

Nearly a quarter commented that an OA journal was the best fit for their work (24%).



## Policies for OA funding

Policy requirements and the availability of funding are notable factors driving higher uptake in regions with policies in place for OA.

The majority of respondents believed they were not currently under any obligations to publish their work in OA formats.

**< 20%**

of respondents in any demographic reported that OA is mandated by their employer.

**< 30%**

in any demographic reported that they are subject to mandates from their research funder.

Requirements and encouragement for OA publication are highest in the UK/Western Europe and lowest in South/Central/Latin America:

**UK/Western Europe:**

**30%**

required to publish in OA.

**35%**

encouraged to publish in OA.

**South/Central/Latin America:**

**73%**

have no OA requirements.



### **Custodians of ECR decisions**

More senior respondents overall reported having requirements to publish OA (18.8% of those 16+ years into their career) than those earlier in their careers (15.9% for those 1-5 years into their career). It is likely that more experienced researchers have greater access to funding and therefore take on the associated requirements around the use of that funding. For that reason, professors and lab directors will continue to play an influential role in how far ECRs – the senior researchers of the future – are exposed to information and a culture of OA publishing.

### **Lack of funds**

Around two-thirds of respondents have been prevented from publishing OA because they have not been able to access the necessary monies from funding agencies to cover the cost. The lack of funding is most keenly felt by researchers in South, Central and Latin America, as well as in India and Pakistan, where approximately 80% of respondents specified a lack of funds as the main reason for not publishing OA.

Of those facing challenges:

**51%**

**30%**

had cost issues but were able to pay from a special fund (particularly in the UK/Western Europe, Australasia, and China/Hong Kong/Taiwan).

**12%**

were able to claim a waiver from the publisher (especially those in Latin America).

### **Lack of incentives**

As noted earlier, the majority of respondents believed they were neither required nor encouraged to publish OA. Some interviewees stressed the need for a level playing field:

I think it requires funding bodies... to take the big step and if it's not all done together, then there are going to be winners and losers. And that will create an inequity for some time. I'm lucky that I'm in a relatively privileged position and a rich country and everything's easily accessible. And you know, there's lots of places in the world that aren't, and there's lots of clever people around and they deserve a chance as well.

**Department head**, 16+ years' of publishing experience, Australia

Those at early stages of their careers raised concerns about the perception of OA as poor quality, emphasising the need for further education and support for these more junior researchers:

“ If you are publishing too much open access, people will say maybe you are getting some benefit by paying some money. So that's the general mood of researchers. If too much open access, then there will be concern.

**PhD candidate**, 1–5 years' experience, USA



The majority of respondents felt that a policy that required publication in fully OA journals,



Although some respondents saw value in enforcing a gold OA route, with benefits for

As society publishers, we want to be sure that governmental or funder mandates related to OA do not create a divide between those who can pay to publish their work OA and those who cannot. We believe that all authors should have the opportunity to publish their work, and the work published should represent the diversity of the global science community. Our report shows a range of needs across geographies and career stages; we have to work together to deliver OA publication options that work for the scientific community as a whole. All those involved in scientific communications need to ensure that researchers are not deterred from publishing their work, whether it be in a hybrid or OA journal.

### **ECRs must continue to be encouraged and supported**

ECRs are the future of science and the harbingers of change when it comes to scholarly communications. This study reveals that ECRs believe OA is more important than having the ability to choose where to publish, and they want to be able to reap the benefits of unrestricted access to research. But supporters of OA or not, article publishing charges (APCs) are a concern for ECRs due to lack of access to funds, or lack of awareness of the existence of funding sources.

Incentive structures must be tackled if ECRs are to benefit fully from OA publishing, and this

## **Limiting publication routes will not meet the needs of the global physics community**

