EDITORIAL OPEN

Why do we need another journal?

npj Quantum Materials (2016) **1**, 16006; doi:10.1038/npjquantmats.2016.6; published online 27 July 2016

When I have discussed plans for this new journal with my colleagues, the response of many has been 'Why do we need yet another journal?' This is a good question.

Information propagation throughout the scientific community is already speedy and efficient. Email, telephone and Skype provide direct connections between scientists everywhere around the world. Many opportunities exist for face-to-face communication and discussion among scientists at international meetings. The arXiv offers instant publication of papers, thereby providing what, in my opinion, is one of the most effective mechanisms for the updation of new knowledge that has ever existed. Furthermore, the arXiv is at its most efficient (and most democratic) when all the best papers are posted on it as soon as they are complete. Indeed, *NPJ Quantum Materials* allows authors to post their papers on the arXiv at the time of submission, and I encourage them to do so. However, the very existence of the arXiv raises the question, 'Why do we need journals at all?'

In the first place, topical journals with a rigorous selection and refereeing process have an important role in the progress of the field.

The volume of information that is available itself poses daunting problems. It is useful to have systematic avenues for sorting papers by subject matter, quality, general interest and broader significance. Admittedly, neither of these attributes is entirely objective nor one-dimensional, so it is important from this perspective to have multiple journals with diverse editorial practices. It is our goal at *NPJ Quantum Materials* to publish papers that will be thrilling for scientists interested in quantum materials. We are confident that some of the papers we publish will also be of significance for a much wider scientific audience; at its core, the field of quantum materials shares the same conceptual challenges as other fields that deal with emergent phenomena in systems with many strongly interacting degrees of freedom. It also shares with other subfields the inestimable beauty associated with any phenomena in which quantum mechanics plays a central role. The specific methodologies, both theoretical and experimental, are shared over an even broader range of fields, from chemistry to materials science, through condensed matter physics, to the detection of gravity waves. But, it is not reasonable to expect all papers published in our journal to have such global reach—the focus will be on significant and original papers that will be of considerable interest in a more narrowly defined field.

The refereeing process is often painful for authors. But, in fact, we all know that the refereeing process is essential to the field, and that referees are fine scholars in their own rights who volunteer their time as a gift to the scientific community. The refereeing process consistently (albeit not flawlessly) provides a needed barrier to incorrect and incomplete results. Often referees ask questions that the authors have overlooked, most commonly through being too enmeshed in the problem they are studying. Where referees really 'do not understand' the point of the article, it is typically because the point was not articulated quite as

sharply as the authors might have thought. Although we might occasionally complain about it, as a community we vote with our feet, publishing by preference in those journals with the most stringent refereeing processes. We aim to adhere to a refereeing process at *NPJ Quantum Materials* that is rigorous, speedy, transparent and constructive, and that acknowledges the creative contribution of our volunteer referees.

Secondly the editorial process consistently improves the clarity of accepted papers.

Nature Research journals are notable for the superior quality of the writing and the excellence of the graphics. This is, in large part, a reflection of the guidance to authors of accepted papers that is provided by Nature's editorial staff. Improving the communicative merits of the articles is one of the hallmarks of the editorial process in this family of scientific publications.

There is another question that I have been asked: 'Is it not more appropriate for scholarly papers to be published in journals run by the scholarly societies, rather than by a for-profit corporation?' This is another good question.

I think that the scientific community is best served if there are diverse journals, with ranges of policies and prejudices that are as broad as are the forms 'good' science takes. The greatest danger to progress is that significant new ideas that challenge the accepted norms will be ignored—not due to the malice, but to the myopia of a particular academic establishment. At *NPJ Quantum Materials* we believe that there are many new and exciting developments in the field and we do not plan to impose arbitrary quotas on the number of papers on a specific topic, but we will rather consider each paper on its scientific merits.

It is also important to stress that *NPJ Quantum Materials* is a joint venture of a consortium of Universities headed by Nanjing University and Springer Nature. Nature Research journals have an admirable record of publishing high-impact articles, providing editorial expertise that results in papers that are generally clearly written and which conform to strict standards of scholarship and openness. The intellectual leadership of the distinguished group of scientific editors who have signed on to this undertaking, and the support of Nanjing University will ensure that scientific and scholarly excellence are the guiding principles of this journal. Who runs the press is an abstraction—especially in a purely online journal!

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