

Questions for the Science Editor

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We are pleased to publish a special interview with editors of the prestigious North American Journal, Science, in this issue of “Conexão Ciência”. The Science journal is one of the most important scientific journals in the world as the British Nature. The journal of the American Association for the Advancement of Science (AAAS) was first published in 1880. It has a broad readership base worldwide, receiving a large number of articles undergoing to a rigorous selection process. Unlike the vast majority of countries that focus on just one area of science, the Science addresses a wide variety of scientific fields, having a strong impact factor in the academic field. In this interview, its editors tells the paths to publication and the main interests of the journal, whose answers are very interesting for those who want their article printed in the pages of Science. We invite all readers to read carefully the tips of the Editors and envisage a future submission to the Science journal, which is a goal of scholars throughout all the scientific world.

1 - Science journal is considered one of the most respected scientific publications in the world. In your view, why is that?

Science has been at the center of important scientific discovery since its founding in 1880—with seed money from Thomas Edison. Today, Science continues to publish the very best in research across the sciences, with articles that consistently rank among the most cited in the world. In the last half century alone, Science published:

- The entire human genome for the first time
- Never-before seen images of the Martian surface
- The first studies tying AIDS to human immunodeficiency virus

Science’s multi-step peer-review process is among the most rigorous in the world. All papers are first assessed by Ph.D.-level editors to ensure basic eligibility for further routing. Papers are then routed to a Board of Reviewing Editors (BoRE) to comment on suitability for in-depth review. Submissions rated highly by the BoRE are then routed to independent reviewers with expertise specific to the topic.

The journal’s news coverage, analysis and opinion pieces also add to the value of the publication to individuals wanting to keep abreast of research and its impact on society.

2 - Brazilian authors aim to publish in Science. What are the most important criteria for the selection of a scientific paper for publication?

We seek to publish papers that are most influential in their fields or across fields and that will significantly advance scientific understanding. Selected papers should present novel and broadly important data, syntheses, or concepts.

3 - Many Brazilian students, who are “Conexão Ciência” readers and wish to be researchers, have as a future goal to publish in high-impact journals such as Science. What are the “appealing” topics that have been published recently in Science? What are the reasons for these issues being highlighted?

Science publishes papers on a very wide range of topics including biomedicine, ecology, chemistry, physics, earth sciences, computational social sciences, and others. Some topics are highlighted in special issues which include multiple papers on a given topic. Recent special issues have focused on artificial intelligence, repair and regeneration, frontiers in cancer therapy, and prediction. These topics are selected by our editorial and news teams based on their experiences at scientific meetings, on organized scientific initiatives around the world, and in manuscripts that are submitted for publication. Of

course, science is very dynamic with new advances appearing frequently.

Scientists should pursue scientific questions that are intellectually stimulating and about which they can feel passionate, because doing top-notch research is hard. Their goal should not be to publish in high-impact journals but to learn something new that will help solve problems and answer important questions.

4 - What are the scientific topics, coming from Brazil, that have attracted the attention of the Science editors?

A number of topics have emerged from Brazil that have captured the interest of our editors including emerging diseases such as that caused by Zika virus, ecology issues related to forests and their inhabitants, and a number of other topics addressed by individual Brazilian scientists and teams.

5 - What is the average time between the initial submission of a manuscript and its publication in Science?

We are committed to the prompt evaluation of submitted papers. For most papers, the time from submission to publication is five to six months.

6 - What is the estimated total cost for the publication of a paper in Science?

Science does not have a submission fee, though there can be color image processing fees, which can vary depending on the number of images per article.

7 - What is your opinion about the open access publications, either those with full costs for authors or those with no (or low) cost for authors but paid by the readers? What is the future of scientific publishing?

Even the most brilliant scientific discovery, if not communicated widely and accurately, is of little value. AAAS is the publisher of Science and the Science family of journals. In keeping with the AAAS mission, the association is in favor of broad access to the scientific literature. As part of that effort, the Science family of journals recently launched the gold open-access journal Science Advances, which publishes research over a broad range of disciplines including engineering, technology, and social sciences.

Our other journals in the Science family (Science, Science Signaling, Science Translational Medicine, Science Robotics and Science Immunology) permit green open access (that is, they permit authors to self-archive in some form). Authors of papers in these journals may post their accepted manuscripts to their institutional repositories at publication (with no delay). AAAS also permits authors of papers in these journals whose work is subject to a funding mandate to – immediately upon

acceptance of their paper – self-archive their accepted manuscripts to the funding body’s designated repository for public access six months from publication. Furthermore, the current policy of AAAS is to make all original, peer-reviewed research free with registration 12 months after publication. Through CHORUS, AAAS is also working towards providing free public access on the same schedule (12 months after publication) to any articles that report on funded research.

To understand the future of scientific publishing, AAAS will continue to track public and open access models to try and glean whatever lessons may be learned from these efforts. We realize that business models need to adapt and adjust over time.

8 - There is a new moment in the dissemination of pseudoscience in the world, with many scientific publications publishing papers with no academic/scientific evaluation. How has *Science* been working to avoid this type of problem?

A strong peer review process is central to the integrity of scientific publications. The peer-review process at *Science* is rigorous but based on a certain level of trust in the fundamental integrity of the vast majority of scientists. Publication in the scholarly literature allows other independent researchers to further test results, and to either replicate findings, or call them into question.

Science is continuously improving its peer-review process, and has implemented an array of enhancements since 2006, including most recently, an extra step involving expert statisticians. The Statistical Board of Reviewing Editors (SBoRE) evaluates papers identified by *Science*’s Board of Reviewing Editors as needing additional scrutiny in data analysis or statistical treatment.

Science and AAAS, with funding from the Arnold Foundation, has also held a number of workshops on reproducibility and is adopting standards meant to improve access to data and code and transparency around methods and statistics.

9 - Does the *Science* publisher, provide any kind of authors’ training for publication in high-impact journals?

While the journal does not provide a formal training for authors, clear guidelines are provided to

authors interested in preparing and submitting manuscripts. Editors also often give seminars at various meetings and institutions related to publishing in *Science*.

In addition, there are a number of articles and resources related to the topic on the *Science* Careers website. See below links for a few examples.

<http://www.sciencemag.org/careers/2012/09/getting-your-research-published>

<http://www.sciencemag.org/careers/2004/04/academic-scientists-toolkit>

10 - Please send an encouraging message to our “Conexão Ciência” readers, who are Brazilian researchers, to submit a paper to the *Science* journal.

We welcome submissions from all fields of science, and from any source. We believe in judging the merits of the research presented in a paper rather than the institution where the research was performed. We have six journals and we encourage you to become familiar with the content in the journals and select the journal that is appropriate for your best work.

Thank you for your support, attention and collaboration for the publication of the Journal, on behalf of the UNIFOR / MG (Centro Universitário de Formiga / MG) and the Conexão Ciência Journal.

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Co-editor of Conexão Ciência Journal.