LETTER FROM THE EDITORS

Welcome to the inaugural issue of Rejecta Mathematica! Thank you for joining us for what we hope will be a unique and interesting experiment. For those unfamiliar with our mission, Rejecta Mathematica is an open access, online journal that publishes only papers that have been rejected from peer-reviewed journals in the mathematical sciences. In addition, every paper appearing in Rejecta Mathematica includes an open letter from its authors discussing the paper's original review process, disclosing any known flaws in the paper, and stating the case for the paper's value to the community.

Since starting this endeavor, the questions we've been asked most often are "Why are you doing this?" and "Is it a joke?" While we are not above admitting that we have had a few good laughs in this process, we hope that this issue will serve as definitive proof that Rejecta Mathematica is not a joke. Despite the central role that peer review (and even rejection) must play in the scientific process [1], we believe there are several reasons why this project can make a positive and valuable contribution to the mathematical sciences research community.

First, there is ample evidence that in the traditional review process, significant (even Nobel prize-winning) research is occasionally overlooked and groundbreaking work is sometimes actively shunned [2–4]. Perhaps this is most dramatically illustrated in the fact that at least "36 future Nobel Laureates encountered resistance on [the] part of scientific journal editors or referees to manuscripts that dealt with discoveries that on [a] later date would assure them the Nobel Prize" [5]. While it would be presumptuous for us to assume that we can spot significant work that others may have missed, we can provide a venue to introduce rejected work to the community and increase the chances that its value will be appreciated sooner rather than later.

Second, there is also evidence that a research community can derive value from a centralized repository of rejected papers, even when (and perhaps especially when) the results are either incorrect or not significant enough to warrant consideration for a major international prize. Rejecta Mathematica can benefit authors looking for feedback on their work, wanting to warn the community against false starts (i.e., the classic "null results" that never see the light of day, only to be repeated by others) [6, 7], or wanting to illuminate the occasional vagaries of the peer review process to enhance accountability and scientific integrity [8]. Our journal can also benefit readers who want access to "minor results" that may be useful but not publishable in isolation. Indeed, Rejecta Mathematica has existed in folklore for many years as a fictitious place to send papers that were never to see the light of day, and the concept of a formal repository for rejected papers hoping to be discovered and revived (called Rejuvenatable Mathematics) has also been proposed [9].

While such a project as Rejecta Mathematica would have been impracticable in the pre-internet age, the flood of resources available today begs another oft-posed question: "Why do we need a new journal? Isn't this what a preprint server (like the arXiv), a blog, or a personal website is for?" We believe that a central collection of articles that have been selected for their potential interest to the community will increase their visibility beyond what could be achieved through a general preprint server or personal website. We also believe that the commentary and advocacy by the authors will increase the value of the papers beyond what

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would exist from the appearance of the paper alone. Finally, we believe that the availability of thoughtful technical discussion (via Rejecta Mathematica "correspondences" following up on previously published articles) has the potential to generate more valuable interaction than the immediate commentary generally available on a blog. There is no doubt, however, that blogs and online archives can also play a significant role in advocating for rejected papers.

Finally, we would be remiss not to mention that being researchers ourselves, at some level we simply wanted to conduct an experiment. What started as a fleeting idea around the lunch table (discussing one of our own rejected papers) turned into the type of inquiry that fuels even the most serious of studies: if we build Rejecta Mathematica and ask for papers, what will happen? Will we get any papers, and if so, will they all be the delusional output of mathematical cranks? (This has been a common conjecture.)

Other questions concern our editorial policies. Should we simply publish every article we receive, and if not, how should we evaluate the submissions? After careful consideration, we have settled on an editorial process that includes no technical peer review (hence our slogan "Caveat Emptor"). Rather, we will rely on the technical review provided by the journal from which the paper was originally rejected and focus instead on selecting papers based on their apparent potential interest to researchers in the mathematical sciences. Admittedly, and perhaps necessarily in a journal of this scope, the concept of "potential interest" encompasses a broad set of loosely defined criteria. Ultimately, we will try to choose papers that allow some opportunity for learning. For example, we do not see much value to the community in publishing papers that were rejected solely for their incomprehensibility.

The open letter plays a major part in our decision process, as we view its role in a Rejecta Mathematica article as being at least as important as the technical content of the research paper. The open letters are where the authors can both tell the history of the paper and convey the lessons learned from the rejection. Undoubtedly, many open letters will provide a frank commentary on the peer-review process. Some may even be controversial. At the very least, they should help others benefit from the (technical and nontechnical) mistakes of their peers. To address the original question, there have indeed been papers rejected from Rejecta Mathematica.

We are delighted to say that the content of this first issue runs the gamut of genres included in our mission: minor or traditionally unpublishable results, non-traditional ideas and proof techniques, misunderstood genius, results based on questionable assumptions, and controversial papers and open letters. We are also pleased that the papers span several areas of the mathematical sciences, including pure mathematics, applied mathematics, theoretical physics, and engineering. We hope that you enjoy the issue with as much good humor and intellectual stimulation as we have encountered in putting it together. We welcome feedback, future submissions, and support for the Rejecta Mathematica mission through our website: `math.rejecta.org`.

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