Letters to the Editor

Hoisting the Black Flag

It is notoriously difficult to publish negative results in other sciences, but the Queen of the Sciences is supposed to be different. Three years ago, in December 2006, the *Notices* published an article containing theorems and mathematical claims for which I found a dozen counterexamples. The *Notices*, however, refused to publish my counterexamples even after I condensed them and their own referee verified them. The editorial solution was a "correction" that not only omitted many of the flaws I had found but also introduced a new mathematical error into the permanent record, in spite of an additional counterexample I had provided them to the new claim. The same errors that appeared in the 2006 *Notices* article continue to be propagated in the literature, including published research articles and a new book. More than two years later, I am still trying to publish the counterexamples and will continue to do so.

In the meantime, however, I have three suggested improvements to the editorial process of the *Notices*:

(1) When AMS editors become aware of serious mathematical errors in a widely publicized paper they published, they should not only correct the record completely in their own journal, but should also notify the relevant media sources and ask for public corrections or retractions (e.g., AMS News Release, *Scientific American,* Discovery Channel, and Mathworld, as in the above case);

(2) AMS editors should not pass judgment on papers or letters that refute articles published under their own watch;

(3) When editors announce a policy that appears to conflict with basic established AMS standards and ethics (e.g., that exposition overrides mathematical correctness), they should first consult the associate editors and AMS officers.

To appreciate the events that motivated this letter, see the diary "How to Publish Counterexamples in 1 2 3 Easy Steps",

http://www.scribd.com/doc/19819297/How-to-Publish-Counterexamples-in-1-2-3-Easy-Steps.

It is our duty, as rank-and-file AMS members, to help guide our Society's editors. Our legacy is the scientific culture we leave to the next generation. To paraphrase the inimitable words of H. L. Mencken, "Every normal mathematician must be tempted at times to spit on his hands, hoist the black flag, and begin slitting throats."

—Theodore P. Hill
Georgia Tech

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Patents and Mathematics

I am writing to encourage a discussion of whether the AMS should lobby the U.S. Patent and Trademark Office to remove their insulting and counterproductive exclusion of mathematics as evidence of the scientific and technical qualifications required for a lawyer to practice law before USPTO.

In recent years I have been involved as an inventor in patents for molecular diagnostics—one for detecting and identifying mutations using high-resolution DNA melting and another for identifying genes that can be useful for cancer diagnostics and therapies.

In the process I have discovered that there are very few patent attorneys with even a minimal mathematical training, not to mention the level required to understand the math involved in so much of modern science and technology. It was only recently when, in a very pleasant change of circumstances, I was referred to and worked with Thomas M. Bonacci, a patent attorney who had studied mathematics as an undergraduate and graduate student, that I learned why.

He told me that an applicant to practice before USPTO must demonstrate, in accordance with the USPTO's requirements, that he or she possesses scientific and technical proficiency sufficient to address issues that arise in patent law. Notably, however, mathematics is explicitly excluded as a subject for this purpose. I was a bit skeptical until I downloaded the "General Requirements Bulletin for Admission to the Examination for Registration to Practice in Patent Cases Before the United States Patent and Trademark Office" to see for myself. It lists 32 subjects in which bachelor's degrees comprise adequate proof of the necessary scientific and technical training, as well as 2 1/2 pages of acceptable alternates. Then it states the "Typical Non-Acceptable Course Work: The following typify courses that are not accepted as demonstrating the necessary scientific and technical training:" and in the middle of this paragraph, there appears: "...machine operation (wiring, soldering, etc.), courses taken on a pass/fail basis, correspondence courses, ...home or personal independent study courses, high school level courses, mathematics courses, one day conferences, ..."

In case you cannot believe where the USPTO places mathematics any more than I could, links to this and related documents are provided at http://www.math.utah.edu/~palais/usptovsmath.html.

Ironically, USPTO requires mathematics coursework for prospective examiners in the computer arts (employees) that it doesn't recognize as qualifying for practitioners.

This is not a debate regarding the appropriateness of patenting mathematics. There have been many such conversations elsewhere. But in these times that mathematics is becoming increasingly visible in valuable patents (e.g., Google's Page Rank, a linear algebra algorithm, was licensed by Stanford for US$336 million) it seems that the USPTO should be encouraging, not discouraging, the mathematical fluency of the lawyers whose work it recognizes.

—Bob Palais
Math Dept., Pathology Dept.
University of Utah

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