

# Commentary

## In My Opinion

### Freeze the Fees, Please

The Board of Trustees is reconsidering the issue of raising registration fees at AMS sectional meetings to \$40 for members. Since 1987 the fees have been \$30 for members, \$45 for nonmembers, and \$15 for students. The AMS incurs expenses in organizing these meetings, mainly the expenses of the professional staff, whose excellent service is invaluable for the smooth preparation and running of meetings. With the current format of fiscal accounting, the sectional meetings incur a relatively small loss. There is possibly an argument to be made for increasing the fees that have been fixed for the past thirteen years. However, people have declined my requests to articulate such arguments. In my opinion the registration fees should not be raised at this time.

I view the sectional meetings as one of the most important ways in which the AMS serves the research interests of the members. The meetings are highly successful in encouraging and disseminating mathematical research. The meetings could not exist without the generous donation of time by the many mathematicians who organize the special sessions and participate by giving lectures. The many hours of voluntary work by members of the host department are also crucial to the success of the meetings. Everyone who attends a meeting is asked to pay the registration fee (except for the four plenary invited speakers). In fact, the vast majority of the registrants are those very people who have donated their time and energy to create the meeting, i.e., the session organizers and speakers and members of the host department. It is therefore appropriate (and only fair) that the AMS should strive to keep the fees as modest as possible.

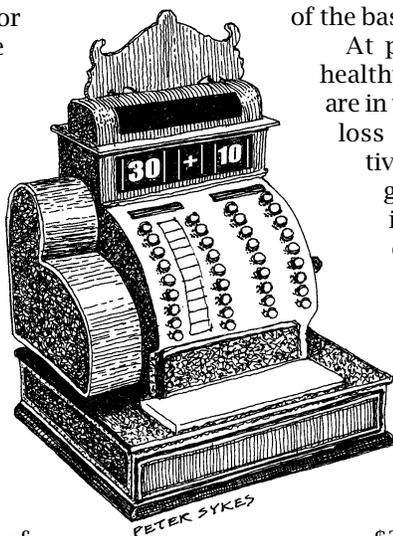
There is some merit to the argument that each activity of the Society should be essentially self-supporting, i.e., that some AMS activities should not be subsidizing less lucrative

activities. Indeed, the overall subsidy to meetings has been reduced in the past few years by eliminating AMS participation in joint annual summer meetings and by reducing the costs of handling the abstracts by requiring electronic submission (or a charge of \$20 for paper submission). On the other hand, I would argue that it is quite appropriate that a small portion of the surplus be directed to the sectional meetings, which encourage the members and others to present their own mathematics, learn new mathematics, and meet many colleagues with similar interests. Is not this one of the basic justifications for the existence of the AMS?

At present, because of wise investments and a healthy publication business, the finances of the AMS are in very good shape with a comfortable surplus. The loss incurred by the sectional meetings is a relatively small amount, so there is no compelling argument from a business point of view for raising the fees now. It is interesting to note some of the past history of the fees. In 1980 the fees at most meetings were only \$10 for members, and in the 1970s they were even lower (about a nominal \$3!). In 1984 when the Society faced a financial crisis, there was an attempt to raise the fees to \$30. In fact, the Board of Trustees voted to raise the fees at its November 1984 meeting, but by May 1985 it had rescinded the action. The fees were not actually raised to

\$30 until 1987. In 1992 there was once again an attempt to raise the fees to \$50, but this was defeated. Who actually determines the registration fees has changed over time and so has the rationale for having such fees. However, I can only assume that the decision not to raise the fees at that time of financial need was taken because it was acknowledged that the meetings were such a sufficiently important part of the Society that they deserved subsidy and encouragement. Surely this is equally valid in a time of financial well-being, as we fortunately have at present?

—Susan Friedlander  
Associate Editor



## Letters to the Editor

### Mathematical Publishing from a Different Perspective

Joan Birman has raised some important issues in her "Forum" on mathematical publishing (August 2000). There is much in her article with which I agree, rather little with which I definitely disagree, but much can be said to amplify her discussion.

Commercial publishers are now in a dominant position in some mathematical fields. The reason is simple: established mathematical societies and academic presses failed to see the need for specialized journals in the 1960s and 1970s. The support of the commercial publishers was essential and welcome in establishing and maintaining such journals. If commercial publishers are now seen by some as robber barons, the mathematical community has mostly itself to blame. Our institutions have served us well, but they have not served all the very diverse interests of mathematicians equally well.

Such remarks apply to several parts of mathematics, and in particular they apply to the field of linear algebra, which cuts across the boundary between pure and applied mathematics. The Elsevier journal *Linear Algebra and its Applications* (LAA) (of which I am an editor-in-chief) was established in 1968 as the first journal devoted to the field.

I agree with Joan Birman that it is useful and desirable to establish new high-quality electronic publications produced by the voluntary labor of mathematicians and distributed freely on the Web. But I do not think that more than a fraction of the current 60,000 papers reviewed by *Mathematical Reviews* annually can be published in this way, and therefore this is not a solution to the problem caused by high prices of commercial journals. The reason is the great amount of labor required in the production of even relatively small journals such as *Geometry and Topology* and the *Electronic Journal of Linear Algebra* (ELA), which has been published since 1996 by the International Linear Algebra Society. A journal the size of LAA (about 5,000 pages a year)

requires a professional technical support staff and a trained secretarial staff. It would be quite unrealistic to attempt to produce a journal of this size by voluntary labor, even if supplemented by some paid part-time help. Nor would I wish to encourage the many mathematicians needed for voluntary production of large journals to spend their time on technical work and record keeping, even if it were possible.

I have not yet seen anything that explains how to replace the current crop of commercial journals without causing a catastrophe in the publication of mathematics. Agreed, we mathematicians produce the essential value of a journal, but without the help of a publisher our efforts would have been stillborn in the past, and I do not believe that we can now do without this. A major change will come only if national mathematical societies and academic presses realize that commercial publishers have done something right and start serving specific mathematical disciplines in the same way, as at least one society, SIAM, indeed does. And then a change might take years.

Reduction in the cost of mathematical publications is an important goal for all of us. However, cancellation of high-priced journals by libraries in itself obviously will not produce needed substitutes for discontinued journals. Those of us who are deeply involved in publications designed to encourage our fields have little choice but to continue to employ existing means of publication until a better alternative is securely in place. It surely isn't merely a matter of selfishness on the part of editors, and it isn't even primarily a matter of the gratitude or loyalty that some of us feel towards a commercial publisher who has supported our field for many years.

We are indeed in a time of ferment in publishing, and, as a strong supporter of decentralized decision making in scientific publishing, I believe that we need all the types of journals we can get. The aim should be to maximize flexibility, for the changes in the mathematical community in the next fifty years may be as big as those I have lived through

since I started research fifty years ago and since I became an editor-in-chief nearly thirty years ago. Let 1,000 mathematical flowers flourish.

—Hans Schneider  
University of Wisconsin, Madison

(Received May 23, 2000)

### Mathematical Reviews—The Gossip Page

This letter is to lodge a complaint to the AMS about its service *Mathematical Reviews*. I question the wisdom of having this as a service one must pay for, and I question the AMS's Web page promoting "Mathematical Lookup" as a "free service". I am a faculty member in a small mathematics department that does not have a graduate program. In fact, I am one of only three faculty members and the only one of those currently engaged in research. I highly doubt my institution would ever see any point in subscribing to MathSciNet, as, in light of the above, I would likely be the only one using it. I certainly cannot afford to pay for a personal subscription.

Here is what infuriates me the most about *Mathematical Reviews*: I do try to do research in my one limited area, Galois module theory using Swan subgroups. I have had one paper and one joint paper appear, have another two accepted, and have two in the works. On the one hand, I will be very honored and proud when and if *Mathematical Reviews* in fact reviews these. Yet, on the other hand, it really bothers me that they might be reviewed. In short, if a review is written about my work that I cannot see, then doesn't that mean the AMS is talking about me behind my back? Does the AMS really want me to view them as gossips? So my largest problem with *Mathematical Reviews* is I strongly feel that if it does not mail a copy of the review to the author of the article being reviewed (especially if the author is not a subscriber), then that makes *Mathematical Reviews* a gossip column.

My next issue is with "Mathematical Lookup" being labeled as a free service. When I was on the AMS Web

site the other day and saw the advertisement saying “Mathematical Lookup” was a free service, I became very excited. First thing I did was get to the input screen; type in my last name, “Replogle”; and hit return. Sure enough, the two articles referred to above were listed, as was a third that isn’t mine. So I double-clicked on the link for my *Journal of Algebra* article and, sure enough, up came a prompt for a login name and password. So how is the service free? You still need to be a subscriber to get the reviews!

The bottom line is, I think, that it is in very poor taste to do reviews of people’s work and then not mail that review to the author of the work. I think that lowers the AMS to the level of the *National Enquirer*.

In fairness I will say when I first was aware my *J. Algebra* article had been reviewed and wanted to see the review, I did lodge essentially the same complaints with *Mathematical Reviews*, and they did send me a long e-mail addressing my concerns and a copy of the review. I guess in another month or so when my joint *Journal of Number Theory* article is reviewed, I will be doing the same. Is this how the AMS wants to conduct business?

—Daniel R. Replogle  
College of Saint Elizabeth

(Received May 24, 2000)

### Response to Replogle’s Letter

The costs of developing and maintaining MathSciNet and the underlying *Mathematical Reviews* (MR) database are very considerable and must be recovered somehow. From MR’s founding in 1940, the AMS recovered the costs from subscriptions, with almost all of the revenue coming from academic institutions. Since 1998 consortia pricing has been in place, which (for consortia members) recognizes the size of the institution. Many small colleges that previously were unable to subscribe to MR are now subscribing to MathSciNet and paying less than the cost of most journals. Mathematicians (and librarians) at colleges where MathSciNet is not available are encouraged to

look at <http://www.ams.org/bookstore/mathsciprice.html>.

There is a long tradition of reviewing published work, whether a Hollywood movie, the latest novel by Stephen King, or a mathematical research article. Publishers of reviews do not routinely send copies to the original author. The cost of mailing out the 50,000+ reviews each year would be exorbitant, paid for by our subscribing institutions. (Copies of book reviews published in MR are routinely sent to the publisher.)

The free MR lookup service was introduced early this year as a tool for verifying references and for adding links to MathSciNet. Full bibliographic information together with the MR number is given for the most recent three items satisfying the search criteria. Users at institutions subscribing to MathSciNet can click on the MR number to read the review and, in many cases, to reach the original article (provided they subscribe to the journal). For users not subscribing to MathSciNet, clicking on the MR numbers leads straight to the original article (again, provided they subscribe to the journal).

The AMS is committed to keeping MR-related costs low and expanding access while still maintaining the long-standing high quality of the MR database and related products.

—Jane E. Kister  
Executive Editor  
*Mathematical Reviews*

(Received June 23, 2000)

### Elaboration of Points by Krantz

Steven Krantz raises some important points in his May 2000 “Commentary”. I agree with him about many of them, but would like to pursue some of them further.

I found his description of what teachers do to be optimistic. For example, he talks about “the give-and-take of human interaction.” In the vast majority of math classes that I took in college and grad school, the professor tried to maintain complete control of the classroom, the professor did the vast majority of the talking, and the little talking that was done by students was done by a minority of the students. I would not describe this as

“give-and-take”. Similarly, he says that “a good teacher shows the students how to read the subject matter.” In the vast majority of math classes that I took, the teacher provided no explicit help for students’ learning how to read a math book (which can be a difficult skill to acquire).

In talking about graphing calculators, Krantz warns us to beware of after-the-fact rationalizations. This is an excellent point and one which should be brought up more frequently. For example, when asking others why lecturing is a good idea in math courses, I often get answers like “some students learn better from hearing than from reading” or “the professor can explain things that you’re stuck on.” These answers implicitly seem to assume that the alternative to lectures is for students to read a book and are natural if you come from a context where the vast majority of teaching is done by lecturing, but they don’t seem to me to be very good answers to the question “Why is lecturing the best way to spend the time that students spend with the professor?” Or, to take another example, defenses of the current role of mathematics researchers in math teaching come from within the current framework, where the choices are having the teacher be trained only in research, only in teaching, or in neither; but they don’t answer the question of why math professors shouldn’t be trained in both. (Krantz talks about “the trained mathematics instructor/scholar,” so it seems that he agrees with me that this would be a good idea; I don’t think that it describes the current situation at all, however.) This is an especially important point for the AMS to keep in mind, since most of us chose the profession because we wanted to do research, but much of the reason why society pays us is because we are teachers. Certainly the reason why I went to math grad school had nothing to do with teaching; I was, frankly, a bit surprised to find that I enjoyed teaching and thinking about teaching.

Finally, as Krantz points out, the mathematics profession is very successful, and we were educated with traditional methods, so they can’t be too bad. We must keep in mind, though, that there is no control group

of potential mathematicians taught with nontraditional methods who were less successful as mathematicians. As a thought experiment it might be interesting to consider the relative vitality of classics, mathematics, and computer science departments and think about how much of their differences in vitality can be attributed to differences in the teaching practices in those fields. The main conclusion that such a thought experiment suggests to me is that teaching practices aren't as important as I and some others would like to think.

—David Carlton  
Stanford University

(Received June 8, 2000)

### A Bleak Picture of Opportunities for Women

The roster of speakers at the upcoming AMS meeting “Mathematical Challenges of the 21st Century” prompted me to look at the most recent “Statistics on Women Mathematicians Compiled by the AMS” (*Notices*, December 1999, p. 1427). The percentage of mathematics Ph.D.’s awarded to women (among all U.S. citizens) during the ten-year period 1989–1998 was over 25%; this figure was reflected in the percentage of women AMS trustees and Council members during the same period. The percentage of women invited hour speakers at AMS meetings was only 14% (although in Special Sessions with at least one woman organizer it was somewhat better: 19% in 1998). How does one explain the additional precipitous drop to 6% (2 in 31) at the AMS “landmark event” of “historical significance” in August 2000?

I have just returned from the wonderful Mentoring Program for Women in Mathematics run by Karen Uhlenbeck and Chuu-Lian Terng at the Institute for Advanced Study. As usual, I was energized to meet so many bright and energetic undergraduate and graduate students eagerly pursuing a career in mathematics. But also, I found this encounter personally troubling. How in the world does one in good conscience encourage these

bright young women to pursue a field where—after *all* these years—there is still so little opportunity for recognition? Why in the world would one even want to when there are so many other intellectually challenging areas where promise of reward for talent and achievement are abundantly apparent as we enter the twenty-first century? (Luckily for me, the topic for this year’s Mentoring Program was complexity and cryptography, an area I know something about and one with broad opportunities.)

Shame on the AMS, the organizers of the upcoming meeting, and its chair for portraying in such a public (and self-congratulatory) way a bleak picture of opportunities for women in American mathematics as we embark on a new millennium. Shame on us (and that includes me) who have felt it past time to get on with our lives and have grown too weary to call attention in a timely and effective way to such critical matters.

—Lenore Blum  
Carnegie Mellon University

(Received June 14, 2000)

### Forum for Discussion of Educational Issues

The *Notices* should be applauded for its attention to educational issues; however, a wider forum for the written discussion of mathematics and education is needed.

Schoenfeld’s article “Purposes and Methods of Research in Mathematics Education” in the June/July 2000 issue of the *Notices* pointed out that answers to questions about education depend on what one values. Therefore, it seems we ought to discuss and debate these values openly and thoughtfully. Although much of this debate does occur informally (at meetings, on listserves, and in coffee lounges), there is little or no opportunity for all but a few prominent mathematicians to share and



defend their educational views and values in a written forum. This shouldn’t be a free-for-all, but rather a selective and considered discussion of our values and why we hold them.

Beyond a discussion of values, I believe we also need a forum for the thoughtful written discussion of the design and implementation of collegiate programs of mathematics instruction. Programs for preparing K–12 teachers are of special concern. Although research in mathematics education can study such programs and although implementation certainly involves teaching, the creation of such programs is scholarly activity in its own right, related to but separate from research and teaching. We know that refereed writing is good for research: it promotes activity while forcing this activity to maintain high standards, and it leaves a record of what has been done. If we are serious about improving our instructional programs, then shouldn’t there be scholarly writing about them?

—Sybilla Beckmann  
University of Georgia

(Received June 27, 2000)

### An Example of Undue Dependence of Universities on the NSF

I wish to support by evidence the opinion about the undesirable dependence of university research on external

funding that Andy Magid expressed in his "Commentary", "The Triumph of Research", in the August 1999 issue:

I want to acknowledge that the rosy picture being painted here [about university research] has some shadows. Some of the impetus to support and emphasize university research in recent years stems from a desire by university administrators to collect the financial benefits of external funding.

Dr. Bernard R. McDonald, Executive Officer, Division of Mathematical Sciences, NSF, acting on behalf of NSF, has rejected a proposal to unify hyperbolic and Euclidean geometry on the grounds that the benefit of such a unification to the mathematical sciences is equal to the benefit that would result from the unification of (i) the theory of combustion and (ii) phlogiston theory. His decision is based on the following review of a proposal to unify Euclidean and hyperbolic geometry:

In the past there have been many attempts to "unify" two distinct but both accepted theories. In a sense, in the 1916 general theory of relativity was an already unified theory of gravitational and electromagnetic fields. However, Einstein sought an elegant new theory in which gravitational fields and electromagnetic fields would enter in the same way. Elegant as his later fabrications were, none passed the tests posed by nature.

People can argue whether the efforts Einstein made were worthwhile or not, but at least he was not attempting to "unify" an accepted physical theory, special relativity, with a rejected physical theory, classical mechanics. To attempt to do this, it seems to me, is similar to attempting to "unify" the accepted theory of combustion with the rejected phlogiston theory. By changing our language a great deal, it might be possible to "unify" these

theories, but why obfuscate the differences between accepted and rejected theories. I don't see the point of such an exercise.

Responding to an obvious appeal that explains that mathematical standards should not be affected by analogies with phlogiston theory, Dr. McDonald gave his opinion: "The points raised in the reviews are thoughtful and have merit." Furthermore, he emphasized that "Further communications, while always welcome, will not change my conclusion." Clearly, in this phlogiston theory case, both Dr. McDonald and his anonymous reviewer evaluate the needs of the mathematical community by methods which are not acceptable among mathematicians.

Yet in some advertisements for associate and full professorship positions at highly ranked U.S. universities, candidates are requested to hold a research grant. In most areas of pure mathematics in the U.S., NSF is the only source of external financial support. NSF thus indirectly shapes the mathematical leadership of the U.S. I thus share with Andy Magid my concern about university research and recommend that no university position in mathematics be restricted to grantholders.

—Abraham A. Ungar  
North Dakota State University

(Received July 1, 2000)

The *Notices* invites letters from readers about mathematics and mathematics-related topics. Electronic submissions are best. Acceptable letters are usually limited to something under one printed page, and shorter letters are preferred. Accepted letters undergo light copyediting before publication. See the masthead for electronic and postal addresses for submissions.

### Quantifier Negation Syndrome in Action

In the August 2000 *Notices*, p. 783, did Felix Browder, as AMS president testifying before the House Appropriations Committee, really say, "This poses difficult mathematical problems since *all data sets do not have similar characteristics ...*" (my italics), or was this just a flub from the reporter? In either case, the QNS, i.e., the quantifier negation syndrome, has struck again.

—Otomar Hájek  
Case Western Reserve University

(Received July 21, 2000)

**Editor's Note:** The prepared text of Browder's testimony was posted on the AMS Web site, and the reporter accurately quoted this source.

### About the Cover

New Orleans, Louisiana, is the site for the Joint Mathematics Meetings, January 10–13, 2001. The photograph shows a musician playing the jazz music for which New Orleans is famous. Photograph by Jack Edwards, courtesy of the New Orleans Convention and Visitors Bureau.

