

1. *Assignment*
 - a. Continue formulating questions about the paper we're outlining in class.
 - i. Where should examples go?
 - ii. What about history?
 - iii. What general cleanup and rearrangement is appropriate?
 - b. Continue formulating questions about the social organization of mathematics.
2. *LATEX*
 - a. We continued discussing some ongoing correspondence between me, Dean Axler, and Birkhäuser regarding use of LATEX in book production.
 - b. Birkhäuser is insisting on that, regardless of our success using my previous method, and regardless of my saving them effort.
 - c. Evidently what they really want is the text source code, in easily editable form. I grant that LATEX is the only present way for them to get that.
 - d. Axler argues:
 - i. LATEX is prettier—granted, but only about 5%.
 - ii. LATEX is easier—I doubt it, but WYSIWIG software may be appearing.
 - iii. LATEX is better for archiving and for broadening dissemination—Yes, for mathematics archiving. But the whole Internet world is working on *.pdf, and what will almost certainly happen in the future is that files in a LATEX-like format will ordinarily be converted to *.pdf before viewing.
 - iv. MikTEX is okay and cheap—But I don't care about the cost, and when I installed that in the Department it seemed to me an inconvenient, amateurish implementation.
 - e. One student pointed out that the TUG (TEX user's group) has a list of possibly better interfaces. I'll probably review it soon.
 - f. I looked at *Scientific Word* last Fall, and found that its user-interface is not as WYSIWIG as it claims to be.
3. *How will research papers be published?*
 - a. We discussed the article "Harvard to collect, disseminate scholarly articles for faculty," in the 13 February 2008 issue of *Harvard Gazette* (available online). This has been abstracted in other newsmedia this week. The Harvard Arts & Science faculty have voted to make all their research papers freely available on a University website. This is an attack on the astronomical pricing of research journals by independent publishers.
 - b. Recently the entire editorial boards of two or more mathematics research journals, in logic and topology, published by independent publishers have resigned suddenly to protest high prices and inferior publishing service. They have approached universities as alternatives to the independent publishers.
 - c. I think the same disputes are going on in other disciplines, too, and predict some major changes soon in the answer to this question.

- d. One student remarked that this discussion had not addressed the question of peer reviews of papers. Amen. Later.
- 4. *Social Organization of Mathematics*. We discussed some questions that had been on deck now for some days.
 - a. *Academies*. These are generally governmental organizations that support research. It's eye-opening to surf their websites.
 - i. United States
 - (1) NAS (National Academy of Sciences). Tops in prestige, publishes short summaries of the most important research, and to some extent influences government policy. This is supported by the national government, but to my knowledge has no further facilities.
 - (2) MSRI (Mathematical Sciences Research Institute) in Berkeley. Supported by the national government and various grants. Concentrates on a small number of specialties each semester, and invites participation by researchers worldwide. Nice facility, with offices, meeting rooms, and library but no lodging. It doesn't publish, to my knowledge, beyond its website, which features online streaming lectures, some from SFSU faculty.
 - (3) AIM (American Institute of Mathematics) now in Palo Alto, soon to relocate in Morgan Hill. Somewhat like MSRI, but privately funded.
 - (4) There are one or two other such institutes.
 - ii. Canada. There's a counterpart of MSRI in Banff.
 - iii. Sweden. There's a counterpart of MSRI in Sweden.
 - iv. Steklov. This is the renowned Russian institute in St. Petersburg. I don't know much about it.
 - v. Oberwolfach. This is the German national mathematics research institute, in the rural Black Forest area. Supported by the government and private funds, it sponsors week-long conferences of twenty or so researchers in very narrow areas, providing room and board and some transportation. It has an excellent library.
 - vi. Royal Society. The British academies are organized differently from others.
 - b. A student asked whether facilities such as RAND and SRI should be included here. No, they are think-tanks. Their funding supports physical facilities and some support staff. They have some "permanent" research staff, but those are expected to obtain contracts from other agencies to work on specific research projects. They belong in the *Industry* category.
 - c. *Publishing journals*
 - i. Some are published by societies.
 - (1) I circulated earlier copies of all the MAA (Mathematical Association of America) journals. None are research journals. That's not the MAA's mission.

- (2) The AMS (American Mathematical Society) publishes a news journal, the *Notices*, and another, less frequent one, the *Bulletin*, devoted to major reviews and major research survey articles. It also publishes several journals for contemporary research. Check the AMS website for details.
- (3) The ACM (Association for Computing Machinery) has approximately the same variety of journals as the AMS, for computer science.
- (4) The ASA (American Statistical Society) is analogous, too. But I don't know anything about it.
- (5) Other research journals are published by societies devoted to special research areas. For example, the ASL (Association for Symbolic Logic) publishes two.
- (6) Foreign societies have similar offerings. I circulated the current issues of the *Mitteilungen der Deutschen Mathematiker-Vereinigung*, and *Mathematische Semesterberichte*, from the DMV (German Mathematical Society). The former is a news organ; the latter, somewhat like the *Monthly*. The DMV also publishes the *Jahresbericht*, which is rather like the *Bulletin of the AMS* but less high-falutin.
- ii. Some journals are published by academies:
 - (1) *Proceedings of the National Academy of Sciences* was already mentioned.
 - (2) *Comptes rendus hebdomadaires des séances de l'Académie des Sciences* is its French analog.
- iii. Some journals are published by universities:
 - (1) *Annals of Mathematics* (Princeton)
 - (2) *American Journal of Mathematics* (Johns Hopkins)
 - (3) Indiana
 - (4) Duke
- iv. Some journals are published by commercial publishers:
 - v. Springer publishes the very high-quality expository journal *Mathematical Intelligencer*, probably the most readable of its sort. It is affordable by mortals, but barely.
 - vi. Many are specialized by subject matter, for example *Historia Mathematica*, by Springer. Springer and Elsevier and one or two other companies each produce very many very high-priced journals, unaffordable by mortals. These are now the target of cancellation by libraries and rebellion by some professors.