

Preserve the Old Media Also

I read with some concern Michael Doob's Opinion essay "Preserving our history" in the January 2009 *Notices*. In it Doob discusses the ever-increasing capacity of hardware and software to create new documents and to bring old work online using these technologies. He also suggests in both the title of the essay and in the statement "...the hardest part of preserving your mathematical history may be taking the staples out of those old pages" that use of these technologies effectively preserves the documents. I would like to make a distinction here between preserving your mathematical history and providing access to it; there is, I believe, a common but important misconception about these two distinct activities.

As the archivist for the Archives of American Mathematics at the University of Texas at Austin, I deal every day with the preservation of both paper and digital files. While we in the archives profession have figured out how to preserve the former, we are in the early stages of grappling with the complexities and fragility of the latter.

Archives now regularly receive digital files from donors, and they digitize collections to create online exhibits or to provide online access to documents that would otherwise be available only to researchers who can visit the archives. However, archivists consider digitization to be no more than a method of providing access; if we think of it as preservation at all, it is only as a means of limiting unnecessary handling of the paper originals.

Preserving digital files in the long term is a tricky matter. It depends on many factors, such as ongoing software and hardware compatibility, stability, and obsolescence; maintenance of the metadata associated with the digital file; and the relative fragility of storage media, such as CDs, DVDs, and external hard drives (CDs, for instance, deteriorate faster than previously thought and are otherwise prone to mishandling, while

data on an external hard drive can be wiped out in a second).

I am not suggesting a return to paper or other analog formats—digital is here to stay. And the possibilities for wide access to photographs, sound and video recordings, and all manner of textual documents are huge. But I do want people to realize before they digitize everything and discard the paper documents (or audio or video cassettes, etc.) that the more sophisticated the technology, the more unstable the output. Will any of our masses of digital data be readable in even 10, 20, or 50 years? Archivists (and others) are working on that question, but in the meantime, hold onto your analog copies (or consider, perhaps, donating some of those analog and digital documents to an archives, where they really will be preserved).

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Reply to Carol Mead

It is undeniable that access and preservation are distinct activities. In addition, it is also true that large amounts of digitally stored data can be destroyed in an instant. Still, preservation without widespread access limits the utility of that which is being stored. For the type of project I described, the originals would not be destroyed, so the digitization being described could only be helpful for both access and preservation.

It is also undeniable and important to avoid using, as much as possible, hardware or software likely to become obsolete. That is why scans must be kept in a publicly known format. I suggested TIFF since it is standard, but others are possible.

The question of the reliability of hardware can be addressed by a good backup strategy. One would not want

a repetition of the fire at the library of Alexandria. The question of obsolete hardware is more difficult; I have some eight-inch floppies in my office and no way to read them. It's clear that hardware such as floppy disks is rapidly disappearing. The hard disk may be replaced by solid-state memory soon. Leaving (at least one copy of) the files with competent and aware personnel (such as archivists) certainly has to be part of the picture.

I must say that looking at digitization as a different form of access is really wrong. This is like saying Google is just a backup copy of a library. The ability to scan images for further information and to produce metadata that may be searched is at least as valuable as the images themselves.

The effectiveness of digital media for preserving our mathematical heritage is a wonderful topic with much more to it than can be discussed in a one-page opinion piece. We should continue the conversation.

—Michael Doob
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In Defense of Teaching Postdocs

After reading the column by "Professor Nescio" about postdoc positions [*Notices*, February 2009], I wanted to defend the teaching postdoc position that I think the good professor unfairly criticized. I recently finished a three-year teaching postdoc position at the University of Arizona, and I think Professor Nescio somewhat mischaracterized my experience.

Yes, I did on occasion teach three classes a semester, but this was by design. Not every new Ph.D. is going to get a tenure-track job at a major research institution, and having a wide teaching experience is unquestionably a benefit in the job market. There were plenty of opportunities to reduce this to two classes a semester, and I frequently took advantage of

that. Since the tradeoff was to supervise the Undergraduate Teaching Assistant program, which was also a plus on my resume, it was a win/win situation for everyone involved. I had the chance to teach a wide range of classes, from low level to very advanced; never got stuck teaching a large lecture (not that I would have minded); always had the opportunity for a grader; and always had time for research.

Sure, I probably would have written more papers if I had taken a more traditional research postdoc position coming out of grad school, but it's not like research opportunities were lacking in the teaching postdoc position. I worked with other postdocs and regular faculty, and significantly strengthened my research breadth and depth. Funding was always available for conferences, and I even helped start a new annual conference in group theory hosted by the University of Arizona.

Finally, to Professor Nescio's claim that after taking a teaching postdoc position, "you may look less attractive to employers": Coming out of grad school, my "success ratio" (interviews/applications) was less than seven percent. After three years as a teaching postdoc, it was just under fifty percent, and I landed the top tenure-track job on my list. And for what it's worth, my new position has a significantly lower teaching load than my postdoc position, a claim that I don't think a lot of research postdocs can make.

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T_EX Vector Graphics

Regarding the article by Jim Heferon and Karl Berry in the March 2009 issue: Your readers may benefit from learning about the vector graphics editor Inkscape (<http://www.inkscape.org/>) and the extension called Textext ([\[elisanet.fi/ptvirtan/software/textext/\]\(http://elisanet.fi/ptvirtan/software/textext/\)\) written by Pauli Virtanen. Both are free and, in conjunction, can produce excellent graphics that contain embedded and editable L^AT_EX-generated text objects.](http://www.</p>
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Also of note is the Asymptote vector graphics language (<http://asymptote.sourceforge.net/>), which uses L^AT_EX for typesetting of labels in graphics.

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Submitting Letters to the Editor

The *Notices* invites readers to submit letters and opinion pieces on topics related to mathematics. Electronic submissions are preferred (notices-letters@ams.org); see the masthead for postal mail addresses. Opinion pieces are usually one printed page in length (about 800 words). Letters are normally less than one page long, and shorter letters are preferred.

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