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**Michael D. Spivak, 1940–2020**

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Michael David Spivak was born May 25, 1940, in Queens, New York. He died October 1, 2020, in Houston, Texas. He suffered a broken hip earlier in the fall, and had been confined to an extended care facility following that mishap.

I met Mike when I was sent to Stanford in the summer of 1979 to learn  $\text{\TeX}$ . A house had been rented on the Stanford campus for the month of July to accommodate a small contingent whose remit was to learn  $\text{\TeX}$  and construct a working environment that could be used in production of AMS books and journals. Dick Palais, then the chair of the AMS Board of Trustees, was in charge of the group; it was Dick who had learned of  $\text{\TeX}$  from Don Knuth’s Gibbs Lecture at the 1978 annual meeting [1] and realized that this was a program directly applicable to AMS publications.

The rest of the crew in this little commune included these individuals, all of whom became active in TUG at its founding:

- Robert A. (Bob) Morris [2], who was to develop the macro interface to format the math structures that appear in AMS journals;
- Michael Spivak, who was charged with documenting the macros in a user manual for authors and their secretaries;
- Rilla Thedford, from *Math. Reviews*, to learn what would be needed to produce *MR* internal documents and ultimately, *MR* itself;
- myself, to learn how to install  $\text{\TeX}$  at the AMS Providence headquarters and how to use it to develop macros first to produce “administrative publications” (including the AMS publications catalog and the journal *Notices*) and then journals and books.

The reason for Mike’s assignment was his known ability to write clearly on mathematical topics, in particular evidenced by his five-volume set, *A Comprehensive Introduction to Differential Geometry*, work for which he was awarded the 1985 Leroy P. Steele Prize in Expository Writing [3].

For reasons unknown to me, Bob Morris decided not to complete his assignment of writing the macros. Mike took over this task, and not only produced the documentation, but also developed a comprehensive and well-designed set of macros. He had a finely developed sense for what math should look like on the printed page, as well as a sensitivity for naming mathematical structures in a way that would be familiar to a mathematician, building on the strong base pro-

vided by Don Knuth. Together, these strengths have contributed to the acceptance of  $\text{\TeX}$  as a *lingua franca* among mathematicians.

Working together, Mike and the inhouse AMS technical staff developed the macros to produce a “preprint” style, `amsppt.sty`, which together with the math macros provided a structure for producing AMS journals in their accustomed format. (The goal was to be able to switch from the previous system to  $\text{\TeX}$  in such a way that the change would be immediately noticeable only to readers who were paying extremely close attention.) The first formal edition of *The Joy of  $\text{\TeX}$*  [4] was published in 1982, and contained the instructions that would be needed for authors or their secretaries to be able to prepare manuscripts in AMS- $\text{\TeX}$  for publication in AMS journals. (The first all- $\text{\TeX}$  issue of the AMS *Transactions* was printed in January 1985, following more than a year of experimentation and pre-production work.)

*Joy* is special in a number of ways. The title is a play on the title of a then-popular book [6] on a quite unrelated subject, and *that* book’s title was a play on *Joy of Cooking* [5], a respected, time-honored, and well-organized recipe book. (One part of *Joy of  $\text{\TeX}$*  returns to that source with the heading “Sauces and Pickles”.) Pronouns are gender-neutral — *E*, *Em*, *Eir* — but even though these are now called “Spivak pronouns”, when I asked, Mike said he didn’t originate them. (On the other hand, that his name attached to them indicates that his use was widely noticed.) The material covered is clear and easy to follow. As in *The  $\text{\TeX}$ book*, the appendices were named alphabetically (A was “Answers To All The Exercises”, B, “Bibliographies”, . . . , G, “{ $\text{\TeX}$  Users}”); sadly, when the second edition was prepared at AMS, what was originally the last section of the main text was moved to Appendix A, compromising the alphabetical alignment. The second edition updated the technical coverage of the macros (which *were* Mike’s work), but he had no part in the updating of *Joy*, which was the work of the AMS editorial staff. Long after AMS- $\text{\TeX}$  was superseded by AMS- $\text{\LaTeX}$ , AMS- $\text{\TeX}$  was no longer accepted or supported by AMS, and with Mike’s permission, a PDF copy of the “final” corrected edition of *Joy* was posted to CTAN [4].

The original macros were documented by Mike, but he initially refused permission to post this material on CTAN. However, many years later, Mike did relent, and the documentation files were added to the CTAN collection [7] early in 2019.

AMS- $\text{\TeX}$  was the production workhorse at AMS for several years, but it had obvious limitations that were noted by users with increasing frequency. The

most serious was the absence of automatic numbering and cross-referencing facilities. If theorems were to be numbered, or referred to later, that had to be input by hand, with the obvious chances for errors. The same was true for displayed equations and bibliographic references. These gaps became a real problem if an author decided to rearrange the exposition.

By 1990, L<sup>A</sup>T<sub>E</sub>X, which *did* have automatic numbering and cross-referencing capabilities, was in wide use, and with increasing pressure from authors, AMS gave in, and commissioned the adaptation of the math macros into L<sup>A</sup>T<sub>E</sub>X, resulting in what is now the `amsmath` package, a required part of L<sup>A</sup>T<sub>E</sub>X.

In the font realm, Mike favored Times Roman, which had been used to set math journals and textbooks for many years before T<sub>E</sub>X and Computer Modern came along. Being quite particular about the appearance of math on the page, he created his own variation of Times, with a full complement of stylistically compatible symbols, which he called MathTime Professional 2, or MTPro2. This was made available through Personal T<sub>E</sub>X (later PCT<sub>E</sub>X), a small supplier of T<sub>E</sub>X software located in northern California. The founder and owner of this company was Lance Carnes [8], someone who is also well known in the T<sub>E</sub>X community, and who has helped me by checking this remembrance (thanks, Lance).

Mike disagreed with the manner in which L<sup>A</sup>T<sub>E</sub>X implemented the text-related features, and instead devised his own methods, which he implemented in a structure he called LAMS-T<sub>E</sub>X, with an accompanying manual, “LAMS-T<sub>E</sub>X — the Synthesis”. But L<sup>A</sup>T<sub>E</sub>X had soaked too deeply into the T<sub>E</sub>X publishing fabric, and LAMS-T<sub>E</sub>X never became the hoped-for alternative. The LAMS-T<sub>E</sub>X macros are posted at CTAN, but the sources for the manual were lost. We have found a scanned copy, and will try to obtain permission from Mike’s estate to post it on CTAN so that the curious don’t have to work so hard to try it.

Mike was active in TUG for several years at the beginning. He was a founding member of the Board (at the time known as the “Steering Committee”) and was acting Chairman from 1981–1983 while Dick Palais was on sabbatical. He left the Board in 1985.

In his “other” life, Mike founded Publish-or-Perish Press, which published several of his books, both new works and updated versions or older works first issued by other publishers, as well as books by other authors [10]. (Thanks to Bob Palais for helping to find this source.) Although further information

on the press itself is not easy to find, it is known that academic libraries all over the world still hold copies of many of his works, and they are still referred to by readers needing clear, reliable instruction on topics in math and physics.

## References

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