

Jim Hefferon

Jim Hefferon is one of the key maintainers of CTAN and a member of the TUG board.

[Interview completed 13 August 2007.]



Dave Walden, interviewer: Please tell me a bit about your personal history independent of \TeX .

Jim Hefferon, interviewee: I'm in the Math Department at Saint Michael's College, in the vicinity of Burlington, Vermont. I'm married and have two sons. In my free time I like to jog and to do ham radio.

DW: That's an interesting combination of hobbies — first run and then sit? What kind(s) of ham radio do you do?

JH: I do both voice and Morse code, although I like the code better. I am trying to bring my words-per-minute up to where I can compete in contests.

For me running is a meditation. Usually when I leave for a run I have a lot of brain chatter but when I come back it is gone. Many times I have had a math problem, or a coding problem, or a writing problem, and gone for a run. When I come back then I have the perspective to understand the problem.

DW: What sorts of math do you teach at Saint Michael's?

JH: St. Mike's is a liberal arts school, with about 2000 undergraduates and no graduate program in Math. I often teach service courses such as elementary statistics in addition to major's courses such as Abstract Algebra.

DW: Please tell me about how you first became involved with \TeX ?

JH: I wrote my PhD thesis using a commercial product. They sent me an ad promising that some aspect of their new version would be "... as good as \TeX ." So when I wrote my *Linear Algebra* (available at <http://joshua.smcvt.edu/linearalgebra>) I thought to try it in \TeX .

DW: What was your PhD topic?

JH: My thesis was in the Theory of Computation (Recursion Theory). It is a fun topic to think about, although I don't have as much time to think about it today as I would like. Once a year I get to teach a course on the topic for the CS majors. I'm considering using the experience from teaching that course to write a book for it, but we'll see.

DW: How did that first try with \TeX —writing a math book—go?

JH: My first experience with \TeX was illuminating. I had a visiting job at Union College. Their computer people were very kind and agreed to help me get the files that I needed — it seems incredible now but at that time no one had ever ftp-ed. But we got the materials from labrea and installed.

Then I had to make output. I had only Lamport's book. I decided to try a letter. But everything that I tried gave me the same error message, something like "I'm stumped.

Ask your local guru.” I often reflect on that experience: the author’s assumption that there was anyone around that I could ask told me that he lived in a world very much different than I do.

That is, it was illuminating for me to encounter the culture in which \TeX lives, with of course all its assumptions of shared experiences and ideas. It is a culture that I admire, but it is very different from the general culture. For instance, people at St. Mike’s typically don’t know what an “editor” is, including the CS students (they use integrated graphical interfaces for coding).

DW: Did you move to St. Michael’s from Union College or were there other stops along the way?

JH: I worked for a while for a defense contractor, but I have been here since 1990.

DW: You say that people at St. Michael’s typically don’t use a traditional editor? Does that mean they also don’t use \TeX , or is \TeX also used via an integrated development environment?

JH: The Math faculty use \TeX , and another person or two. But the use is declining, that I can see. I don’t think students would encounter it at all.

DW: You yourself have gotten pretty deeply involved in the \TeX world, for example, involved in CTAN maintenance and a member of the TUG board. How did that come about?

JH: When I used \TeX for my book, I found that I admired the design choices and that I admired the people who were working to keep the software available and alive. At that time things in computing looked dark. Most people had Windows 3.11, which was astoundingly bad, and sometimes I worried that what I enjoyed about computing — elegance and power — could go away.

But one day I read a post by Tim Murphy (I think) saying that this “Linux” thing was great for running \TeX and people should try it. I downloaded it — Slackware with a pre-1.0 kernel version packaged on seventy-five floppies — and got it to run. It was indeed great: suddenly I could accomplish things. So I wanted to give back. St. Michael’s was kind enough to let me offer a CTAN mirror, which means they gave me an Internet address and agreed to support the traffic (it isn’t much but they didn’t know that).

Then I helped Karl Berry out with some web stuff for the North American core CTAN site and he asked me if I would take on running that site. St. Michael’s again graciously agreed to handle the traffic. The other core maintainers, Rainer Schöpf and Robin Fairbairns, have also helped me a great deal.

I’m happy also to be able to do what I can on the TUG board, although in truth mostly Karl does the work.

DW: I see from your web site (<http://joshua.smcvt.edu/math/hefferon.html>) that your Linear Algebra book is available for download for as is your monograph on Number Theory. Were either of these ever available from a regular publisher and, if not, what was your motivation for writing them and making them available for free?

JH: I’ve sometimes talked to publishers about the Linear Algebra book, and being able to distribute it that way would be great. But it has also been great to get emails from people in far-away places who say that the fact that it is freely available has made it available to them. (Let me note that Number Theory’s main author is W. Edwin Clark; my version is just a revision that I made working with him.)

DW: I'm seeing a few books these days that are available commercially from real publishers as well via free downloads. Two books from Lawrence Lessig come to mind: *Free Culture* (<http://www.free-culture.cc/freecontent/>) and *Code version 2.0* (<http://codev2.cc/>). Of course, the latter, a revision of his earlier *Code* book, was developed via a wiki with help from many people; also, of course, he is a zealot for the Creative Commons Licenses (<http://creativecommons.org/license/>), etc. I suppose the average college level math book does not have such a wide potential audience that the publisher would be willing to simultaneously allow free downloads.

JH: Googling “free math book” gives some very good choices. Also, an open book has advantages. I offer the L^AT_EX source so people do translations to other languages a line at a time, keeping the math (so far, I know of Portuguese, Italian, and Chinese). Another person made a wiki out of the source.

DW: How about any book you write on Theory of Computation — will that be produced and available the same way?

JH: I don't know. It is really just an idea at this point. For content I'm thinking about talking more than is usual about the ideas underlying the course (in the course as I run it now, I try to get students thinking about ideas by requiring them to read *Gödel, Escher, Bach* by Hofstadter), to start with Turing machines instead of Finite State machines, and to do the constructions by coding in Scheme. I haven't thought at all about how I would offer it. We'll see if it ever gets done.

DW: Please tell me more about CTAN, its mirrors, its coordination among the administrators involved, and its on-going and potential development.

JH: The Comprehensive T_EX Archive Network is the Internet repository of materials for T_EX and friends. There are three core sites where things are added or deleted, and now about a hundred and fifty sites that mirror those materials and in turn make them available to their visitors.

The core sites are: `dante.ctan.org` run by Rainer in Germany, `cam.ctan.org` run by Robin in Great Britain, and `tug.ctan.org` run by me in the US. We work together closely, perhaps twenty to thirty emails a week.

For each of us, people upload materials and we install it. That means checking the package authorship and license, checking that the file tree looks right (it has a README file and documentation, for instance), updating the package description database, some other details, and finally installing the material to the file tree. The installation script causes the other two core sites to quickly retrieve the new package, and then the other mirrors usually grab it within a day.

My big project for some time has been to automate more of the process. Perhaps ninety percent of the cases go the same way and it seems possible to build a system that a person could manage by pushing buttons in a web interface instead of by typing command-line commands.

There are two problems with this. The first is that when I started I knew nothing about the technologies and so the learning period has been long. The second is that having ninety percent of the cases go the same way is like having a watch that is right ninety percent of the time — you mostly worry about the other ten percent!

Nonetheless, I'm under the delusion that we will soon have up a beta system. I hope that it makes the work easier to accomplish; that's the test.

DW: How do you see T_EX's prospects more generally?

JH: It is up to us; it depends on the energy that we develop around the technology.

People are getting more sophisticated about computers and we have the chance to show them the better way. Also, a source of excitement for T_EX now is that there are so many developments: modern T_EXs don't have the arbitrary restrictions of the original programs, we can now produce a beautiful web-friendly PDF with ease, we are seeing solutions to the font issues that frustrate even reasonably skilled users, and people are developing for the future with projects such as LuaT_EX.

But a development burst isn't sufficient. If, say, a Physics graduate student is assigned to make a lab manual, do they think of L^AT_EX? Certainly if they tried L^AT_EX and found that setting up the desired font was too hard then they'd go on to something else, so the new stuff is crucial. But having that person think first of T_EX requires more; we have to help average potential users to see all the great things.

As I've talked about above, personally I am interested in the challenges faced by people who feel isolated and I'd like to help them see how T_EX can solve some of their problems. For instance, on CTAN I have been taking some steps to help novices navigate the holdings. Another example is that I've written articles for *TUGboat* and *The PracT_EX Journal* that are aimed at the level above novice, because I'd like to help develop some "local gurus".

DW: I've read some of what you've written, and they seem very useful to me, e.g.,

- "L^AT_EX Resources" (<http://tug.org/TUGboat/Articles/tb28-1/tb88heff.pdf>),
- "Minutes in Less Than Hours: Using L^AT_EX Resources" (<http://tug.org/TUGboat/Articles/tb26-3/tb84heff.pdf>),
- "CTAN for Starters" (<http://tug.org/TUGboat/Articles/tb25-2/tb81heff.pdf>) and
- "Why T_EX?" (<http://tug.org/TUGboat/Articles/tb22-1-2/tb70heff.pdf>).

I also know from watching the video of your presentation at TUG07 (<http://www.river-valley.tv/conferences/tex/tug2007/>) and the related article (<http://w.tug.org/TUGboat/Articles/tb29-1/tb91heff.pdf>) that you put a tremendous amount of effort into CTAN for the benefit of us all.

Thank you for participating in this interview.