Tim Kelley talks about math, SIAM, and his newest book

Tim Kelley recently published Implicit Filtering, his fourth book with SIAM. Tim talked with us about his career and the important role that SIAM has played in it, as well as other interesting topics.

Why did you decide to pursue a career in math?
Most mathematicians know that they’re going to be mathematicians when they’re kids. For me, it was more math or the NFL. Football didn’t work out so I went into math.

Who were your major influences?
There are way too many to name but a few come to mind. I want to graduate school at Purdue. My advisor Tom Mullinik converted me from a pure to an applied mathematician. As an undergrad, I studied analytic number theory. I thought I’d do complex analysis in grad school but Tom straightened me out. I wrote my thesis on integral equations as applied to neutron transport theory. This thesis topic let me use a lot of the pure mathematics I knew, so I could get out of grad school fast. I was in Lafayette, Indiana, so rapid graduation was important to me. I did meet my wife at Purdue so my time in Lafayette was well spent.

After grad school, Herb Keller and John Dennis went out of their way to help me and made a huge difference in my career. Most of what I’ve done in nonlinear solvers and optimization are thanks to them.

Why did you write Implicit Filtering?
We’ve been developing the software for over 10 years for various applications. This is the second version. The first version was in Fortran. The software is mature enough so we thought it was time to get it out in a well-documented manner, and SIAM’s Software, Environments, and Tools series is the perfect place.

What does SIAM mean to you?
I went to my first SIAM meeting when I was a post-doc. All I remember was that it was a Midwest Regional Meeting in the fall. It was the first math meeting where I felt completely at home. Without SIAM I wouldn’t have much of a career. I’ve published many of my papers in SIAM journals and all four of my books. The SIAM staff is great to work with.

SIAM has given me opportunities to do many things. I’ve served on the editorial board of SINUM and I was editor-in-chief of SIOPT and SIREV. I’ve been on the board and council. And, most importantly, I’ve gotten to be on a Join SIAM poster.

How did you become a Kentucky Colonel?
The standards are high. You have to know someone—in my case it was my father, who was active in the Chamber of Commerce in the town where I grew up in Kentucky. Dad probably earned it. One Christmas, my father made his children—Kentucky Colonels. I have no duties. I give them $25 a year. They invite me to join and I do.

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