David E. Zitarelli: An Autobiographical Sketch

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I have led a charmed life! Education was prized even though my parents had little formal schooling—my Italian grandparents did not attend school and my father dropped out in ninth grade during the depression, though my mother graduated from high school. Since I loved school, this was the perfect setting for me, and I remained in academics throughout my professional career. Indeed, my wife Anita has sheltered me from the real world in our 51 years together, allowing me to concentrate on mathematics, its history, and the teaching of it. As one of my favorite singing groups put it, I have treasured:

> The peaceful quiet you create for me,
> And the way you keep the world at bay for me
> > Dixie Chicks, "Easy silence"

At Temple University, I became a vanishing breed in the mathematics department—a native Philadelphian with tenure. After Frank Thornton and I retired in December 2012, that left only Jack Schiller from the last millennium.

I suppose I was born to be a mathematician, though I did not admit it until about my junior year at Pennsylvania Military College, a realization that caused me to transfer to Temple. Although I received my BA degree in only one year, four Temple professors left indelible marks on me: Marie Wurster, Leon Steinberg, Albert Schild, and Peter Hagis. Over the summer between graduation and enrollment in the graduate program at Penn State, my South Philly buddy Gary Sampson and I solved every problem in Herstein's *Topics in Algebra* and Rudin's *Principles of Analysis*. OK, truth be told, we did not solve **every** problem, but we attempted most and solved a significant number. By the end of that summer, Gary was a lifetime analyst, and I was a committed algebraist. We both obtained Ph.D.s in 1970, he at Syracuse (in complex analysis) and me at Penn State (in algebraic semigroups under Mario Petrich).

While a student at Temple, I met this cute French major named Anita Paul. I will supply no further details except to say that after one year of me in State College and her in Philadelphia, we got married and she transferred to Penn State. Marriage has been pretty cool for us, even though she was only 19 at the time. (Note to youngsters of a certain age: do **not** try this at home!) Anita received BA and MA degrees in French while I completed my doctorate. My superscript and I still like each other after more than a half-century together.

We have two subscripts, Paul and Nicole, born in 1978 and 1979. Both graduated from Springfield High School. Paul Kenneth Zitarelli received a BS in applied mathematics at Harvard in 2000 and an MBA at the University of Washington in 2009. That fall he launched Full Pull Wines, an online, retail site that initially specialized in Washington wines, branched out to Oregon, and then to the world. What's next, the Milky Way? Here's a shameless plug—the website for joining his (entirely free, unless you order wine) email list is:
   https://www.fullpullwines.com/
Paul married Kelli Larsen in 2005. Their daughter Lenna Clare was born in January 2014, just eight months after they moved from Seattle to Bainbridge Island. Their son Solomon was born February 2016. Both children now attend Hazel Creek Montessori preschool.

As Nicole likes to tease her sister-in-law, "I only introduced you two for a date, not a lifetime!" Nicole received a BS in operations research and industrial engineering at Cornell in 2001. [*Warning*: Parental bragging ahead.] She pitched for the softball team, where Kelli was a teammate, and Cornell won the Ivy League twice, going to NCAA playoffs in Chicago and Baton Rouge. Nicole has been selected to the Cornell Athletic Hall of Fame, as well as two other Halls-of-Fame—Springfield HS and Delaware County. [*Sigh of relief*: end of bragging.] Nicole remained at Cornell for a year after graduation, earning an MS in the same engineering field. Upon graduation, she joined an imaging group at GE Medical Systems, first in Columbus (OH) then Minneapolis (MN). She met her husband Ryan Danielsen in the Twin Cities. A computer geek from Brookings (SD), he is co-owner and CEO of the computer company "Super Go Faster." The Danielsens have two children, Oliver Paul (born July 2009) and Zoey Alice (born May 2012).

Now back to me. Upon graduation from Penn State in 1970, I accepted a position at the University of Hartford, where my friend and former Temple classmate Sheldon Eisenberg was a professor. Anita and I intended to move there, but my mother died of cancer that year (at age 50) and I felt obligated to help my father raise my younger brother, Joe (now a surgeon), so I called Albert Schild to see if anything could be arranged at Temple. This was in June. He offered an assistant professorship, so Anita and I returned to Philadelphia two months later. She taught French and Spanish at Ridley High School until retiring in 2009, except for twelve years after Paul was born. In 1976, the two of us bought a home in Springfield, where we lived until she retired and moved to Minneapolis to help Nicole with our first grandchild. I commuted between Philly and the Twin Cities for three years before retiring from Temple after 42 years, whereupon I moved to Minneapolis fulltime! Being single seemed like a good idea at the time; the joy was short-lived, as reality quickly set in.

Like Gaul, my professional career can be divided into three parts. (That statement stems from the beginning of my Latin II class in high school.) For the first ten years of my career, I was a *researcher* concentrating on algebraic semigroups, which produced intriguing contacts with Russian mathematicians, notably Boris Schein. I even translated a book on group theory from Russian to English. But I was beginning to lose interest when the chair of the department, Leon Steinberg, asked Ray Coughlin and me to write material for a core course the College of Arts and Science was about to require of all non-science majors. This led to my second career— *author*—as Ray and I wrote a dozen textbooks over the next ten years. During this time, Dave Hill and I began sharing notes on the linear algebra courses we were teaching with computers— he with an Apple and me with Radio Shack—and the resulting collaboration led to an NSF grant that produced the first computer lab in Temple's College of Arts & Sciences. Based on this experience, Dave and I published a lab manual for teaching linear algebra with MATLAB. The culmination of this part of my career was an invitation to deliver a one-hour address at the annual AMS-MAA meeting in San Francisco in 1995. Speaking in front of 500 mathematicians was daunting—but Dave and I survived.

Although I seem to have been born a mathematician, the history of the subject always captivated me, so I read lots of it. But I did not get the opportunity to understand its structure until teaching the course in my second year at Temple, 1971. Two years later the esteemed historian/mathematician Ken May encouraged me (with funding!) to attend a conference on the history of American mathematics. And would you believe that, on my first night, I shared dinner with Dirk Struik, Marshall Stone, and Garrett Birkhoff? Now, who does **not** fit in that quartet?

Anyway, I was hooked on history, even though that meeting was held in the desert of West Texas (Lubbock). However, it was not until Albert Lewis, whom I had met at Texas Tech, invited me to become abstracts editor of the journal *Historia Mathematica* in 1988 that my association with history became formalized. That position required me to read a broad swatch of topics, which was sometimes a nuisance, but ultimately led to several important friendships and helped narrow my primary focus to the history of American mathematics. As a result, four years before ending my editorship in 2000, I offered my first course on the history of American mathematics; I offered it every other spring until it was dropped in 2006.

In the meantime, I had begun research in the area, leading to my third career—*historian of mathematics*. Moreover, in 1998, I organized a special conference on American mathematics at a regional AMS meeting with my friend Karen Parshall, co-author of a book providing the structure of the history of mathematics in America. The next year, Karen and I organized a special session at the annual AMS-MAA joint meeting, and I continued to organize these sessions through 2004 with Tom Archibald and Joe Dauben. Along the way, I met an extraordinary group of people with a passion for the history of mathematics. While I will not attempt to name all of them, I might mention that Anita and I have enjoyed the international experience of sharing our home with Rüdiger Thiele (Germany), John Fauvel, Eleanor Robson, and Ivor Grattan Guinness (England), Reinhard Siegmund-Schultze (Denmark, via Germany), and Evgeny Zaitsev (Russia). These associations also enabled Anita and me to travel to Tibet in 2007, when I was invited to deliver a lecture at a conference in the capital city, Lhasa. The two of us then toured China for two weeks after the conference ended.

The biographical snippet that appeared at the end of my *Monthly* article in the mid-2004 issue provided a nice overview of my activity up to then:

> So far, the twenty-first century has been very good to David E. Zitarelli. In addition to publishing a paper on towering figures in American mathematics and a book on the history of an MAA section, a video of his lecture on the genesis of the Moore Method was produced and distributed. In 2001 he won the Lindback Award for Excellence in Teaching and was chosen Professor of the Year by students in Temple's Honors Program. The following year he was a Buckingham Scholar-in-Residence at Miami University in Ohio. In 2003 he was elected the first chair of HOMSIGMAA, the MAA special interest group on the history of mathematics. He has also organized AMS-MAA special sessions on the history of mathematics every year in the millennium, whether 2000 is included or not.

My activity continued apace from then until retirement (and beyond)—in publications and awards. Links to my publications can be found in my CV on this web site. In 2005, I published papers in the *College Mathematics Journal* and *Mathematics Magazine*. Two years later, a paper appeared in *Historia Mathematica* and, shortly after that, another article in an MAA book. I also became a popular book reviewer, penning (an anachronism) four reviews. Additionally, I served as a reviewer for mathematical biographies of Benjamin Franklin (for Princeton Univ. Press) and Benjamin Peirce (for Lehigh Univ. Press). I also won a Great Teacher Award in 2005. Some regard this prize as the most prestigious teaching award at Temple, but I view it as secondary to my selection as Honors Professor of the Year, because I did not have to promote myself for that prize—indeed, I had never heard of it beforehand. Admittedly, however, having your name carved in marble for the Great Teacher Award, *before* my demise, was comforting. (Also, a very nice $15K cash prize came with the award.)

Research on R.L. Moore's first woman Ph.D. student, Anna Mullikin, led to two co-authored papers—a biography in the *Monthly* (with my PASHoM co-organizer, Thomas Bartlow), and an interactive paper on the Mullikin nautilus (with the indefatigable David Hill) in

the MAA online journal *Convergence*. As well, Mullikin's contributions to topology and contacts among American and Polish topologists were the main topic of my lecture in Tibet. Earlier that year, 2007, I delivered an invited lecture at the joint AMS-MAA meeting in New Orleans, on an international congress of mathematicians. I published a paper on that topic soon thereafter.

In 2009, I published a paper on the American topologist N.J. Lennes. This led to an invitation the next year to give a colloquium lecture at the University of Montana, where Lennes had chaired the math department and had accumulated so many royalties from popular textbooks that his mansion is now the official residence of the University's president. In 2011, one year before retiring, I published two more papers.

When I retired officially in December 2012, with considerable support from Dean Hai-Lung Dai, I vowed to accept no more speaking engagements and to write no more papers in favor of focusing on my *magnum opus*, "A History of Mathematics in the U.S. and Canada," which I had begun in 2004 based on notes from my "History of American Mathematics" course. However, my vow was short-lived, as retirement afforded me the leisure to read some works in the original I had only read about second-hand. One was by the Philadelphian David Rittenhouse, and, after lecturing on his mathematics at Carleton College, I published a briefer version in the *Notices*. Yet another paper in *Convergence* dealt with two trips that Alan Turing made to the U.S. Since then, I learned about a special visit he made to Dayton (OH), but you'll have to wait to read it until (if?) Volume 2 of my tome (ever) appears. Also, I was contracted to write a history of the MAA for its centennial celebration in 2015, leading to an article in the corresponding MAA book, a shortened paper in the *Monthly*, and a lecture at the 100-year celebration in Washington, DC.

What about teaching? Throughout a good part of the 1990s, I resisted attempts to lure me to Temple's Honors program because I felt more useful dividing my two-course-per-semester load between a large section for non-majors, and a standard advanced course for math majors. However, in late 1999, an appeal from Honors Director Ruth Ost was so persuasive, that I agreed to switch the large-section course for a small class in Honors Calculus. What wonderful students I had from that first semester, the fall of 1999, right on up to my final semester at Temple, the spring of 2012, when I added an honors section of my history course to the calculus course.

Nevertheless, matters didn't seem so positive in the fall of 2005 for two reasons. For one, the semester got off to a rocky start physically when I suffered through gum problems, a kidney stone, and a ruptured plantaris tendon. Ouch! Secondly, the graduation of a wonderful class of math majors foretold an empty nest at Temple as well as at home (Paul moved to Seattle with Kelli, while Nicole resided in Minneapolis with Ryan). The class-of-2005 of Neil Lampton, Pete Bogunovich, Kate Ploskina, Gino Pagano, Andrew Silberman, and Lesia Midzak reminded me of the class of 1989 with Terri Bennett, Hans Johnston, Penny Yelshin, and Jim Papacostas. These were some of the most accomplished math majors in my 42-year teaching career.

But a funny thing had happened with the fall-2004 Honors Calculus Class. Those 24 students ended up being the most accomplished group of pre-professionals I ever taught. I still keep in touch with most of them. Today Novneet Sahu, Maria Prozorov, Rina Edi, Natasha Fonseka, and Krupa Majmundar are all MDs. As well, Suemayah Gouda and Maryana Zagorodny are Doctors of Optometry. Varsha Daswani earned a Ph.D. in biochemistry and is now a medical researcher. (That adds up to a possible 8/24 in medical careers. I might end up

adding others to that list. Four other members of the class were Mike Swartwood, a mathematician in North Carolina, Andrew Kalemkarian, an engineer, Brian Fiore, an actuarial scientist, and Thom Whitesel, an Air Force officer flying the latest jets out of Florida.

In 2009, my Honors Calculus classes were expanded to large sections containing all entering students in the Honors Program taking calculus, about 120 in the fall and 90 (or so) survivors in the spring. So that sequence comprised my teaching load for my final three years in the classroom. Of course, this gave me access to a larger cadre of highly qualified students, and hence a lot of faith in America for the future. But large numbers mitigate against knowing the students on a personal basis. To balance that, however, the math department allowed me to hire one Classroom Assistant (CA) for every 20 students. (CAs are the undergraduate equivalent of TAs.) While I had several outstanding CAs for earlier calculus courses, like Steve Midzak, Dayton Duncan, Anthony DeFusco, Tim Jennings, and Mike Swartwood, expanded numbers of students over those final three years enabled me to get to know up-close-and personal Abe Oomen (now an MD), Hasmi Patel (dentist), Brian Benns (mathematician), Nikole Vernamonti, Matthew Frankel, and Jennifer Hartman (high-school teachers), and Lisa Ropars (Ph.D. program in biology).

Charmed life, eh?