Mathematica Militaris

Volume 24 | Issue 1 Article 2

2019

A Tribute to Professor Joseph F. Manogue

Gabriel B. Costa
United States Military Academy, gabriel.costa@westpoint.edu

A TRIBUTE TO PROFESSOR JOSEPH F. MANOGUE

Gabriel B. Costa

United States Military Academy

On Christmas day, 2018, I lost a dear friend and long-time mentor, Professor Joseph F. Manogue.

Joe – as he insisted I address him – was cared for by his loving wife, Helen, and his three sons, Joseph Mark, Stephen, and Philip. It goes without saying that he doted on, and was doted upon by, loving grandchildren. In his nearly nine decades on this earth, Joe led a full life and was truly a blessed individual.

I first met Joe in 1966, when I was a student at Hoboken High School in northern New Jersey. Every year, nearby Stevens Institute of Technology would invite a few students to audit a calculus course. Classmates Norby Machado, Jeff Rubin, Ralphie Terminiello and I were selected during our senior year for this honor.

I still have the textbook used in the course, the third edition of Calculus and Analytic Geometry, by George Thomas. I still recall that our class was in the Navy Building, room 217. And I still remember how overwhelmed the four of us were as we tried to understand the nuances of the subject. Questions like "What exactly is a *limit* and precisely *why* is it important?" plagued us.

One day Joe – who would be a faculty member at Stevens for nearly four decades –came into our classroom as a substitute professor. He wore horn-rimmed glasses and, for some reason, seemed to be larger than life. One immediately sensed that this was a special individual – one to be reckoned with – and not the run-of-the-mill type of a professor. For a high schooler, he seemed to be almost intimidating; yet I sensed no superiority whatsoever. In fact, I somehow suspected that this was a very humble man.

After a very brief introduction, he lit up a cigarette (yes, one could smoke in class in those days!) while turning to the blackboard to erase work from the previous class. As he vigorously cleaned the slate with his *right* hand, he simultaneously started writing with his *left* hand – all the time still puffing on his cigarette. He did this with such alacrity, that the class stifled an underlying nervous laugh and I remember thinking, "So, *this* is college!".

Little did I know that Joe would have a profound influence on me as a mathematician and that I would seek his advice and guidance in many other areas throughout the years.

After high school I proudly entered Stevens Institute of Technology, with much gratitude…and an equal amount of trepidation. I intended to major in civil engineering (and to this day whenever I see a spectacular bridge or a long, curving tunnel, I get a twinge in my heart), but

changed over to mathematics during my freshman year. I was just starting to understand that mathematics was deeply rooted in my soul.

And Joe Manogue would play no small part in supporting my decision.

During my sophomore year at Stevens, I took my first non-analysis course: abstract algebra, which was taught by Professor Manogue. By training (Catholic University and the University of Michigan), Joe was an algebraist. From day one of our course, it was evident that Joe really loved the subject. For example, I'll never forget the first time he introduced the concept of a *group.* He referred to it as something which possessed *beauty*. That I still remember that specific lesson to this day indicates how profoundly I was affected by his description.

Not that the course was easy; I still wince – just a bit – when I hear of integral domains, non-commutative rings, and quotient groups. *Give me a differential equation anytime!* However, I was to quickly learn that Joe was not only a brilliant mathematician, but he could also turn a phrase as an educator. When he talked about imposing a group structure on a particular set of elements, he became another person…virtually transformed…animated as he elegantly gave his lecture.

In my junior year, I had Joe for a course which centered upon, but not limited to, partial differential equations. The course was so rich in content that I referred to it when I was working on my doctoral dissertation fifteen years later.

One must not think, however, that Joe was in his ivory tower as a Stevens professor. During my four undergraduate years, the nation witnessed two assassinations (Dr. Martin Luther King and Senator Robert F. Kennedy), the sexual revolution, the Vietnam Police Action, the British Invasion, Woodstock, etc. Joe was well aware of current events and, at times, would refer to them in class.

After my undergraduate days, I remained at Stevens and would eventually receive my Masters degree in Mathematics in 1972. It was during those two intervening years that I served as a teaching assistant under Joe and began to share some personal goals with him. In particular, I was becoming increasingly cognizant of a Call to the Ministry. Joe was of great assistance to me, wisely – yet gently – pointing out that the idealism of a man in his mid-twenties, might be in for a bit of a rude awakening when dealing with the day-in-day-out realities of seminarian training.

As usual, he was correct. And as time went on during my years of training, I would reflect on Joe's insights as the twists and turns of my seminary training very much mirrored a damped sinusoidal curve.

By God's Grace I was ordained to the priesthood in 1979. And I was proud that Joe and Helen attended my First Mass.

Believe it or not, a year after ordination, I was back at Stevens Tech. This time for my Ph.D. And it was good to see Joe and his family again.

Here I was in my thirties, a newly ordained cleric and a fledgling doctoral student. While I loved every minute of it, there was also a certain hectic pace which loomed ever present. And it was especially at those times when things got more chaotic than usual, that a respite was in order. So, Helen, Joe, and I would have dinner and maybe imbibe some potent libations.

Scotch was usually the drink of choice.

And then we would talk. Baseball was a hot topic, as was politics, as was the abolition of celibacy for Catholic priests and the possibility of the ordination of women. But, by and large, with the exceptions of his family and his faith – and possibly excluding his passion for classical music – it was mathematics that consumed Joe.

Mathematics.

The beauty. The power. The history. His encyclopedic mind was amazing; the breadth of knowledge which was at his fingertips. Joe would go off on a story about the great Eastern European Logicians of mid-1900's, then talk about various texts on algebra, followed by comments involving generating functions and Legendre polynomials, and then speak of the elegance of Green's Theorem.

Joe was the consummate Mathematician.

And there was one other thing. Joe espoused the following tenet regarding mathematicians, something which I will never forget. To paraphrase Joe: *"Anyone and everyone in this field must give something back to it."*

I have reflected on these words for many years. Clearly, Joe was not talking about financial matters. Research and publications surely were part of it. But I believe that it was something deeper: namely, that mathematicians are stewards. They are to acknowledge that mathematics is an art as well as science. They are to have passion for the "Queen of the Sciences"… this "supreme beauty…without any appeal to the weaker part of our nature", as Bertrand Russell wrote, an internalization of the belief of Sir James Jeans' proclamation that the "Great Architect of the Universe (is) a pure mathematician."

Professor Joseph Francis Manogue was blessed with his family, his faith and with being a mathematician. Not to mention a legion of colleagues, friends, and four decades of undergraduate and graduate students who were blessed to have Joe as a professor. Students who were the better for having met him.

Joe lived life to the full.

And I have no problem believing that when he entered Eternity on Christmas day, the Lord greeted my friend and mentor, "Welcome, Joseph, my good and faithful servant. Come. See what I have prepared for you."