

Know Your Wisconsin Mathematician

Interview with Professor Gary Britton, UW-Washington County, by Benjamin V.C. Collins



Where did you grow up?

My early years were spent on a sheep ranch and farms near Stickney, South Dakota. Grade school was in small one-room country schools and my high school graduating class had 16 students. Occasionally during grades 1-3 I rode my pony to school where the other boys and I would keep our horses in the school barn during the day while we were in class.

Was there a time in your life when you discovered that mathematics was what you wanted to do?

I must have had an interest in numbers and arithmetic at an early age, as my mother talked about how as a young boy I would come in from gathering the eggs from our chicken coop and pose addition problems with the eggs as I gave them to her.

I became a mathematics major at the beginning of my junior year in college, and it was when I did my student teaching in mathematics that I decided that was what I really wanted to do as a career.

Where did you go to undergraduate school?

My undergraduate years were spent at Dakota Wesleyan University, in Mitchell, SD. It is a small liberal arts college that was located about 30 miles from our farm. My initial plans were to coach athletics and teach physical education. After much uncertainty about what I was going to do, one of the best decisions I made during those years was to switch my major and minor around. I majored in mathematics and earned a physical education minor.

And what about graduate school?

After earning my B.A. degree, I started teaching high school mathematics (mostly Algebra II) and coaching. I realized my math background was rather weak so I applied for some NSF Summer Institutes. That was in 1963. In response to the Soviet Union's 1957 launch of Sputnik there had been a big push to improve mathematics and science education. There were a lot of NSF funded summer programs available for teachers. I was accepted into one at Western Michigan University in Kalamazoo. I spent two summers there and then decided I wanted to get a master's degree. South Dakota School of Mines and Technology (SDSM&T) was offering Instructorships where you taught full-time and took graduate courses. The stipend was almost as much as I was making teaching in high school. I obtained a leave of absence from the high school and had every intention of returning when I finished my M.S. degree. However, as part of the instructorship, I had the opportunity to teach calculus. I realized that after that experience I would not enjoy high school teaching as much as I had previously, so decided to look for positions at the college level. Fortunately, at that time there were colleges and universities hiring instructors without doctorates. After coming to UW-Washington County, I took additional course work at an Oberlin College NSF institute for college teachers. I also took courses at UW-Milwaukee but didn't pursue a doctorate. Eventually I went to the University of Northern Colorado for two summers and then took a year-long leave to complete the residency requirements and the course work. In 1983 I finished my dissertation in statistics and obtained a D.A. degree.

What was the influence of your family on your education?

My parents had both gone to college during the depression, and started teaching with 2-year certificates without completing their bachelor's degrees. My mother quit teaching to raise a family and then started teaching again when I was in sixth grade. Towards the end of WWII my father left teaching and began farming. With this educational background around us while growing up, I think it was always assumed that my three younger sisters and I would go to college. I don't remember that any of us ever considered not doing so.

How did you end up at UW-Washington County?

My thesis advisor at SDSM&T knew Marion Smith in Madison, who was chairman of the math department for what was then the UW Center System, and recommended that I come to Wisconsin for an interview. I ended up taking a position to teach at the Marinette campus. During the next spring I expressed interest to Dr. Smith in moving to a more central location. He informed me that the Washington County campus was being built and they would need someone to handle mathematics there the next year. My wife, Jean, and I drove to West Bend in April where I had an interview and Jean and I looked at the area. We liked it a lot and decided to accept the opportunity to move here to be part of the initial faculty for this new campus. At the time, I expected it would be for only three or four years.

How is teaching at a two-year school different from other forms of college teaching?

Beyond the obvious difference of not having the opportunity to teach upper division courses, perhaps one of the main differences is that you don't have a chance to know students as well and to see them develop mathematically. At most, you only see them in math classes for three or four semesters. On the other hand, I think that for many of us, one good feature is that at two-year schools (at least in the UW- Colleges) there is more latitude in terms of the research and professional activities that meet departmental expectations.

What courses do you like to teach?

Over the years I think that beginning calculus courses, both the one for STEM majors and also Calculus for Business, would be my favorites. For most students, the topics and approaches are new to them and you can do some meaningful applications that are pertinent to the students' interests. That makes for more interesting teaching. In addition to calculus, towards the end of my active years of teaching and periodically since retiring, I have enjoyed teaching our Quantitative Reasoning course. This course is designed for students who won't be using mathematics in science or additional math courses. It focuses on mathematics that they will use in everyday life. You are able to deal with non-trivial subject matter and useful exercises to which students can relate.

You were very active in the Wisconsin Section during the 1980s. How do you think the section has changed over the years?

Probably the most notable change is the increased involvement of students at the Spring Meeting. This includes contributed papers presented by students and also the large number of student teams participating in "**Face Off – The Math Game Show**". Another big change is **Project NExT** which has done an excellent job of providing professional development opportunities for new faculty since 1999. What hasn't changed is the opportunity that the MAA provides to learn about additional mathematics and new approaches to teaching. And perhaps most importantly of all, is the expanded professional contact and association that participation in Section activities leads to. For example, it was at a Spring MAA meeting that I first learned about randomized response methods in surveys dealing with sensitive issues. The topic later formed the basis for some presentations that I made for our campus and also a section of my dissertation.

What do you think is the best part of being a mathematician?

I like being part of a highly respected discipline that offers challenging intrinsic concepts and ideas within mathematics itself, as well as a means to solve real problems in the world about us. By teaching mathematics you have an opportunity to work with young people and help them become better problem solvers in addition to studying the course material.

What was the worst part of teaching mathematics?

I found it discouraging when I corrected a student's exam paper and realized that they hadn't understood a concept or procedure that I thought we had thoroughly covered.

How would you describe what you did when you were talking to somebody outside of mathematics?

I would try to illustrate that mathematics is not static, but alive with new ideas and applications that are being utilized regularly, some of which affect them in ways that they never thought of.

What part of your work do you like the best? What are you most proud of?

While I was actively teaching, I enjoyed explaining new concepts to students and helping to guide them in solving problems related to those concepts. I am most proud of some of my former students and knowing that I played a role in what they are doing today, whether or not that involves mathematics in any direct way. Outside of the classroom, I enjoyed hiring new faculty when I was department chairman, and I am proud of their successes and the contributions that these faculty members have made to mathematics in Wisconsin. And I certainly enjoyed the variety of work and experiences that a mathematics teaching career has offered. This included teaching a wide range of courses, serving as department chairman, working in UW System Administration as an academic planner for a semester, and administering a professional development grants program for Wisconsin institutions in the 1990s.

What is your advice to college students and new teachers?

To college students I would say, "Keep up with your course material, reading and solving problems, on a daily basis." To new teachers my advice is "Stay mathematically active by participating in as many professional activities as you can, such as workshops, conferences, seminars, and meetings."

Who is a Wisconsin Mathematician that you would like to know? Send suggestions for the next KYWM to Ben Collins, collinbe@uwplatt.edu .
