Know Your Wisconsin Mathematician

Interview with Professor **Norbert Kuenzi**, by Professor Steve Szydlik

What impression did grade school have on you mathematically? Was that where you became interested in mathematics?

I don't have any special recollection of grade school math. In ninth grade I recall that I could get algebra faster than most of my classmates.

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

During the second semester of my freshman year in college I decided that I wanted to become a high school mathematics teacher(1953-54). I received an Achievement Award for Freshmen Mathematics 1953-54 at Wisconsin State College. The award was a copy of the C.R.C. Standard Mathematical Tables.

What town did you grow up in?

I grew up in Beaver Dam, Wisconsin.

And your undergraduate school and major was?

I attended Wisconsin State College in Eau Claire, 1953-55 and 1957-59. I graduated in 1959 with mathematics major and a minor in physics.

After graduation you went to Madison?

When I graduated I took a high school teaching position in Clinton, Wisconsin. I taught high school mathematics and physics at Clinton High School 1959-62. I began working on a Masters degree at the University of Wisconsin during the summers of 1960 and 1961.

I applied for a National Science Foundation program for mathematics teachers held at the University of Illinois. I was accepted into the program. I resigned my teaching position and began graduate work at Illinois in June 1962. I received a Masters Degree in Mathematics from Illinois.

How did you end up at UW-Oshkosh?

While at Illinois I met Bob Wonders of UW- Oshkosh. He offered me a teaching position at UW-O. I accepted and began teaching mathematics in 1964. At that time there were no PhD's in the department. In 1965 there was one PhD in the department.

When you said you had to go back to get a PhD, was that an internal compulsion, or did someone tell you that you needed to? And you got your PhD from Madison?

I was encouraged by the department to pursue a PhD.

In June of 1966 I enrolled at the University of Iowa and I received my PhD from Iowa in August of 1969. I do *not* have any degree from Madison.

When were you and Barb married? And how about your children? When did they come along?

I married Barbara in February, 1960 our children are Michael (Dec. 1960), Daniel (Nov. 1961), Amy (May 1964), Peter (May 1966), and Angela (April 1969).

Over the years, did you notice a big change in the University/University community?

When I started at Oshkosh the school was growing rapidly. Many new faculty were hired each year. Many students were first generation college students. Some administrators thought that the size of the student body would continue to grow linearly. However, Student enrollment reached a peak in the early 1970's. The department and university were overstaffed. Some non-tenured faculty were not retained. In some departments tenured faculty were released. There were no new hires. Faculty mobility was very limited. Faculty morale was low during the early to mid 70's.

Over the years, did you find that the teaching of mathematics has changed?

The teaching of mathematics has changed significantly. There were no calculators or computers available when I started. Graphing functions, working with large data sets, and computations were time consuming and not easily done. Today faculty and students have powerful tools at their disposal.

Did your expectations for the students change ability-wise or activity-wise over the years?

I always had high expectations for my students.

As for your own professional career, what areas of mathematics did you study?

In graduate school I had a good dose of algebra, analysis, topology, probability, mathematical statistics. I have also studied combinatorics, discrete math, and probability & statistics paradoxes informally.

In all your years at Oshkosh, did you work at research in probability?

I did limited research in probability.

How long were you department chair?

I was the department chair for fifteen years, 1976-91.

When I think back to your career, a couple of things really jump out at me: your work with math competitions and cryptarithms. Can you tell me about that?

Sometime in the 70's I started writing and choosing questions for the Wisconsin Section High School Contest. Bob Prielipp got me involved with the Contest. I continued to work on the contest until 2004. For the past ten years I have worked on the AMC 8 (formerly the American Junior High School Math Exam.).

From 1976 till 1986 Bob Prielipp and I were the editors of the "Problem Department" of the journal *School Science and Mathematics.* In 1979 Bob and I put together a booklet for SSMA entitled *Cryptarithms and Other Arithmetical Pastimes***.**

What do you think does make a good problem? What makes a good solution?

A good problem is one that can be simply stated, and catches your interest. You don't immediately know how to attack it, but it leads to other interesting ideas and questions.

A good solution is one that shows insight into the problem–one that avoids getting bogged down in computations and/or symbolic manipulations.

Do you have an all-time favorite problem?

I have several favorite types of problems. Examples: Probability problems with surprising answers such as "car and goats", "three way duel", "variations of the birthday problem", "variations of Simpson's Paradox", "monkey, sailors, & coconuts"; "Binary Curiosities"; I could go on and on.

What do you think is the best part of mathematics and being a mathematician? How about the worst part?

Mathematics is a field with unlimited questions. There are countless "elementary" questions one can work on and explore. No matter how sophisticated or unsophisticated your math background, there are unlimited challenges for you to pursue. Of course there are questions of a highly technical nature for those with advanced specialized training to pursue.

What does your wife think of mathematics?

She doesn't spend much time thinking about mathematics. She puts up with me.

Are you more practically minded or more given to the imagination?

I don't know the answer. I'm probably somewhere in between.

How about your family, your kids? Did any of them show any promise in mathematics?

I encouraged them to take all the mathematics that they could. However, none of them had or developed a passion for mathematics.

What was UW Oshkosh called originally?

I am not sure what UW Oshkosh was originally called. I do know it was called Wisconsin State Teachers College, Wisconsin State College, Wisconsin State University, and University of Wisconsin.

How would you describe what you do to someone outside your field?

I'm retired. When I was working I told them "I teach all kinds of mathematics courses ranging from very elementary to advanced undergraduate, I try to learn something new in every class I teach, I try to solve problems, I try to create good problems, I try to have fun doing so.