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OH 412-20

Interview with Dr. William (Bill) M. Myers, Jr. (WM)

Department of Mathematical Sciences
The University of Montana
Missoula, MT 59812

by

Charles Myers (CM)

WM: This is a class you're taking?

CM: Yes.

WM: This is a history. You want to get it finished by the end of the semester?

CM: Oh, I probably won't do that.

WM: Uh-huh.

CM: I imagine we'll still be transcribing and stuff. It'll take us a long time.

WM: Uh-huh.

CM: This is what we have, you know, factual documentation on yourself, sir.

WM: Uh-huh.

CM: If you would just look that [That is a brief vita that is included at the end of the transcript.] over please and let me know if it's right or wrong.

WM: Yup, okay.

CM: We nailed you, huh?

WM: Yeah.

CM: Okay. This is the interview with William M. Myers, Jr., past faculty member from the University of Montana mathematics faculty. First question: Why did you choose to become a faculty member at the University of Montana?

WM: Well, it's a long story. Do you want to tell the whole story?

CM: We got a lot of tape.

WM: Okay. Well I was a graduate student finishing, almost finishing a Ph. D. at Ohio State University in the summer of 1949. And on the spur of the moment, I was invited to attend, mathematics meetings in Boulder, Colorado, was in August of '49. And, as I say, on the spur of the moment I decided to accept the offer to go with some friends to attend the meeting. I'd never been west of the Mississippi River, and I thought it'd be an interesting travel venture. I attended that meetings and found that the mountains were very interesting. And a year later my wife and I bought a car—our first car—and we traveled, took a trip to the West, decided that if the opportunity came to live in the West, we'd accept that offer. We'd do that. And fortunately, Dr. Harold Chatland, who had been a visiting professor at Ohio State while I was there, knew me. And he was seeking new staff members. He gave me an offer to come to Montana, which I was happy to accept. I've been here ever since.

CM: All right. It was then just a kind of spur of the moment thing.

WM: Yeah, it was right at the end of summer quarter at Ohio State, and one of my colleagues, a fellow graduate student lived in Colorado. And he wanted to go to staff meetings and also to visit his folks in Denver. I had planned to do something else during the break between them getting out at the end of summer quarter and the beginning of fall quarter. But, when they asked me if I wanted to go, it was a spur of the moment decision. I made the decision and I haven't regretted it, so...

CM: Now, you say that Dr. Chatland influenced you. Did he—was he able to hire you, kind of, in the situation? Or offer you a position himself?

WM: Yeah. He was chairman of the mathematics department here at the time.

CM: Oh, okay.

WM: Yeah.

CM: As you think back, who was the most influential person in helping you choose mathematics as a career?

WM: Well, I can think back. Well, I became interested in mathematics when I was a kid. I was ten years old. My parents had, who went to the University of Cincinnati, had a couple of mathematics books, algebra books. And there were problems like John and Mary's, sum of the ages of John and Mary is 36, and John is four years older than Mary. How old are Mary and John? And puzzles of that sort interested me in mathematics. At first I just solved a problem like that by trail and error. And then I got to doing the way the book did it. Let x be John's age; Mary's age is $x - 4$, and so on. So that was my really first interest in mathematics. When I was in high school I had a very good geometry teacher. Was very enthusiastic, lively and a very intelligent and excellent teacher. Her name was Evelyn Ladle [or Lydell]. She made mathematics interesting, too. And I had the opinion, I had the feeling that I had some ability in mathematics and so that's what decided me to go into mathematics.

CM: What were your goals when you first started?

WM: At what level?

CM: Well, let's see. That's a good question. How about, what were your goals when you first started teaching at the university?

WM: Well, I guess my goals were to do the very best job I could do at teaching mathematics. Also, to learn more mathematics. If a person doesn't learn more mathematics, or in any field of endeavor... If you're going to teach you have to keep learning. And so I wanted to teach mathematics as well as I could and learn as much more mathematics as I could.

CM: I believe you. Do you think you've accomplished the goals or have they been altered some, or . ?

WM: Well, my interests in mathematics have changed. Matter of fact, they've changed since I've retired. I'm more interested now in a different branch of mathematics. Interested now in numerical analysis. In my retirement I enjoy writing numerical analysis, writing programs in numerical analysis on the computer. For such things as approximating solutions of partial differential equations and finding latent roots or so-called eigenvalues of matrices, and so on. It's very interesting and I enjoy it.

CM: Well, good. Then you're still pretty active in, in mathematics as far as what you do. Mathematics still occupies a lot of your time or at least your thoughts?

WM: Yeah, you can say that. I've, there are, I've other interests too.

CM: Sure.

WM: But I still enjoy using the computer to do mathematics in the same way as kids enjoy using the computer with video games. That's, I think, maybe an apt comparison.

CM: Now I'm sure that you would have a lot of this knowledge. My fourth question is what changes has the department gone through since you have been here? And, kind of a sub-thing, were you involved directly in those changes? And what did you think of them? But if you could, maybe enumerate some of the things that have been the radical changes that the department has gone through.

WM: Well, in 1952 when I came here, there were four of us on the staff. The three teaching assistants, we called them graduate assistants then. And, I'm not sure exactly how many mathematics students we had during the year. We'd have one calculus class with maybe twenty students, starting in the fall. I think maybe we'd have another calculus class with twenty students starting in winter quarter. So, very few students taking calculus and beyond. So the number of faculty members has increased tremendously and the number of graduate students likewise. The number of students taking mathematics has increased a great deal. Another change that's taken place is, in recent years, we've had mathematicians coming from other countries. If I'm correct, at the moment, there mathematicians from Russia, Bulgaria, Germany and the Netherlands on the staff, which gives the mathematics department a more international flavor. In past years, we've had faculty members who grew up in Montana, who, and went through the University of Montana and Montana State University, and who later came back to join the staff. So, that's one difference. Another difference is the change in curriculum. Some of the courses that were taught back in the 50s are out of, not in vogue any more. Whereas new disciplines of mathematics developed.

CM: Yeah, I know that. I got my undergraduate degree in early 70s. And the difference in that 25 or 30 years has changed an awful lot of curriculum anyway. Now, was the mathematics department always the same department? Wasn't there a period of time in which it was, there were other departments in with it or it was in with other departments?

WM: For a while computer science was with the mathematics department. But that was just for a short while—in the 60s for just, perhaps, three or four years. When the computer science department was small. And there weren't very many students taking computer science. Pretty soon people realized that computer science was a coming thing and with many students taking computer science there was a need for more staff members and a separate department which was a good thing.

CM: If you could identify what you think was the best asset of the department of math sciences at the University of Montana, what would it be?

WM: Best asset, hmmm. Well, I think I would say that members of the mathematics department worked hard to provide a good education in mathematics for students at the undergraduate and master's degree level. And I think that the mathematics department here, at that level, at those levels, was, perhaps, better than what one would find at a larger university where the undergraduate student could take all of his mathematics courses and never see a professor, but rather receive instruction from graduate students.

CM: Was the math department always housed in the same building?

WM: Yes.

CM: It's the same place. Has the building changed much? Can you recall?

WM: Oh, some of the rooms have been remodeled for various purposes.

CM: Well, yeah. Yeah, I know that they have computers in a lot of them now so they had to do a lot of, probably, electrical remodeling and such.

WM: Regards to that last question, I've just remembered now. Back when I first came here, and for, oh, probably up until some time in the middle 60s, the physics department was located in the same building. On the first floor of the math, the current math/physics building.

CM: Was that a sub-department? Were they under the . ?

WM: No, it was a separate department.

CM: Oh.

WM: The mathematics department was on the second floor and third floor. The physics department was on the first floor and in the basement. And the room that is the commons room now, where the coffee room is, that used to be the physics laboratory.

CM: Huh, okay. So where was the coffee room?

WM: The coffee room? Well, if you enter the back entrance...

CM: Oh, okay, yeah.

WM: And go up the short flight of steps and it's the first door on the right.

CM: Oh, yes.

WM: What the room number'd be—112 maybe. I'm not sure. No, its' 103; I guess—101, 102, whatever, something like that.

CM: Well, 6 you've partially said something about and basically covers the areas of mathematics that you're especially interested in. Are you currently working on anything in research that you plan to publish?

WM: No.

CM: You have truly retired, then. You're doing it for your own sake and fun.

WM: Yeah.

CM: That's great; that's great. Have you done research in some areas that I could find some?

WM: No. I was more interested in teaching at the university.

CM: A man after my own heart. I really truly believe that teaching sometimes gets the short end of the stick at the university. Good. Since we had been working on problems that Hilbert posed at the beginning of the century, one of these questions is to ask you what questions you might suggest for a year-2000 Hilbert list of problems to kind of direct the thinking of mathematicians or mathematics educators.

WM: Well, I don't have a good answer for that.

CM: Well, I actually probably should have contacted you earlier with that question, because that's something that would be very hard to come off the top of your head with.

WM: Yeah, exactly.

CM: ..something of that nature. Well where do you think maybe that mathematics is going in the next century? You've seen some of the changes in the last forty years here, uh, fifty years. What do you think is going to happen maybe at the college level? Or, if you care to venture to guess, at the high school level?

WM: Well, I think that computers are going to have a big effect on teaching of mathematics. Computers can be used to find approximate solutions of problems very quickly. And, in past times, theoretical methods existed, but they were extremely difficult to carry out with pencil and paper because it should take a lifetime to do what a computer could do in two or three minutes. And I think that's going to

influence the teaching of mathematics. I can see that the teaching of calculus that it'll be, teaching of calculus will be much more computer-oriented than it was in the past. Maybe much more than it is right now. I'd guess.

CM: Yes, I just did a presentation on working with large primes and cryptography. And, of course with the computer now, they have been finding Mersenne primes that are two million digits long. It's amazing.

WM: Yeah.

CM: But, of course to some people who don't truly deal with mathematics but rather just with numbers, that's the same think, because the computer will do just that for you. And, you don't really have to know an awful lot of mathematics. You have to know some, of course, to know what you're doing and what you're trying to find—computer does all the work.

WM: Year. And then with the computer, too, you have to be careful because they say computers don't lie. But, nevertheless, there's a lot of rounding off and truncation errors. Simply the fact that the computer goes from the decimal system to the binary system and back, a problem, problems there. If you consider the harmonic series $1 + 1/2 + 1/3 + 1/4 + 1/5...$ (you get the idea) $+ 1/6 + 1/7$, every computer in the world will tell you that that series converges. But, of course it diverges. So, computers can only give you very accurate approximations, but sometimes they can lead you astray. So you have to be careful using them.

CM: So, you said that the content in the mathematics courses has changed over the course of your career and part of it is based on technology available. Are there any other reasons that you could say that the content has changed?

WM: Well. When I was in college, courses such as Theory of Equations was taught. It's out of the curriculum now at most universities. Spherical Trigonometry is another course that was taught. NO one ever teaches it any more.

CM: We've lost some of the courses., Have they been incorporated into others?

WM: I don't think so. I don't think so. Well, spherical trigonometry is still taught to people who are interested primarily in navigation. People, naval officers would have to study spherical trigonometry, for example. But, in the main, mathematics students, in general, don't study that. Theory of Equations—I don't know where one would find that. It's available in the literature. But it's not commonly taught as a course. Other branches of mathematics—functional analysis. When I was at college, it really didn't exist in the curriculum. Now it's very important. So, another example.

CM: As you were teaching here at the U of M, did you see some of that happening with courses that you maybe taught when you first came and they changed over the time?

WM: Another course that was taught here was Mathematics of Investment, where students would learn about compound interest and annuities and so forth. That hasn't been taught for thirty years. Probably is taught in the business school now. But that would be the only place.

CM: Well, I think that we've covered those types of questions. I have a final question that I thought that if you had nay favorite anecdote or memory that you're reminded of, or maybe reminds you why you enjoy being here, you might relate that.

WM: Still having to do with mathematics?

CM: Well, not necessarily. But.

WM: Well, one thing that I can say about Missoula is that it's a good environment— maybe not as good now as it was at one time. But it was a great place to live and a great place to raise a family. And I've enjoyed the opportunity of living in Montana. And, I've enjoyed the opportunity of being part of the mathematics department. And, many of the....well...I've enjoyed having the opportunity to teach mathematics and to learn mathematics for the last forty years.

CM: You had mentioned maybe a couple of people that we should pay particular attention to in looking to find out information of mathematicians of Montana in this century. You again mentioned Harold Chatland and was it Archie Merrill?

WM: Archie Merrill, yeah.

CM: These were people who were probably here when you first came?

WM: Yes, that's right.

CM: Is there anybody else that you knew personally that you think (end of tape).

William M. Myers, Jr.

B. A. Denison University, 1946

M. A. Ohio State University, 1948

Ph. D. Ohio State University, 1952

Employment:

University of Montana, 1952

Assistant Professor (1952-1956)

Associate Professor (1956-1963)
Professor (1963-1987)
Chairman (1962-1969)
Emeritus (1987-)

Dissertation Title: *A functional associated with a continuous transformation*
Other works: articles in *Pacific Journal of Mathematics*