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OH 412-07

Interview with Dr. Charles Bryan (CB)

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

by

Charles Myers (CM)

CM: Would you please look at that [That is a very brief vita that is at the end of the interview.]? And, if you could fill in the missing pieces there that I was unaware of and then check the other dates and such. Let me know.

CB: Okay.

CM: MSC, is that, uh...?

CB: Montana State College.

CM: Ah, yes.

CB: You see, when I graduated, this was MSU.

CM: Oh, that's correct. Okay. So, you got your bachelors...

CB: In Bozeman.

CM: In Bozeman at Montana State College.

CB: And I...

CM: In engineering physics?

CB: Yeah. I picked up my masters in mathematics at the same time I got my Ph. D. I'd already fulfilled all of the requirements and I just never paid the fees to get it. So, I

paid the fees to get it, because somebody'll want to know if I got my masters at the same time I got my Ph. D.

CM: Oh, well, that's different. Is this correct? About the time you came to the University of Montana in '66?

CB: That's right. Do you want to know where I was before that?

CM: Well, I definitely would. If you want to tell me now, or later on in the interview would be fine.

CB: After I got out of graduate school from the University of Arizona I taught at Arizona State. For, let's see..., I started in 1963. December of '63—the winter semester of 1963. And, I taught there for... until I came to the University of Montana.

CM: So, '63 to '66?

CB: '66.

CM: And that's Arizona State?

CB: Yeah.

CM: Now which one is where?

CB: Arizona State's in Tempe, just a suburb of Phoenix and the University of Arizona is in Tucson.

CM: Okay. Well, that's a decided difference in climate; isn't it?

CB: Yes, it is.

CM: Go from Bozeman to Tucson and Tucson, or Phoenix, back up to Missoula.

CB: Actually the climate here isn't all that much different than it is in Tucson, except for the rare times we get a bunch of snow. And we do get a bunch of snow. Tucson has a relatively mild climate most of the time. Phoenix has got a hot climate. It's in a desert.

CM: Now, I can probably do a better job on these, if on some things I'm not sure—like those probably didn't mean much to you.

CB: Well, those chairman dates—I was chairman twice.

CM: Oh. I will try.

CB: I can't remember the dates myself. The other date was earlier, I believe.

CM: Okay.

CB: Uh, and then,

CM: I wasn't sure about the emeritus status.

CB: I wasn't aware of the fact that they ever removed the emeritus.

CM: I wasn't either.

CB: I don't think they do, do they?

CM: Uh, other than, if you're carried in the directory or not. And, I don't know exactly what they would do with that.

CB: I don't know. I have no idea about that kind of stuff.

CM: Okay. I looked up your dissertation title.

CB: Okay.

CM: I found out what you had done your dissertation on.

CB: Okay and I published two or three other papers. And I don't even remember their titles now. But, they had to do with the same kind of things.

CM: Do you recall what journals were associated, they were in?

CB: One of them was in an Italian journal. I don't even remember the name. It's been a long time.

CM: Sure.

CB: I've been out of mathematics for ten years.

CM: Sure.

CB: And, it was in Italian journal. I can't remember the name of it now. And the other article I published was in a SIAM journal, which is not a foreign journal. It's the Society for Industrial and Applied Mathematics. And it had to do with integral equations.

CM: Well, Dr. Lott's pretty good at finding a lot of these things and finding out information. Plus he has access to like presidential papers, and things that the department might have. He can ask specific questions. And he can get some information that we don't actually have. And this is probably information that would be on record.

CB: I'm sure it's on record somewhere. I mean, if they had to have it. Somewhere when I was throwing things out.

CM: Do people still call you professor? Is it...? Your close friends, of course, call you by your first name.

CB: I, hardly any, sure. Most of the people I run into don't even know I ever taught at the university.

CM: Oh, is that right?

CB: Well, see my wife and I own a real estate office here in town. And, I don't really work at the real estate office, but I hang around down there and act important. And, most of the people there find out I was at the university maybe in an off-handed way. They just think of me as my wife's helper. My wife was in the real estate business for a long time before we bought it.

CM: Well, I have a set of questions I'd like to ask...

CB: Okay.

- CM: . t to get to some information we would like to deal with in this. If everything comes to fruition, you should be able to see a kind of a timeline situation—how the people who came to and/or taught at the University of Montana in the mathematics department progressed through the ages. And the span of time they were there and such. Besides that, we hope to include a short biographical information. And, then oh, some other information—anecdotal things and such, and how the department itself has progressed. So the first question is, "Why did you choose to become a faculty member at the University of Montana?"
- CB: All right. That's relatively easy to answer. As I told you, I was on the faculty at Arizona State and my parents still lived in Livingston. My wife's parents lived in Helena. And we had three children. And they never got to see their grandparents when we were living in Arizona. So we decided we should come back to Montana. And I didn't want to go back to Montana State because that was too close to my folks who lived in Livingston and it was too close to Helena, too, almost. So, I applied for a job at the University of Montana. And they hired me. Besides that, Phoenix was too hot for my wife and for me it turned out.
- CM: Who was the most influential person in helping you choose mathematics as a career?
- CB: I guess it must have been somebody at Montana State, because I was... At I told you, I got my degree in engineering physics at Montana State and after I got my degree, I started out working on a bachelor's or master's degree in physics And about half way through I decided, Hey, I'd rather be a mathematician. I liked the math courses more than the physics courses. So I started applying for graduate assistantships at various math departments around the country. I got one at the University of Arizona through the National Defense Education Act, which was a three-year fellowship, which allowed me to go to school for three years. And I'm not sure who I could say was actually responsible for it. I guess it was the professors at Montana State. I just like mathematics better than physics.
- CM: Okay. What were your goals when you started here? And do you think they've been accomplished or changed?
- CB: I guess my goals when I started teaching here were to spread the word—the word being mathematics. When I was younger I was, perhaps, more successful in spreading the word. As I got older, and had been here longer, I all of a sudden became more of an administrator than a teacher. And then, after serving a year, or one term, as chairman, I became heavily involved in the teachers' union, simply because I didn't want anybody else telling me what happened. I grew up being anti-union. And all of a sudden, there was a union at the University of Montana. I decided that if there was going to be a union, I wanted to have some input into what they were doing. So, I ended up.. I negotiated two contracts, and I was president of the union for one year. And I learned all kinds of things about the university that I wish I'd never known. And, in the process of doing that, I got burned out. I finally just said to heck with it and went into the real estate business with my wife. So, yeah, I guess, I, in summary, I enjoyed teaching mathematics. I didn't enjoy all the other things I had to do at the university.

CM: But you are not the first person who has been .who I've interviewed here that's retired from the university that, that didn't have that sentiment about teaching, was the favorite part of what they did at the university, for sure.

CB: Right.

CM: Which changes has the department gone through since you had been here .since you came? That you saw while you were here?

CB: Well, probably the biggest change and the one that I liked the most was the institution of the Ph. D. program. And the change in the Ph. D. program through Bob McKelvey's grant. I'm sure you've heard about Bob McKelvey's grant. We supported about ten teaching assistants for about, oh, probably six years, through the auspices of his grant. It turned out that got our Ph. D. program off the ground, really. I believe; my memory is terrible. I think we already had a Ph. D. program, but it was very ineffectual. And Bob came in with his grant and it allows us to support some graduate students. If you don't have any graduate students, you can't have a program.

CM: Do you recall a time frame on that?

CB: It seems like it was in the 70s—the early 70s. You can check and see when he came and the next year we had it.

CM: Oh, right away.

CB: Yeah, he actually came with the idea.

CM: Were you pretty directly involved in that?

CB: I turned out three Ph. D. students. Actually, I should have put that down on the other things. That's probably one of my accomplishments.

CM: Sure. Well, I don't know what order any of this is going to go in.

CB: No, I understand that.

CM: I understand.

CB: People always .When I was on the faculty, everybody wanted to know why I didn't publish more—especially people in other departments. One of the reasons I didn't publish more is, here's an excuse, is the publication of mathematical papers is the publication of ideas. And, it's hard to come up with ideas, original ideas. I'm sure that's true in other disciplines, but, it's more so, I believe, in mathematics. Essentially, I had a good idea every two or three, every year or two, and I'd give it over to a student. And I would help him do it. And, to me, that seemed like a reasonable thing to do.

CM: Yes.

CB: And sometimes people weren't too impressed with the fact that a professor would turn out a graduate student. But that didn't seem right. It seemed like a very good idea to me. It seemed like that was what my job was. But, what do you know!

- CM: If you could identify the best asset of the department of math sciences at the University of Montana, what would it be?
- CB: Well, the best asset. Well when I first came, I think it would be the way we got along with each other. And we didn't fight with one another, except for the fights we had to have. And after, we were more like a family. We survived. If we had a fight, we'd settle the issue one way or the other. And then we'd proceed along and continue to get along with one another. I'm not sure it's still that way anymore. I'm not there anymore.
- CM: Sure.
- CB: I could detect. I could detect it was changing as we hired more and more and more. as we began to hire people. And we were starting to do that before I left. You have to realize that most of the people who were there when I retired had been there for twenty years.
- CM: Was there quite a change in the numbers of people from the mid-60s...?
- CB: No. I think, probably Johnny Lott and Rudy Gideon were probably the only permanent people we hired—until about '85 or '86. I'm not sure what year it was. I can't remember too many people coming in. But, on the other hand, I don't think about that a great deal either.
- CM: No. So, in the mid-80s, then we began expanding some.
- CB: We didn't expand. We just started to have turnover.
- CM: Okay. I see what you're saying.
- CB: I'm not sure it's expanded much still. I have no idea what the faculty size is, but I suspect it hasn't expanded a whole lot in size. One of the things that we always dealt with---and, again, it's because I was more of an administrator than I was a teacher--- is . We always dealt with the fact that the administration would not allow us to expand. They always told us there was absolutely no money to hire staff. And, we'd say, we're going to have to hire staff. We're going to have students. No, there's no money to hire staff. There's no money to hire TA's. There's no money for anything. And then we would have registration winter quarter, or fall quarter or fall semester it would be now. That was another thing. I didn't like the semester system. But, we were still on the quarter system. Fall quarter we would start registration and guess what? We'd have sections we couldn't cover. And, all of a sudden, they'd give us money to go hire people. And it isn't easy to hire people. What do you get? You get high school teachers that are retired. Or you get whatever you can find. That got to be very frustrating. I suspect it's still happening. Somehow or other they'd come up with money when they had to have it for classes.
- CM: Okay. And you personally, sir, what area of mathematics were you most interested in?
- CB: I was a numerical analyst.
- CM: Has that occupied any of your time since you've been retired?

CB: Very little. Occasionally I end up doing something that essentially is non-linear and I go use some of the techniques I learned. Essentially I like mathematics. But I figured if I was going to leave the university at the age I was, I'd better leave mathematics, too. Because there was no way, there was no way I could become a practicing mathematician without being around mathematics.

CM: Yeah, I understand.

CB: So I gave away all my books. In fact, I gave them to the math department when I retired.

CM: Had you done research in other areas besides analysis?

CB: Not really. Numerical analysis was the only thing I'd ever wrote papers in. When I was a graduate student I did work which was in numerical analysis before I even knew I was in numerical analysis. I did some work consulting for a civil engineer at the University of Arizona.

CM: Something in the course, now, dealing back with our project and our class. We were trying to think about things that maybe people who had some background in mathematics might suggest either like a new problem—like Hilbert's problems.

CB: I don't think there are too many of us around like Hilbert.

CM: Or maybe just where do you think mathematics is headed in the next century?

CB: I think the nice thing about mathematics is nobody knows. And one of the things that people, when you talk to people, when I was at the university and told them I was in the math department, they would always tell me about mathematics. The standard comment was they always liked it but they never did well in it. Or, they never did well in it, but they always liked it. Which were contradictory statements, I think. But, one of the nice things about mathematics is nobody knows where it's going, which is where I started, because problems come up. People try to solve real world problems. And when they're trying to solve real world problems, they open up new branches of mathematics. I mean, they.. .most of mathematics was generated to solve real world problems, although most mathematicians won't admit it. Now my history and background is coming through. But, even the most abstract mathematics, the ideas that generated that abstract mathematics, were really generated to solve real world problems, which may have been number theory, which is another branch of mathematics. But it was real world. They were dealing with the integers. And my feeling is most of the areas of mathematics had their genesis in applied, in applications. You can hardly tell anymore. But that's where mathematics grows from. People are interested.. .people are interested in an idea to solve a problem. In order to solve the problem, they generate some new kind of mathematics. And it's happened since I was in mathematics. There are things like chaos theory, which I'm sure you've heard of and I don't know very much about. But, it's essentially the idea that everything is not predictable. And most of mathematics is built on the idea—most of physics is built on the idea that everything should be predictable. And my understanding of chaos theory is that, hey, everything isn't predictable. And things

are not nearly as stable as everybody would like them to be. So you get things like chaos theory being developed.

CM: So your feelings would be that will continue to change courses in mathematics as things develop like that.

CB: Yes, that's right. And, I would hope it would.

CM: Well, that basically covers most of the mathematical type questions, historical types of things. Can you recall if there was any change in the actual mathematics department? Was it always just the mathematics department? Was it always...?

CB: I'm not sure what the actual structure was. But physics used to share the building with us.

CM: Okay. So it was in the same building.

CB: And, I think at one time they were put together. But, you'd have to go back prior to my time. When I came here, the physics department was in the building, but they were on a different floor. It's hard to believe there could be two departments on different floors in that building given the size of the building. When they built the new science building, which is not a new science building, but the one that's over there in the parking lot, physics moved over into that new science building. Mathematics took over the whole building, which is an old dorm.

CM: Would you have any favorite anecdote or memory that might remind you why you enjoyed working or living here?

CB: No.

CM: Would you have some other anecdote or memory you would like to share with us?

CB: Actually I have to work hard at not sharing most of my memories. That sounds kind of bad, but, when I left the math department, I was not a happy camper. And it had nothing to do with the people in the math department. But, now I live next door to the guy that was dean of the graduate school when I was there. He lives right next door to me and he and I are very good friends.

CM: Is this a fairly new development?

CB: Yeah. Most of the houses...The house I'm in was built in 1996 or 7, I can't remember.

CB: That's not appropriate. That's an aside that I told you. I get along a lot better with dean.

CB: Okay. When Keith Yale was chairman, we had one of our—I'm not sure what word I should use to describe it—almost our biennial, or every two-year study to decide what we should do to prevent duplication within the university system.

CM: Okay.

CB: We were supposed to tell the administration so they could tell the Board of Regents why they shouldn't abolish the Ph. D. program in mathematics at the University of Montana because they had one in Bozeman too. So we had gone, I mean, we...that

was the third time we had gone through it. And the principal reason was, this mathematics department is a large service department, and we teach a lot of classes to a lot of people. And they can't afford to have enough fulltime faculty to teach all those people. So you're going to use graduate students to do it. And our graduate program was designed to develop graduate teachers for universities and colleges. So, teaching was a big part of what we were trying to teach our students how to do. So we would tell the administration, the regents, whoever asked, that it's going to cost you money to abolish our department. So Keith went over and told Koch, who was president at the time, that it's going to cost you money to abolish our department. He says, "Don't give me that. I'm an economist. I know better than that. You can't give an argument like that." Keith came back and said, "What are we going to do? He won't let us use that argument. We've used it twice and it's worked and he says you can't use it." And I finally convinced him to use it anyway, even though he [Koch] told him not to use it. Because as soon as he looked at the argument, if he would, he'd find out that it was right. And he'd claim it was his own. And guess what? He did use it and did claim it as his own. It was that kind of.. .That's the kind of thing I was talking about.

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Employment:

Arizona State University, 1963-1966

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