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Yael Greenberg (YG): Today is Friday, March 21st, 2003. My name is Yael Greenberg, oral history program assistant for the Florida Studies Center. We continue a series of interviews in our studio here in the Tampa campus library with USF faculty, students, and alumni in order to commemorate 50 years of university history. Today, we will be interviewing Dr. Marcus McWaters, who came to USF in 1966 as an associate professor in the College of Basic Studies. Good morning, Dr. McWaters.

Marcus McWaters (MM): Morning.

YG: Let's begin by you taking us to the year you arrived in Tampa, and what circumstances brought you to the University of South Florida.

MM: Sure. I have to make a brief correction. I came as an assistant professor, not an associate professor, in 1966. And I came from the University of Florida, in Gainesville, where I had just gotten my PhD. At that point, I was interviewing in a variety of places. The University of Paris was one, University of Maryland, University of Houston, and George Washington University, if memory serves. And I had no intention whatsoever of relocating to USF, which was a burgeoning young school with no research faculty whatsoever. And I was contacted by the chair at that time of the mathematics department, who—his name was Frank Cleaver, and he asked if I would come down and interview for a position here, and I declined. He was persistent and asked if I would come and at least give a talk, and he would put me up, over in Indian Rocks Beach, in a very nice place, and I could enjoy a weekend and just give a talk on Friday. So I agreed to do that.

I came down and liked very much the atmosphere at USF, but still felt there was no research program here, and probably I would be better served to go elsewhere. Professor Cleaver called on a regular basis to find out how my interviews at other institutions were going and continued to press me to come to USF. Finally, he said that he was moving out of his house and that if I would come, I could move in, take over the ownership of the home, and just make the payments that were due from that point on. That was such a good offer that I thought I might come for a year. So I turned down the other offers that I had at that time and came to USF expecting to be here a year or two at most, and then move on.

As it turned out, I liked the University of South Florida very much, and the result is that I've been here since that time. When I came, I came to the College of Basic Studies. There was a math department in the College of Basic Studies, but the sciences were in the College of Natural Sciences, and mathematics was housed in the College of Natural Sciences. The chair, actually, that I

came to work for was a man named Don Rose, not Frank Cleaver at all. And the reason for coming into the basic studies college instead of the liberal arts college was that basic studies could give me their entire travel budget. They also were able to give me a higher salary line. So they assured me that they were going to develop a research program, that I would be the linchpin in the beginning of that program, and I agreed to come under those circumstances. I also was told that I could teach the upper-level courses, and I wouldn't have to teach courses in the basic studies college, even though that's where my appointment would be. So, with those considerations, I came. And it was a very nice beginning, and it stayed to be a very pleasant way to spend a lifetime.

YG: Describe the first time you saw the USF campus. What did the campus and the surrounding areas look like?

MM: Well, it was not a busy place when I first arrived. I arrived in the middle of the summer, 1966, and the campus was fairly deserted. I had seen it once before, but I had seen it on a day when there were thunderstorms and had not really appreciated the spacious look that it had at that time since there were no—buildings were not pushing on one another. There was no University Mall. Fowler Avenue was two-lane. There was very little by way of strip mall or anything else in the area. I located off of 22nd Street, which is just a few blocks off campus, to the, I guess, the west of Bruce B. Downs [Boulevard]. And I was able to ride my bicycle over every day. There was no traffic. It was maybe a 10-minute ride back and forth to campus, so it was very convenient. The student population was not overly large. The classes were 25 to 30 students in size that I had. And it actually was a very pleasant beginning.

YG: What kind of courses did you teach in 1966?

MM: Very much the same kind of courses we teach today. Math has a certain permanence that is hard to resist or overcome, and so we taught courses in college algebra, finite math, linear algebra, differential equations, and, on occasion, topology.

YG: Where was your office located?

MM: In the same building it's located in today, the physics and math building.

YG: Was the depart—you said you were part of the College of Basic Studies?

MM: That's right.

YG: Was it a large college at the time you arrived?

MM: I don't remember the size of the college, in all honesty. It seemed to me that it was fairly large, probably because we taught so many other freshman courses. I did not much identify with the college. I really came as part of a program, and I associated with the people in the natural science college and the math group. The people in the basic studies college, actually, by and large had master's degrees, not PhDs, and they were teaching large numbers of college freshmen. And so, though my appointment was in the College of Basic Studies, my affiliation really was with the math department in the natural sciences college.

YG: Who was the president of the university when you first arrived in 1966?

MM: Gosh, if memory serves, it was John Allen, but I couldn't swear to that.¹ It was not something

¹ John Allen served as president of the University of South Florida from its inception in 1957 to his retirement in 1970.

that I was particularly interested in at that point. Generally, the academic programs were the focus, and the administration simply sat above you and, hopefully, didn't get in your way.

YG: How has the department changed since you arrived in 1966?

MM: Well, of course, the department was originally two departments, a basic studies math department and a College of Natural Sciences math department. Those merged when the basic studies college was eliminated and when we gained the College of Arts and Sciences. The people who had master's degrees who were part of that department left. We have all people with PhDs now. Virtually everyone has a research assignment—there are a few exceptions. We have instructor lines now, which we didn't have when I first came into the department. We had only assistant professor, associate professor, full professor, and adjuncts. The adjuncts, of course, are still here in large numbers, which is unfortunate, but we have a much stronger research group now. In fact, our approximation-theory group is probably ranked first, second, or third in the world. And our discrete math group is very strong. There were no real strong identifiable groups when I first came to USF.

YG: When you first came here, how long did you think you would be here?

MM: One or two years. And, of course, it didn't work out that way.

YG: Thirty-seven years later—

MM: That's right.

YG: —you're still here. Were there any women teaching mathematics in those early days?

MM: Yes, but they had master's degrees, not PhDs. We had no one with a PhD. Jane Reed, who is still here at USF—I forget where in the administrative ranking she is, but she is still here at USF—was one of the math department master's degree instructors. Adjunct professor, I think, was the actual title.

YG: What were some of the early educational philosophies of the university when you first came here in 1966?

MM: Well, the way it was presented to me was that there was a liberal arts mission to broadly educate the student body, but that there was going to be a growing emphasis on bringing scholarship along to the PhD level, to where you had graduate programs that would be first rank and compete well with others in the country. So it—the language hasn't changed much over the years. We have probably come further along that path, though we do have, in the College of Arts and Sciences, 13 PhD programs and we are well recognized in a variety of these. But the philosophy, I don't think was quite—was very different.

YG: You mentioned that you had faculty interaction with professors in the natural sciences area.

MM: That's right.

YG: Did you interact with other departments on campus in those early days?

MM: Not professionally. I did have friends in the philosophy department. I was at one time a philosophy and English major and had some interest that lingered. But these were personal contacts, and they weren't—they had no professional value.

YG: Was faculty interaction among different departments something that was encouraged when you first came?

MM: No, it was not something that was mentioned. It certainly wasn't discouraged, but it was not something that was actively pursued. The interdisciplinary thrust is a much more recent thing.

YG: How did USF differ from other institutions you had worked at? I think you mentioned the University of Florida.

MM: I'd only been previously at two institutions, and not as a faculty member: the University of Florida and LSU [Louisiana State University] in Baton Rouge. And when I first arrived, there was not a cohesive graduate program that was drawing the attention of all the people in the department. So, in that sense, it was very different. The other two departments were mature, established departments, and their graduate programs were well recognized. So we had the task of trying to build a department into a department where we would have PhD students and where we would have our main emphasis as training people to do work beyond the bachelor's degree.

YG: You mentioned this early lack of organization, this early lack of a cohesive mathematics department. What kinds of things were you and the other professors in that department looking to do, looking to teach your students?

MM: Well, it depended very much on your specialty, and there were very few specialties when I first came. Mine was topology and algebraic topology. And so what we were hoping to do was find a core of students who were interested in and had the talent to pursue those specialties. The other specialties at that time—I believe there were a couple of analysts and a couple of algebraists.

YG: Were there things about working at USF that stand out in your mind in those early days?

MM: Well, there was very little professional life when I first arrived. If you had a seminar, a few of the faculty would come, out of courtesy—when I first arrived—to see who I was and what I was going to do, and what I was interested in, and a few graduate students would attend. But, by and large, whoever ran the seminars in those times carried the full burden of delivering all the material and trying to educate the people who came. It wasn't so much a cooperative effort at that point as it was an individual effort. That, of course, has changed quite a bit over the years.

YG: I want to talk about your students for a minute, and your early students. What were your early students like? Were they interested in the courses you were teaching? Were they interested in mathematics in general?

MM: The undergraduate students haven't changed very much—in my view—over the 37 years that I've been here. They—at the very lowest end, where they take math courses simply because it's a requirement for the degree, there still is very little interest in doing mathematics or in learning mathematics, and it is a challenge to overcome [the] disinterest and boredom that permeates a lot of these lower-level classes. I suspect that's an ongoing challenge. I don't see it dissipating in the future. But it's one that certainly I am much more accustomed to now than I was then. It was a frustration when I first arrived; it's a fact of life these days.

YG: In terms of graduate—your graduate students in those early days—how were they different from the undergraduate students?

MM: Well, they hoped to be professional mathematicians, and they were interested in the material. The graduate students that were here when I first came were few in number and not terribly skilled.

The talent level and the number of graduate students has increased many-fold. The students that we get now are quite talented and will be excellent professionals if they continue to work in a way that most of them seem to now. They also come from all parts of the world. And when I was first at USF, I think, if memory serves, that they were 100 percent Americans. And now they are probably 15 percent Americans.

YG: And the rest foreign students?

MM: That's right.

YG: What countries, predominantly, do these foreign students come from today?

MM: Well, they come from the Eastern Bloc countries, and from India and China, but virtually everywhere. They come from Israel. They come from Macedonia. They come from Bulgaria. There are—let's see—African students, about four if I'm correct. But I can't—almost every country has been represented at some time or another.

YG: Why do you think they come to USF in particular?

MM; Well, fortunately, these days, they come for the correct reasons. They identify faculty with international prominence, and they hope to come and work with those faculty members. Getting a PhD from someone—having someone who is a director that has international reputation is very helpful in getting placed in a decent institution for the purposes of being a professor yourself, and that's what they're looking for.

YG: You mentioned that in the late '60s there wasn't—that your students were predominantly American.

MM: That's right.

YG: Were there any minorities or other kinds of people studying mathematics in those early days?

MM: No. And the only minority that has surfaced in any numbers, in mathematics, is relative to gender, not to race. We do have many more women mathematicians these days. But there is a horribly small number of African-American and Hispanic mathematicians.

YG: In those early days, was there a dress code for students and/or faculty?

MM: No. There was one that was rumored. People forever mentioned that they thought that professors had to wear coats. And I checked many times—there was no official code, and I didn't wear a coat.

YG: Your students dressed typical of that time period?

MM: Yes, that's right. The same degree of informality, just different dress codes. But it reflected fashion, not a mandate of any kind.

YG: You mentioned topology and algebra. What other kinds of courses were you teaching in those early days?

MM: Just the undergraduate courses. Those were the only graduate courses that I was teaching. There was an occasional logic course, I think. And I believe I did teach real analysis a few times,

but for the most part, it was undergrad courses coupled with topology and algebra courses at the graduate level.

YG: When did the mathematics department become separated from the College of Basic Studies?

MM: Well, I don't think it ever was part of the College of Basic Studies. I think there was always a natural science college and a basic studies college.

YG: So when did it become separated from the natural sciences college?

MM: Well, the natural sciences college was merged with many others to form this College of Arts and Sciences. And I don't know the year that that was done. But when they did away with the basic studies college and merged several colleges together for the College of Arts and Sciences, that's when the math department became a unified department.

YG: Are there considerably more students today taking mathematics courses than in your previous years?

MM: Probably not as a percentage, but, certainly, there are more because the school has grown quite a bit. But I would think that roughly the same number of—the same percentage of students would be taking math courses. But I don't have figures to support that. That's an impression.

YG: How have your students today—how are they different from your students when you first arrived? Are they less motivated, equally motivated, or really intent on getting the most that they can?

MM: I see virtually no difference at the undergraduate level. Graduate students are much better trained than they were in the early days. Undergraduates I don't think have changed at all.

YG: Politics on campus. Were you aware of any political issues that were going on at the university level or at a national level that was affecting your students and/or USF?

MM: I was not. And I'm a particularly apolitical person. So it was not an interest of mine, and there was nothing from the outside that forced me to pay attention to it.

YG: Race relations. Were you—was that something that was affecting the university?

MM: Not as far as I could tell. At least it made no impression on me if there was a race problem. There seems to be about the same interest in it now as there was then, and I don't really detect a difference. That may be a peculiarity of the math area, but I really have not seen anything that would suggest to me that race was either more or less important now than it was then.

YG: How has the recent shift or move towards research at USF affected mathematics and affected your overall teaching and/or career at USF?

MM: Well, math departments, by their very nature, are research departments, so it has always been an emphasis of the mathematics department to produce professionals who are going to be contributing to the literature. That emphasis has not increased. What has increased is the support that the mathematics department gets from a university in pursuing that goal. The university's interest now matches what has always been a math department interest in getting a group of scholars together who can produce significant results, so that the most important thing has been the ability to hire research mathematicians and to make their lives professionally valuable. That is, to

support their travel to conferences, to give them a teaching load that they can live with, and to make available to them the tools they need to do research.

YG: What was your teaching load like in those earlier days?

MM: Exactly the same as it is now. My teaching load's always been what it is today, except for the fact that I'm a chairman, and so I have a compensation for administrative duties. But as far as what a faculty member's teaching load is, it is the same today as it was then.

YG: How many courses do you teach?

MM: I teach one and one. Meaning, one in fall, one in the spring. The—most faculty teach two and two.

YG: What kinds of—as a chair—what kinds of responsibilities are you responsible for? What kinds of things do you do as a chair?

MM: Well, there are a range of activities. There are activities related to the undergraduate program, to the graduate program, to faculty development, and general staff well-being. So we have a staff of six people, including an office manager. We have a program assistant who handles the bulk of the graduate student processing—the applications and the exchanges between graduate students and our department. Essentially, I am supposed to motivate the committees—at the undergraduate level and at the graduate level—to charge them with activities that need to be carried out and to supervise the carrying out of those activities. We deliver courses to every student at USF since there is a legal requirement for students in Florida to take six hours of courses at the level of college algebra. So we have a large number of undergraduate courses that need to be coordinated, and I am charged with developing a structure that supports those courses in such a way that the students get maximum benefit.

The faculty need to be motivated, supervised, helped so that they can be productive—they can apply for grants—they can work together as a cohesive unit. We need to make our presence felt in the mathematical community so that USF gains the distinction that it should have as a Research I university. And so my responsibility is to push in all of those areas to make sure that we are where we need to be. And if you have more particular things that I could address, I'd be happy to, but that's a general picture of the job description.

YG: How long have you been chair?

MM: This is my fifth year.

YG: You mentioned that you never expected to stay more than a year, or a little bit more. Ultimately, what were some of the elements of USF and/or your department that helped you to stay for 37 years thus far?

MM: Well, for many years I only stayed another year or two. I never had the intention to be here any great length of time. However, I had a family that was growing, friendships developed, networks for the children and for my wife that were difficult to dissolve and undesirable to dissolve. The university, when I was first here, made travel very easy, which was important. Computers weren't the way in which people exchanged information when I—in 1966, and so it was important to be able to travel to meetings. And I had a travel budget that was wonderful. I got to go just anywhere I wanted to go and participate in conferences. And if I needed to go to another university for a month, it was possible for me to do that at USF's expense, and they would help cover the

classes. So my professional life was very rewarding in those early days. So what happened then is that the inertia kept me here, and I'm very glad it did, actually.

YG: You mentioned technology and computers. How has that affected mathematics, and how has that affected mathematics at the University of South Florida?

MM: Well, very few mathematicians depend on computers to do their mathematical research. There are some in computational mathematics, but that's not an area that has developed here at USF. The mathematicians still, by and large, need a pencil and paper or a blackboard and chalk, but that—those are the tools of their trade. What has changed is that now, because of email and because of the ability to Telnet files, rapid exchange of information between various points is possible, so that you don't depend on mail. There is no need to have other scholars with exactly your interests physically around you. You might think that the phone would always have worked well, but it doesn't. The printed word is much more important in math. And the rapid exchange of ideas using email and Telnet has made it very easy to be isolated physically and still have a cluster of people with whom you can work productively.

YG: Are—when you first came, in '66, were other faculty making a career at USF, or were they staying a couple of years and then leaving?

MM: When I came, the history had been—though it had been a short history—of large turnover and very few PhDs, actually. I think I was the beginning of a trend. People came and stayed and developed professional lives, and several of the people that are in the DROP [Deferred Retirement Option Plan] program now have been here longer than I have been.

YG: Are there currently—or also, when you arrived, were there any world-renowned scholars at USF, particularly in the mathematics department?

MM: No. Absolutely not.

YG: Are—has that changed in the last 37 years?

MM: Oh, absolutely. As we've developed into a strong and nationally recognized—and in some areas, internationally recognized—department, we have several outstanding, world-class scholars. I would name them, but I might fail to name some, and that would be an embarrassment to those that I omitted.

YG: Did you ever have any personal contact with any of the university presidents?

MM: No. I met a couple of them, but the contact was a handshake and a couple of sentences.

YG: So, in general, you were very removed from that aspect of the university?

MM: Absolutely. Now, actually, a very big change this year took place. President Genshaft actually came to our department, and this is certainly unprecedented.² And [she] met the department, discussed the department's needs, its goals, learned a good deal about it, spoke to almost everyone personally, and charged the group with motivation that we had not seen before. It was—this is a major change from what I've seen over the past 37 years.

YG: This is a question that I have asked all of my interviewees, particularly people who've been

² Judy Genshaft served as president of the University of South Florida from 2000 to 2019.

here 20-plus years. If there was something that you could leave for the record, to future staff, to future faculty and students, and/or something that you want to leave to all of the people that you've had the opportunity to meet here at the university—some lasting statement—is there anything that you would like to say to those people, or about your career at USF?

MM: I've not thought about that. I don't think I have sufficient wisdom to leave any pearl that people could hold on to. I do think that what has happened over the years is that we have a higher level of professional intensity and less personal discord, and that has to be a goal to continue. You want more and more professional efforts, fewer and fewer personal discordant interactions, and more collegiality, but I expect that that's happening.

YG: Were there any university scandals or controversies that you were made aware of, or that your students were talking about, or that your fellow faculty members were talking about?

MM: No, I don't think so. I can't say that there were none. But the phrase that I am aware of is "What's going to eliminate it?" But I am a horribly apolitical person. And unless you really cause me to pay attention to it, I'm not likely to.

YG: How has your department really—being a chair, how—what kinds of things have you seen really change about your department? Positive things and/or negative things about your department over the last 37 years.

MM: The only really negative thing that's happened has been—has been happening all over the country recently, and that's the financial difficulties that we all find ourselves in, so that there is—there are fewer resources that we can put toward achieving our goals. The positive things are many. The incredible increase in the proficiency of people in mathematics, both in breadth and depth. We get much better trained people today, and much more highly motivated people, more committed to all the aspects of the department. They are better departmental citizens, and I think that this is a growing trend, and a good one.

YG: You used the term "departmental citizens." What do you mean by that?

MM: There is less of an emphasis on what is good for the faculty member only, and more interest in promoting departmental goals and serving the students, as well as themselves. The people are much more committed today to making sure that graduate students get a well-rounded background, that they're well trained, that they go out and have a healthy professional life. There's more interaction, joint grant proposals, seminars, colloquia. The exchange among the faculty is much more collegial than it was at one time.

YG: Do you keep in contact with any of those early, early students?

MM: I hear from them occasionally. I don't make any effort to keep in contact with them. Every once in a while, someone will write me and say, "Thank you for your contribution to my education." But this isn't a usual thing. It happens every few years—you might hear from one. But no, I make little effort to maintain contact with them.

YG: When you first arrived, you talked about that tenacious effort of early faculty to get you here.

MM: Yes.

YG: Why do you think that they were so tenacious?

MM: Essentially, it was Frank Cleaver, the chair of the math department in the natural science college, and to a lesser extent, Don Rose, who was the chair of the basic studies math department. He was—Don Rose was merely supporting Frank Cleaver's interests. But Frank had come from Tulane, and he was a good mathematician, and he really wanted to build a department. He took the charge as chair very seriously, and he came to an academic program that was quite weak. And his motivation was what caused the other faculty to work together to try and bring in research mathematicians, even though many of them knew that the research mathematicians would be replacing them.

YG: Why do you think math, as compared to other departments in the university, in those early days, was not such a strong program?

MM: I'm not sure that it was weaker than the other programs. In a new university, you don't have a lot of strength. Generally, you attract faculty members with great ambitions, but not great reputations. And I think that was true here at USF. I'm not as familiar with what took place in other departments as perhaps I could be, but I didn't have the impression that math was relatively weak, just that it was weak.

YG: Were—you mentioned your early faculty members. Were—did they tend to come from particular universities, or were they recruited from universities throughout the United States?

MM: The latter. I think they were fairly representative of universities throughout the United States.

YG: Did you ever read the *Oracle* in those early days?³

MM: Not very frequently.

YG: Food on campus. In those early days, what kind—was there a food—a formal food service on campus?

MM: There may have been. I actually don't know. I came to campus on my bike, worked the day, and then took my bike back home. I did make a short trip home for lunch, but I lived close enough to campus that I essentially shuttled back and forth between the office and my home—and the library.

YG: On a bicycle?

MM: Yes.

YG: Did the library offer books and other research materials that you as a mathematician would need in those early days?

MM: Yes, they were surprisingly good. And, you know, a library loan was easy. On rare occasions, I would drive up to Gainesville. But, basically, I was able to get what I needed right here.

YG: In those early days, were your students taking a lot of courses, or did you get the sense that they were taking one course, and then later taking another course?

MM: Seems to me about the same as today. Students at USF always seem to be working at other

³ *The Oracle* is the University of South Florida's independent, student-run newspaper. The first issue was published in 1966.

jobs and being part-time students, even if they are categorized as full-time. And I think that hasn't changed over the years.

YG: Were those early students—were they older, were they younger, or what was their general age composition like?

MM: This is obviously an impression. I have absolutely no data, but my impression is that the students were basically older. That the average age on campus was probably considerably higher when I first came than it is now. And, of course, we had mostly students who lived nearby. I think we draw from a much larger area than we did when I first arrived.

MM: Hot topics in mathematics. What were some of those early hot topics that you were interested [in] and that you were trying to convey to your students versus how that's changed within the last 37 years?

YG: Mathematics is remarkably the same today as it was then. You would expect that the advent of computers would have made a big difference, and, in fact, it hasn't. There is, as I mentioned earlier, an area of computational mathematics. That's a very small area in mathematics. The things that we were interested in then are still things we're interested in now. Just a few years ago, a fellow named Andrew Wiles at Princeton University solved Fermat's last theorem. This is a theorem that people have attempted to prove was a theorem for centuries, and it was broken a few years ago. This is not unusual. The problems that haunt us today are very much the same as those that haunted us when I first arrived. There are certainly newer areas that were not in existence when I first came. There was no chaos theory. Chaos and fractals were things that people were only moderately interested in, if they had been formalized at all. And so there are areas that have come to the forefront, but the major problems, the outstanding problems that people are interested in seeing solved, are about the same now as they were then.

YG: I think that's really all that I have. I think we've gone rather quickly through all these questions.

MM: Yes, we did.

YG: Dr. McWaters, I want to thank you very much for your interview and for sharing your experiences with us.

MM: You're very welcome.

YG: Thank you.

End of interview.