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January 6, 2011
(interviewed by Kenneth A. Ross)

Where did you grow up?   Where did you go to school?

I grew up in Sheldon, Illinois, a tiny railroad town. My father was the mayor. The town's claim to fame was its role in Rachel Carson's book, *Silent Spring*; the insecticide sprayed to kill the Japanese beetles had instead killed all the birds in the area. My mother was a Native American, but we were viewed as curiosities in lieu of overt discrimination. I didn't really see any discrimination until my mother and I were travelling across the Dakotas. There was a particular incident in a store where body language made it clear where we stood. So, I was a small town guy, and it was a shock when I went off to the University of Illinois. For one thing, there were almost no Native Americans and very few African-Americans.

When did you get interested in mathematics?

I had a spectacular mathematics teacher at Sheldon High School, named Donald Haberkorn. He taught us geometry and solid geometry (programmed instruction), but he often deviated from the curriculum. He really excited the class with big ideas like mathematical induction.

At Illinois, I obtained my undergraduate degree in physics. That was in 1969 when the market was bad, so I was happy to get a job at Roper Corporation in Kankakee; I was a computer systems software specialist. I enjoyed the work, but my real love was mathematics, so I went back to college in 1977. I had taken undergraduate mathematics up through differential equations, so I wanted to give a graduate degree in mathematics a shot. My advisor and mentor, Jim Armstrong, was initially dubious. So I took four hard courses, and after one term Jim said "okay."

I was interested in working with J. J. (Jerry) Uhl at Illinois, but since I was interested in geometry, Jerry sent me to Mahlon M. Day. My thesis was about nearest-point properties of sets in normed linear spaces, which was related to work of Victor Klee and Robert Phelps.

Day was a great guy and good to students. I was his 20th and last Ph.D. student.

My first academic job was at Eastern Illinois University (EIU) in Charleston, which is south of Urbana. Jerry Uhl had advised me to apply for post-docs, but my wife had a great job in nearby Decatur. I am pleased that I went to EIU. Their strength is mathematics education and there were valuable interchanges between math ed and the rest of the math faculty. The math building at EIU was housed in the administration building, which was across the street from the original Jimmy John's sub shop. Jimmy John himself served me, and now Jimmy John's is a big chain.

And then you went to Michigan?

Yes, I went to the University of Michigan in 1992, because Don Lewis wanted someone with just my credentials. This is where I learned how the rest of the mathematics world works.   From June 2002 through August 2004, I was on leave at the Mathematical Sciences Research Institute (MSRI) in Berkeley to serve as Deputy Director. Then I returned to the University of Michigan where I serve as Professor of Mathematics and have just finished two terms as Associate Dean for Undergraduate and Graduate Education for the College of Literature, Science, and the Arts.

One interesting example of how things can change happened shortly after I arrived in Ann Arbor, when I needed a book and was headed for Barnes and Noble to get it. My colleague Patricia Shure told me that rather than buy books at a big chain, I should look at what the locally owned stores had to offer, particularly the one just off the northwest corner of central campus founded by Louis and Tom Borders about twenty years before. Their single-store Borders enterprise has gotten just a little bigger in the intervening years.

How did you become Deputy Director of MSRI?

Good question. I first saw MSRI in 1986 when I took a tour there during the ICM (International Congress of Mathematicians) which was held at the University of California, Berkeley. On that tour, I thought that it would be "nice to be here sometime." In 1993, I gave a talk at

the Joint Mathematics Meetings right after MSRI Deputy Director Lenore Blum. Immediately after the talk, Lenore asked me to serve on the Human Resources Advisory Committee (HRAC) that MSRI was forming. In 2002, I was appointed Deputy Director for a two-year term. This was the most fabulous exciting experience of my life and it was a joy to serve with such people as David Eisenbud, Michael Singer, and Hugo Rossi. My first encounter with Hugo Rossi was when he refused my letter submitted for the Notices; on later reflection, I think Hugo was right.

One joint Eisenbud-Rossi-Megginson expedition I well remember happened during the late 1990s, before I was Deputy Director, and involved an NSF site visit for the research institute "recompetition" proposal submitted by MSRI. I was part of the MSRI team, and in the evening following a day's worth of presentations to the NSF team, David noted that their team was locked away deliberating and would not need further information from us. Since there was a full moon that night, David suggested that we climb Vollmer Peak, the highest summit in the Berkeley Hills, to see the moonlit vista of the Bay area from the top. The view was indeed spectacular, and David, who is inherently an adventurer, suggested that we cap off our evening by taking an interesting "shortcut" back down the side. Hugo (who incidentally is a fairly experienced mountaineer) looked a little dubious, but we did make it through our trip crashing through the underbrush, apparently unharmed. When we got down, Hugo quietly told me that I'd better find some strong soap and scrub off thoroughly when I got back to my hotel room, since "undergrowth = poison oak" in that part of the world. I did survive the adventure with only a few small eruptions. Incidentally, I've climbed Vollmer Peak many times since, once to get a repetition of that moonlit vista, but have never again descended via the Eisenbud Trail.

During part of the 1990s, I also chaired MSRI's Human Resources Advisory Committee (HRAC). Eisenbud and Rossi were really concerned about minorities and women in mathematics, and they were prepared to provide resources.

I am still on two MSRI committees. Through my HRAC service, it was an honor to know David Blackwell; he was the gentle giant. I particularly remember an African-American graduate student in

statistics who had just discovered that this famous statistician was African-American, and expressed a strong desire to meet him. I mentioned this to Blackwell, and his words, as nearly as I remember them, were, "I would be honored to meet her, and meet we must!" The meeting was never to come about, but I will always remember the combination of expertise, courage, and humility that were Blackwell's trademark. He was a true gentleman and a wonderful person, and with his passing last year mathematics has lost one of its giants.

Richard Tapia is another interesting guy whom I have been honored to get to know. One of my more vivid memories while MSRI Deputy Director was when Tapia advocated that we schedule a talk at the 2002 Blackwell-Tapia Conference at MSRI by one of his "students". I'd first thought he meant mathematics graduate student, but no; then I thought he must surely be talking about an advanced undergraduate in mathematics; but no—the student was a sophomore majoring in the visual arts. (!) But this was, after all, Richard Tapia advocating, and so the talk was scheduled, which turned out to be about using Navier-Stokes equations to aid in the visual modeling of Tapia's famed show car. It was an amazing talk, a highlight of the conference, and the student, Josef Sifuentes, has recently finished a Ph.D. in applied mathematics at Rice, with a strong thesis. This is what makes Tapia such a special mentor – his ability to find and foster remarkable talent in places that many others don't think to look.

Your mathematical work with Native Americans is well known. Tell me about it.

Okay. I have been very involved in the problems of minority mathematics education, especially that of Native Americans. I am a Sequoyah Fellow of the American Indian Science and Engineering Society (AISES), and work actively through the programs of this organization and others to further the participation of my people in mathematics. In particular, until recently I spent about a month every summer conducting mathematics enrichment programs for Native American students and their teachers at various sites, particularly on the Turtle Mountain Chippewa reservation in North Dakota. Since I am one of the few Native Americans who are known to hold doctorates in mathematics, I served on and chaired numerous

professional and national committees that address this problem. [Editorial comment: For his record of mentoring students of color and other work on underrepresentation, he was one of ten individuals to receive the 1997 U.S. Presidential Award for Excellence in Science, Mathematics, and Engineering Mentoring. This award was given in a White House ceremony in September of that year. He was also the recipient of the 1999 Ely S. Parker Award of the American Indian Science and Engineering Society, AISES's highest honor, which is given each year to a Native American scientist, mathematician, or engineer for lifetime service to the Native American community and contributions to his or her field of study.]

I gather that the MAA is one of those organizations that tapped your skills.

That's true. In the late 1980s, MAA President Lida Barrett called me out of the blue and asked me to serve on the MAA's newly-formed Committee on Participation in Mathematics, which I later co-chaired and have returned to several times since. In fact, I'm a current member. By the way, Tom Storer, a Navajo who was almost certainly the first Native American Ph.D. in mathematics, was also a member of the committee, but couldn't continue after attending one meeting. Lida Barrett was (and remains) a major mentor. Len Gillman was great on this committee and was regarded highly by the minority members. Jerry Porter was also a good friend of the committee and helped with its goals, though not as a member.

Later, I served as chair of the Coordinating Council on Human Resources. In 1998, I was a member of the MAA's Presidential Task Force on NCTM Standards, the Task Force on Member Services, the Advisory Board of "Math Horizons" magazine, and I served a term as chair of the Committee on Trevor Evans Prizes. I was a candidate for First Vice President in 1997 and a candidate for President in 1999 and 2005.

Since I was chair of the 14-member Task Force on NCTM Standards, I have to interrupt to say that you were one of the two most valuable members who helped me obtain consensus. What accomplishments in the MAA are you especially proud of?

Around 1997, Joaquin Bustoz Jr., at Arizona State University, and I founded ENACT (Enhancing Mathematics/Science Faculty at Native American Tribal Colleges in the Use of Calculators and Technology) with much help from Florence Fasanelli, who was at the MAA at the time. This was a two-pronged joint effort of the MAA and AISES. With funding from the Exxon Education Foundation, NSF, and NASA, its purpose is to enhance mathematics education in schools and colleges that serve Native American students. Its goal is to increase the number of Native American teachers of mathematics by enhancing the mathematics skills of Native American teacher aides, many without degrees, and encouraging them to become certified teachers. There were 25 students in the program each year. We were creating role models for the Native American population. This program was later institutionalized at Southwestern Indian Polytechnic Institute in Albuquerque. It has done an immense amount of good.

Also, Bill Hawkins and I are directors of the NREUP (National Research Experiences for Undergraduates Program). There are currently eight or so sites per summer, modeled on a program in Puerto Rico. We urged the MAA to pick up the funding when NSF didn't, but NSA helped. Rather than dropping the program, Bill suggested a way to cut back. I was dubious, but I am happy to have been wrong. The program continues to thrive.

Are there any efforts of yours in the MAA that you are disappointed with?

While Chair of the Coordinating Council on Human Resources, I did my best to get more interest in the issues affecting mathematicians with disabilities, but wasn't successful. But I do recognize that this is a complicated matter, and people of good will within the Association continue to work on it. It is easy to cause these people problems, without even realizing it. For example, in Baltimore, they had to move some talks to a room that needed carpet runners to deaden the sound. But then the runners made the room inaccessible to people in wheelchairs. Other problems are that panel discussions on stages limit access to potential participants, and we don't provide signers for the hard-of-hearing because of the expenses.

I was also disappointed that it was hard to keep some of the committees going. AAAS seems more successful at this. We need to do better.

What changes have you seen in the MAA since you first became involved?

Through 1988, when the MAA's efforts to involve more minorities really got into gear, there were so few of us at national meetings that we would be difficult to spot. That has changed, though we are still too rare. Much work remains to be done.

Have you been active in the Michigan or Illinois sections of the MAA?

My activities in both sections have been limited, though I have attended and given talks.

I see that you were or are a member of AMS, NAM, AWM, SACNAS (the Society for the Advancement of Chicanos and Native Americans in Science), AAAS, and Pi Mu Epsilon. Do you have anything to add about any of these organizations?

All have contributed much to my path through the profession, and I was particularly honored to have been named a Fellow of the AAAS at their 2010 national meeting. NAM, AWM, and SACNAS have been fighting the good fight for diversity in our profession, and AAAS has also through its Education and Human Resources division. I currently chair AAAS's diversity committee, its Committee on Opportunities in Science (COOS), and have been pleased that COOS has been willing (even eager) to take up the cause of all folks underrepresented in science, technology, engineering, and mathematics, including a strong focus on those who are physically challenged.

What personalities have stood out in the mathematical community, in the MAA and elsewhere?

I've already mentioned several key people who have been an inspiration. I especially want to emphasize how wonderful Bill Hawkins has been, having served as Director of the MAA's

Strengthening Underrepresented Minority Mathematics Achievement (SUMMA) program for something like two decades, purely as a volunteer after the first few years when grant funding for his salary ran out. We often jokingly (well, not jokingly) refer to the SUMMA post as Bill's "other full-time job" in addition to his post at the University of the District of Columbia mathematics department. Florence Fasanelli has also had an impact through the tremendous amount of energy she puts into her work on underrepresentation issues. I am pleased that the impact that Lee Lorch continues to have on our profession in his 96th year is finally receiving the recognition that it should. Richard Tapia and David Blackwell have been the ultimate high-level role models. David Eisenbud is a man who cares about the entire profession, including education. I didn't mention Robert Bryant earlier, but he is now Eisenbud's successor at MSRI and is the absolutely genuine article. Finally, I must mention that Richard Guy is an amazing guy!

That's a nice way to end an interview. Thanks very much.