RUTGERS, THE STATE UNIVERSITY OF NEW JERSEY

NEW BRUNSWICK

AN INTERVIEW WITH MICHAEL GREENBERG

FOR THE

RUTGERS ORAL HISTORY ARCHIVES

INTERVIEW CONDUCTED BY

SHAUN ILLINGWORTH

HIGHLAND PARK, NEW JERSEY
MAY 7, 2021

TRANSCRIPT BY

JESSE BRADDELL

Shaun Illingworth: This begins an oral history interview with Dr. Michael Greenberg, on May 7, 2021, with Shaun Illingworth. I am in Hightstown, New Jersey. Dr. Greenberg, can you tell us where you are today?

Michael Greenberg: I'm at home in Highland Park, New Jersey.

SI: To begin, can you tell me where and when you were born?

MG: I was born in the Bronx, New York in 1943. Where we lived was less than a mile away from Yankee Stadium, so South Bronx.

SI: What were your parents' names?

MG: My parents' names, did you say? Mildred and Sydney Greenberg.

SI: Starting with your father's side of the family, can you tell me anything you might know about his family background? When did his family come to the United States? Where did they come from?

MG: Sure. My father's mother was born in Vienna, and because Jewish people in Vienna during this period of time, which was the early 20th century before Hitler, were not doing very well, they moved to the United States. Her husband was a Russian immigrant. I never did really find out what his true name was, but when he came to the United States, it got changed. So, I ended up with the name Greenberg, but I don't think that was what the family name was.

On the other side of the family, my [grand]mother and my grandfather on that side were from the Ukraine near Kiev, near Odessa. They escaped in a hay wagon to avoid having their heads chopped off among other things, and they came to the United States in 1921. There had been a pogrom. My grandmother told me that the mayor's head was chopped off in public, and, at that point, the family decided to leave. So, my mother and my grandmother hid in a hay wagon and ended [up coming] through Ellis Island. Her husband was from the same area, but he came later.

SI: It sounds like your mother remembered that firsthand. Did she tell you other stories about what life had been like in tsarist Russia?

MG: She was just a little kid, but she just was uncomfortable. My grandmother, who was a rather large person for those days, was extremely uncomfortable with it and was afraid. They were merchants. They owned a small shop. My grandmother felt they would've never made it out of there alive if they hadn't left when they left. In fact, neither family would've made it out of there alive if they hadn't left when they left.

SI: Do you know how your parents met?

MG: Yes. They met in New York City, in high school. My father was a little bit older, and they became good friends. They dated for five years, and then finally they were married.

SI: You have an older sister, right?

MG: Yes, four years older than me.

SI: At that time, do you know roughly where they were living in the city?

MG: Yes. They started living in the Lower East Side. It was mostly in Chinatown but more Little Italy at that time. So, they moved from there up to northern Manhattan, maybe two blocks away from Central Park, in an area that was transitioning between affluent people and poorer people. They were right in the middle of that transition. When they finally left Harlem, which they called it, they moved up to the South Bronx and moved around to a couple of places but finally to 1265 College Avenue, off 169th Street, two blocks in, east of the Grand Concourse. I remember being a little kid and my uncle and my mother's mother, who lived right there too, shortly after World War II, there were some tanks parading down as part of a parade on the Grand Concourse. My uncle took me up there, put me on his shoulders, and I watched these tanks on the Grand Concourse. I have a flashbulb memory of it. It's kind of neat. The Grand Concourse was designed as a middle-class extension of Park Avenue, but the difference is whereas a lot of these other grand avenues in different parts of the United States were based around single-family homes, the Grand Concourse was designed as the apartment version of that.

SI: Did your parents ever talk about how the war affected them? Did it have any noticeable effect on their family?

MG: Oh, yes. I was born in 1943. My sister was born a few years before then. My father, because of that, did not go to fight in the war, but he did his own kind of war-related services. He had an amazing eye, and so when a ship would be damaged in the war, they'd bring it in to the then Brooklyn Navy Yard. My father usually was in charge of a crew of people that had to put on a new deck or fix other kinds of issues related to ships. My father remembers a case where they brought this one ship in. They put on a new deck, but they didn't put the other [new] parts of the ship in properly. My father said to them, "You know, this ship is not going to work. It's going to go out, and you're going to have to bring it back in," and sure enough, that's what happened.

My most vivid memory of this workplace is--he told me later, many years later, when I was working on cancer epidemiology--that a lot of people who worked at the Brooklyn Navy Yard would stuff in asbestos into the ship as fireproofing, and at the same time, they were smoking. He'd read a couple articles on that, and the probability of getting asbestos-related cancers was multiples of getting it if you just worked with asbestos or you just smoked. So, it's a perfect carcinogenic cocktail, and my father remembers that. He told me especially when he started reading some of the stuff I wrote. He also has some memories of guys falling off decks who were trying to repair ships and dying. It was very tough workplace.

SI: How long did he work in the shipping yard?

MG: Well, he worked in the shipping yard during the war because prior to the war it was hard to get any kind of a job. His job prior to the war--and he worked in the shipping yard for two years-

-but prior to that, he had a bunch of odd jobs, and because he was very artistic, he ended up working in the Museum of Natural History. He was the person responsible for drawing the diagrams of what the old Africa Hall was going to look like. They've since totally changed it, but when I was a kid and, in my classes, when we'd go down to the Museum of Natural History, we'd invariably go into Africa Hall. Those were actually built based on my father's diagrams, some of which I still have. He loved that work. That was his favorite-ever job.

SI: What did he do after the war?

MG: He set up his own printing industry, a small factory located about six or seven hundred feet away from the old World Trade Center, in a building that had been occupied by printers previously. He took over the top floor, and his company was called Art Crafts Platemakers. What they did was make zinc plates, which of course we don't use anymore, for printing. He had a camera that was just gigantic--I can't even estimate how big the lens was--and they would take photographs and create these zinc plates out of that. Then, they would give those zinc plates to printers who would actually do the printing job. So, my father for, I'm going to say, five years, maybe a little longer, did all the work for the New York City Board of Education, all of the zinc plates for the New York City Board of Education. He didn't like that job.

SI: How long did he stay in that business?

MG: Oh, my heavens, he was probably in that business at that location and in his previous location in Brooklyn for maybe twenty years. He was there for a long time.

SI: What about your mother? Did she work outside of the home?

MG: She worked as a bookkeeper. Today, they would call them accountants. My mother, and I think I must've gotten it from her, my mother was one of these people that can look at a column of numbers and add them up without any type of machine. She used to say to me, "Michael, sit down and add these numbers up to check my calculations." Maybe I got it from that too, but my mother was very, very good with numbers. My parents both skipped a grade in public school because they were above average in intelligence, but they never got a chance to go to college because of the depression. They had to go to work.

SI: Did they ever tell you more detail about the depression era? Did they talk about what they had to do to survive?

MG: Well, first, when the depression hit, my father's father, who owned a bigger printing establishment, went out of business. My grandmother, my father's mother, who was used to living in relatively affluent conditions in New York City, had to get out of that apartment and had to move into a much smaller apartment, which she was not used to. She had her daughter living with her, for a while my father living with her, my grandfather, and my aunt's daughter, so there were a lot of people in a tiny apartment, which if I have a correct recollection of it, it would be the equivalent of a one-bedroom apartment with all those people in it. My father had to get out of there in order to have a place to live. He met my mother at that time. Back in those days, money was very, very tight. My father was working, my mother was working, trying to support

themselves, and, at the same time, my father was turning over money to his mother to help her survive. We are so blessed now. It's just astonishing, the opportunity I've had in being able to go to college and my sister had in being able to go to college. We were the first two graduates of college in the family.

SI: Tell me what you remember about growing up in that area of the Bronx.

MG: I loved it. I absolutely loved it. There were wall-to-wall kids. If you've ever seen pictures of how Willie Mays used to go out in the street and play stickball when he was a kid, that's what my street was like. In fact, it's not all that far away. Willie Mays was playing over on 155th Street in the Polo Grounds on the other side of the river, and I was probably a mile and a half from where he used to play stickball when he joined the New York Giants, same kind of stuff.

The streets were packed with kids because the apartments had no air conditioning. So, our air conditioning in our apartment, if I may, I can joke about it, consisted of getting ice, putting it in a box, and then running an electric fan over it, trying to create a cool air current. These apartments had very few windows. It was really hot in the summer, and I was encouraged to be outside. As a little kid, I was outside until it was pitch-black outside. Then, my mother would stick her head out the window and yell, "Come on up. It's time to go to bed." We spent an enormous amount of time in the street playing stickball, games like off the point, three-box baseball. I don't think anybody plays those games anymore, but we were constantly playing. There were no basketball courts, no football fields. The public school I went to as a little kid was around the corner. It had a big field. It seemed gigantic to me as a tiny little kid, and we would try to play softball there or stickball there. You couldn't play hardball because it was concrete.

Then, when we could get a chance, my mother would let me go, usually on Saturday or Sunday or during the summer, I would run down to Yankee Stadium with my little friends, and we would play on Macombs Dam Park, which is now what Yankee Stadium is. The new Yankee Stadium took over our baseball field. It was just fifteen minutes away. It was a run down Grand Concourse. We just loved it. So, I played a Little League game at nine years old on what's now Yankee Stadium, but it was called Macombs Dam Park. [laughter] It was a great place, in constant motion.

SI: Was it a melting-pot area, or was it predominantly Jewish or some other ethnic group?

MG: Yes, at that time, it was primarily Orthodox Jewish, they maybe were the second largest group, other Jewish, like myself, and then there was some black folks there. I don't remember any Latino people. At that time, it would've been Puerto Rican people coming into the area until later. We all sort of got along pretty well. When I was a little kid, kids tend to make friends. They don't make these kinds of crazy distinctions that other people do when they get older. But I just loved the area, just loved it.

There were almost no cars on the street. It's probably an important point for people to realize. Almost nobody in that area had a car. When we went outside in the street to play stickball or whatever game we were playing, you didn't have to worry about getting hit by a car.

SI: It sounds like you were on your own quite a bit. Would you have to work at all? Obviously not when you were a little kid, but as you got to be about twelve, thirteen, did you have a job?

MG: No, there were not newspaper routes. Until I was fifteen, I wasn't allowed to work. At fifteen, I got working papers, and I went to work for a guy who had a small printing shop in lower Manhattan in what is now a skyscraper. I can't imagine how much money he made when he sold that property, but his name was John Aquila. I was the sort of do-it-all for him. I learned how to set type. I fixed the floors in his place. I put in new tiles. I would run errands for him, and, essentially, he could see that I was a little bit smarter than his regular workforce. He paid me one dollar an hour, and during the summer, I worked thirty to thirty-five hours a week. Again, I enjoyed it. It was all a new experience for me. His employees were twice my age or older. They were nice guys, but I was there to be the person who could do things, who could think, could add up [numbers]. I used to do calculations and stuff for him. The closest I had to making money when I was a little kid was we used to recycle bottles back then. I would go to all our neighbors. This area I lived in was pretty much all apartments. There was a lot of people, so I could collect a lot of bottles. I'd walk down the street around the corner, maybe a quarter of a block, to the candy store and cash all those bottles in and immediately buy baseball cards with chewing gum with that money. [laughter] So much for work.

SI: Tell me about your early education. Where did you go to school, and what did you enjoy the most about that early period?

MG: Well, I loved school after the seventh grade. When I was in early school, I had problems. I loved reading. I loved writing. I especially loved arithmetic, but, like a lot of little boys, sitting still was a bit of a chore and so I got into trouble a lot. Until I got into the seventh/eighth grade, I had all kinds of problems because I was not a well-behaved little boy, and I did all sorts of things that I probably should have been yelled at for. They wanted me to write right-handed. I learned how to write right-handed, but, secretly, if they said, "Do it right-handed," I would do it left-handed. I would write right-handed and left-handed. I still do today. I love to read books in science and math. The pace of learning was glacial-like for me. I would have been much better off being homeschooled. It was a problem because my mother had to go into the school a bunch of times. I can remember in the fifth grade, I still remember it, I got whacked over the head with a yardstick twice by our teacher for not paying attention when she was teaching fractions. But I already knew how to do fractions because when my sister, who was way older than me, was learning fractions, I took her books and I used to learn it from that. I was just a silly, little bored boy and behaved that way. I'm sure the teachers were doing the best they could, but I can't even imagine trying to control a whole bunch of little boys like me in a class. It isn't fun.

SI: Were the classes large?

MG: We actually have some pictures. I would say there were maybe forty kids and one teacher with no teacher aids. You'd have a couple of smart-aleck boys like me. I'm sure we made it more difficult for us than they did for us.

SI: In your household, was religion important at all? Did that shape your life at all?

MG: No. We were officially Jewish, but my parents didn't practice. I went and I got a bar mitzvah. Once we moved to Yonkers, I was commissioned to go to walk all the way across the Thruway, about a two-mile walk from my house, to go to the *shul* to learn how to speak Hebrew. Once again, I was not the best-behaved individual in Hebrew class. I don't know if you know other people like this, but it was all about memorizing stuff. Being told to sit down and memorize a bunch of stuff and just tell it back was not my style, and I was constantly, once again, causing difficulties for my parents. I was always wanting to know, "Okay, so I can read this, but what does it really mean?" I wasn't getting those explanations. I think it's part of being a doubting science person, "What does this really mean? I can read it, but what does it mean?"

SI: As you got past the junior-high period into high school, it sounds like you were really into what we now call STEM. Would you say you got a good education in those fields in public school?

MG: Yes. Everything changed dramatically. In the sixth grade, they did these things called reading readiness tests. Apparently, I got a very high score, and because I was a little jerk in the class, I think they accused me of cheating. They never accused me; they called my mother and said that I must have cheated, and my mother, at that point, really got mad, "He reads all the time, just not what you give him." To make a long story short, I took the test over again, and I did about the same. At one point, I overheard my mother talking to my father, that in fact they decided that I had this very high IQ and that what they were going to do was skip me a grade and they were going to put me ahead a grade.

Luckily, for me, I went into this special class that combined the seventh grade and the eighth grade, and there was a male teacher. Suddenly, my world changed. Not only was there a male teacher, but he was a science guy and he was coach of the football team. Well, there you had, for the first time, somebody I could identify with who didn't care if I didn't always act appropriately. He and I just got along beautifully. The guy would just give me a book to read and I would just read it and then talk to him about it. He groomed me to play sports, and all of a sudden, my grades [improved]. I mean, I actually have some report cards showing what my grades were in the younger grades. I didn't shine in anything, and they had these columns. Every time it would say, "In need of improvement," the teacher would write in, "Conduct," actually written in the report card. I obviously was a real pain in the neck when I was a little kid. But when I got into this guy's class, suddenly I started getting Gs, G-pluses, and Es in everything. For me, I just kept on getting better. The more difficult the material, the better I did.

SI: When did the family move to Yonkers?

MG: They moved to Yonkers in 1952. I was roughly nine years old at the time, and that was a shock. In fact, I just finished writing an environmental justice paper about it. Yonkers was the first city in the United States, lucky Yonkers, to be sued both for segregated housing and segregated education. It was the first one to be sued, and Yonkers lost its education funding for years because they wouldn't integrate, not only in housing, but in school. Here I walk into this area in Southeast Yonkers, right by the New York City border, and I didn't see one person that was black. In fact, I was the only Jewish boy in the school. The neighborhood was beautiful--well, relatively speaking it was beautiful. There was a gigantic baseball-football field across the

street. I joined up with the other boys and played sports and continued studying stuff, which I liked doing. I went from an average academic student in the Bronx to maybe the smartest kid in the school when I went to Yonkers overnight.

SI: What else stands out about the neighborhood being different in Yonkers? Was your housing situation different?

MG: Yes, the racism. This was not a friendly neighborhood to people that weren't white and were Jewish or Puerto Rican or black. I think it's changed now. The last time I was back there, I saw visual evidence of it, but I haven't talked to any of the people. I survived it because I played sports, but if I had been a nerdy little kid, I probably would have had more difficulty than I did. I feel bad for the people. They lost out a lot. There was no culture of education, which at the university we just assume that people want to study. Not this place. Like I said, literally overnight, I became the star pupil.

SI: While you were in high school, were your parents encouraging you, and earlier your sister, to think about college?

MG: Yes. My sister was an extremely talented singer. Even though we were living in Yonkers, they let her commute to Music and Art High School, which used to be located near where CCNY [The City College of New York] is now located in Manhattan but now is located near the musical center in the fifties. The new Music and Art High School was there, and wouldn't you know, about five years ago, my wife and I were on a trip and I met a guy who said he taught music at Music and Art High School. That was one of my sister's music teachers. The guy was in his mid-nineties, amazing. My sister just had a beautiful singing voice. She was a professional opera singer for a while and then got married, settled down, and started teaching music. Her talent and my talent totally did not overlap, but she really was an amazingly talented person and she went to college and graduated in four years.

SI: Outside of athletics, did you have other interests such as Scouting or anything like that?

MG: I was part of the Cub Scouts. I know because my mother kept my Cub Scout uniform. [laughter] It's a tiny little thing, but it's sitting in a closet right behind me, I think. I had all the little merit badges and stuff, but here's the thing that was great about being part of the Cub Scouts. Back in those days, before the owners of baseball became extraordinarily greedy, they would give tickets all the time to the Cub Scouts and the Boy Scouts and the Girl Scouts and you could go to Yankee Stadium for free. I don't know, I probably went to fifty to a hundred baseball games when I was a little kid, and we sat in right field in Yankee Stadium and watched all the games. It was just like totally amazing. I saw Joe DiMaggio and all the greats play baseball. Those were the years when the Yankees won every year. They were amazing. That was incredible fun.

Of course, we hated the Brooklyn Dodgers. They were from a different world, as far as we were concerned. The one year they beat the Yankees in the World Series, it was just like a morgue in our neighborhood. The New York Giants weren't as good, but we always rooted for them to beat the Dodgers. The Polo Grounds, the old Polo Grounds, which is now a public housing project,

you could see it from Yankee Stadium. The Yankees used to play in the old Polo Grounds until [John] McGraw kicked them out of there, and then they built "The House that Ruth Built" in Yankee Stadium, but they were rivals. I would go to Giant games in the Polo Grounds when I was a little kid. Then, I would go to a huge number of Yankees games, and I went to Ebbets Field twice. To be a baseball fan, be a little boy, and be living in that place was an amazing experience. I couldn't have thought of a better place to live. [Editor's Note: "The House that Ruth Built" is the nickname of the old Yankee Stadium, owed to the stadium's opening in 1923 coinciding with Ruth's prime years and the Yankees becoming a winning franchise.]

SI: When you started working at this job, how far would you have to travel?

MG: Oh, maybe an hour on the subway. I used to get on at 241st Street, White Plains Road, and go down to where the World Trade Center is now. Here's another huge difference. We read newspapers all the time. My father would read three newspapers a day, bring them back, and so the next day on the way down when I was going to work, I would read yesterday's newspaper. Now, I'm not going to say I read all the information, but I read all the sports information. Then, I would go through *The Post*, *The Herald Tribune*, which was a big paper back then, and the *Daily News* and I would read everything that looked interesting. I just loved reading. I always loved reading.

SI: Tell me a little bit more about your high school years. You said you were involved in athletics. You were getting a good education in STEM. What else motivated you or kept your interest in high school?

MG: I think it was probably those two things. I just loved math and science. I was not a very good student in foreign language. It's not that I didn't try, but I couldn't get a hundred on the tests. I had a poor memory for vocabulary. I did learn how to write, which helped, given what I do now, and then I just played a lot of sports whenever I could. I had a bunch of friends. I was young for my high school. I was probably close to a year and a half younger than most of the other kids, and I lived in a place where, since being the only Jewish boy, I was not particularly welcomed by--I'll call them--the non-Jewish girls. I was friends with some of them, but I didn't have a steady girlfriend or anything like that. I had friends.

SI: Was there any kind of anti-Semitism that you had to deal with, either from people your age or teachers or some other sector?

MG: Well, I certainly don't feel like I ever had any problem with any of the teachers. I think having a student that they could explain stuff to who would remember it, I think they liked that part. There was some problem with the neighborhood kids. It's a terrible story. One of the first days when we moved in Yonkers, I was just a little kid, and a bunch of boys walked around me looking to see if I had horns. That precipitated a fistfight very, very quickly, but in about three days, it ended because I buddied up with a lot of the very athletic guys in the school and nobody would mess around with me then.

SI: You mentioned that you were keeping up on the news. Would you say you followed national and international events, maybe not as closely as sports, but were you aware of things happening in the larger world?

MG: Yes. I still remember trying to understand Eisenhower's "Atoms for Peace" speech. I was either nine or ten at the time. The idea of nuclear energy--it's was one of the things I work on all the time now--the idea of nuclear power just fascinated me. I tried to study up on it, trying to understand what the different chemicals were, but the idea of being able to create nuclear power and it would be so cheap that we wouldn't have to charge for it just seemed astonishing. One of the things which I absolutely read multiple times, we had a magazine called the *Weekly Reader,* and I still remember reading this article about how they discovered all this oil in the Middle East and the world would be set for power forever. Well, I think we've learned better that that's not the case, but seeing all these things just was amazing. It turned out that I had a knack not only for the science and especially the math of it but also the policy implications of it. That's kind of what I've done for most of my career is policy issues related to a lot of these things that I learned about when I was a little kid. I know I'm not making it up because my mother and father told me that I used to sit there when Walter Cronkite would talk about something like this on television.

SI: Was your family politically either active or vocal in support for one party or the other or a particular candidate? Was politics discussed much in your household growing up?

MG: They were Democrats. They actually didn't discuss it much because they were on the same side of it. Once in a while, things would come up and there would be a disagreement, not between my parents but between my parents and their parents. During the Hungarian uprising in 1956, there was a gigantic fight in my grandmother's house, my father's mother's house, over whether the United States should intervene against the Russians in Hungary, and there was a lot of curse words and chairs thrown. I was just like, "What the heck is going on here?" Reading it is one thing, but watching your grandmother, who was maybe four-foot-eleven, pick up a chair and throw it she was so angry, and my father trying to say, "Calm down, calm down." Part of the issue in my family is we had a lot of people with hair-trigger tempers, especially on the women's side, and it could make life very difficult. When we would go visit them, I would look for any possible excuse to clear out of there while they were talking and go someplace else so that I wouldn't get involved in it. It was uncomfortable. [Editor's Note: Beginning on October 23, 1956, Hungarians revolted against the Communist government installed by the Soviet Union after World War II. Following the invasion and brutal occupation by Soviet forces, most resistance ceased by November 10th. Approximately 200,000 Hungarians fled the country after the Hungarian Revolution, with many settling in the United States.]

SI: You mentioned religion was not a big part of your life, but were there old-world traditions kept up in your family, either around holidays or language or food?

MG: Food, yes. My grandmother, my mother's mother, spoke Yiddish and she used to speak Yiddish, and that came in handy when I studied German. I would say they were not very religious people, but foodwise, yes. They made latkes and other food. They loved hot dogs and knishes and stuff. They made the stuff, I don't know if you've ever had it, borscht, which is beets mixed with sour cream, which I hated, and my grandmother kept on getting mad at me because I

didn't really want to eat it. The food side of it, yes. The other side of it, no, because I think my parents always felt like they were lower-middle income, lower-income Jewish people. I don't know if this is part of your experience, but there was a lot of tension between, I'll say, Jewish people who came from Northern Europe, especially Germany, and Jewish people who came from Russia and the so-called Slavic countries. In my old neighborhood, if there was a group that we had a problem with, that's the group. I didn't experience it because I didn't have that much experience with these folks, but my parents always said they treated us like dirt, like second-class people.

SI: Did they try to teach you Yiddish, or did you just pick some up talking to your grandmother and relatives?

MG: Yes, from my grandmother. When I took German in college, the spoken part was really easy. [laughter]

SI: Going back to this job at the printers, did you have that all through high school, or did you have other jobs?

MG: I only had it for one summer. It was my first job ever; that's why I remember it. I now look back at it, and I kind of laugh based on what I learned or didn't learn. The building next to us was a leather tannery. There would be stenches coming out of there constantly, and products from the tanning process weren't processed in a regular sewer. They were dumped into the sewers, and it must have flowed probably into the East River, given the location of this place. The second part is the boss, John Aquila, he was a good guy--I mean, he liked me--but they taught me how to set type and the set type was set with lead. So, I must have inhaled my share of lead at that time, airborne lead. I was a little older back then, it probably didn't kill too many of my brain cells but not particularly good for you. So, there was a lot of stuff that I did which wasn't healthy, but nobody really knew back then. I worked with saws and stuff. The only thing he wouldn't let me go near was the big printer, the one that would cut the paper. He said, "No, I don't want you near that." He wouldn't let me go near that. I worked with all kinds of other dangerous stuff, but the lead probably was the worst. We actually knew, but it wasn't being publicized at the time.

SI: Did you work at other places in other summers?

MG: Yes. A couple times, I worked in shops around the old neighborhood in Yonkers, and I would deliver things. I spent a lot of summers playing sports, which my parents were fine with. I was constantly playing baseball or some version thereof.

SI: It sounds like you probably did not get an opportunity to get out of the city, go to camp or on vacations.

MG: Not much, no. I played for what they would call now travel baseball teams, and we would travel to different places and play. That was always a lot of fun. My family was basically a hardworking-oriented family. On a lot of weekends that my father was home, he and I would be doing construction projects in the house, like cutting out part of a wall so that one of the rooms

would get more light in it, making pretend bricks and putting them in the house, painting. We did all that kind of stuff, too. It was pretty boring, but that's okay with me.

SI: You learn a lot of skills doing that. When it came time for college, what was your process like for where you wanted to go?

MG: Not very sophisticated. I had heard about this place called MIT [Massachusetts Institute of Technology] because it seemed to me from reading books and stuff that I would read that there were all these smart people at MIT. I said, "Well, if I'm smart enough, I want to go to MIT." Then, the second place I wanted to go was UCLA [University of California, Los Angeles]. I didn't know anything about it, other than the fact that usually on Rose Bowl Day or one of those days around there, they were playing a game in the sun and it was nice and warm, sixty, seventy degrees, and I was back in Yonkers freezing and maybe doing some of the same things and at the same level. I loved their powder blue uniforms. I was going to apply to UCLA. Then, the fallback option was to go to the City University of New York. My parents convinced me not to apply to UCLA. I might as well go to another state university closer by, like Rutgers [laughter] across the river in New Jersey. Well, I didn't apply there. I didn't apply to UCLA. So, I applied to the City University of New York, and I applied to MIT. I got accepted at both. But it turned out that even though I had near-perfect test scores in math and some of the sciences, I was still going to have to pay some tuition at MIT. We canned that idea, and I ended up going to what's now Herbert Lehman College up in the Bronx. It was then called Hunter College. I went there, and I had a good time. I liked it.

SI: I guess you commuted there. Did they have on-campus facilities?

MG: Yes. I lived with my parents for the first year until I could earn enough money to find my own apartment, but I couldn't afford my own apartment. I got an apartment with three other guys who were friends of mine. Let's say we managed to survive each other. They were all big muscular guys whose major time seemed to be devoted to weightlifting [laughter] and I was a nerdy study guy, but we all got along well. I lived maybe a half mile away from campus, and we had our own private apartment and we'd go there.

SI: Do any professors or classes stand out in your memory from Hunter?

MG: Yes, a lot of them. I mean, I liked a lot of those professors, wow. Actually, I would probably go back even before--Mr. Brown was my favorite in the seventh class, eighth grade. Then, there was Matilda Smith when I was in the tenth grade. She was the biology teacher, and I did very well. I got a really high score on the state Regents exam. It just seemed easy. So, she said to me, "Instead of working during the summer in a regular job, let me see if I can get you a National Science Foundation summer scholarship so you can attend college courses." I said, "Am I too young?" She said, "Yes, but you can do it." So, she worked it out, and I went to Hunter College downtown at 68th Street between my sophomore and junior years on this National Science Foundation scholarship.

I ended up meeting two people who I then knew for decades until they passed away, weird as that may seem. So, I met them when I was a sophomore in high school. One of them was

Anastasia Van Burkalow, who became an expert on the New York City water supply. She was teaching this class. Then, there was Professor Thompson, who was one of the first people that used some of the statistics that I've used many, many times in geographical research. How weird is that? But that's what I did one summer. I loved those two people. I guess they just saw this nerdy little kid running around, and they said, "If this guy wants to read stuff, let's give him stuff to read." I was happy to take it.

In college, wow, there were a lot of really good teachers. I'm just slipping, I can't recall her name, but the first calculus teacher I had in college. I had calculus when I was in high school. So, I was excused from the first two classes of calculus. So, I was pretty young when I went to college, but, anyway, I took the third level calculus class and the teacher really liked me because she loved doing proofs and I liked proofs. So, I remember when I took her class, I got a hundred on the final, and she was just amazed that I did that. I can see her face; I just can't remember her name. I liked that.

I had some really good teachers who taught advanced algebra, multivariate statistics. I had a geography professor named Rose Keesler who was about to retire but told me that she thought that the future for geography would be statistics, which I loved, because that's basically what I do, geographical statistics applied to public health, and she steered me that way. She was the nicest person to me. We could probably spend an hour talking about Rose. A lot of those professors were really good. They seemed to me that they actually cared, and they would take extra time and say, "Why don't you read this? How about reading that?" I really liked that.

Okay, my baseball coach in college is another one. I just loved the guy. His name was S. Charles Irace. He had played in the Detroit Tigers organization, and he could see that I was a little different from your standard baseball player. This was a low-level league. This is not like we are now at Rutgers, where we play fifty-some games a year, although this year we're only playing forty-four, but our team maybe played twenty-five games a year. I had some of my advanced math classes that would meet on one of the days that we played baseball. So, I said, "I can't miss those classes," because the professors would do the proofs, and you can't get those proofs out of a book. The professor had to show you. He allowed me to miss some baseball games.

Anyway, the long and short story of it, one of the neatest things that happened, he became president of Raritan Valley Community College. He was president of Raritan Valley Community College for years. I went to a meeting when I was, I think, a tenured associate professor at Rutgers. He was sitting right across from me, and I knew immediately it was him. He kind of did a double take, "Is that who I think it is?" We had this wonderful conversation, and he told me he was really proud of me because I was a good student and I just loved playing baseball. There were a lot of really, really good teachers there, because they seemed to really care about us as students. I kind of modeled myself after a lot of them.

SI: What positions did you play in baseball?

MG: I threw left-handed, so I played the outfield or first base. Five-foot-eight is a little short for first base, but I played it in an emergency. Mostly, I played center field. On the teams I played

on, I was usually the fastest runner. The game was totally different from the baseball game of today. I was trained to hit singles, to walk, to steal bases, to catch the ball. It was a completely different game. I loved playing. It was a game that a guy my size could be a pretty good player.

SI: Do any of the games from college stand out in your memory?

MG: Yes, a bunch do. I don't even know what division we were. Whatever the lowest division is, that's the division we would have been in. Every year, we would play Manhattan College, New York University [NYU], which had a pretty good team back then, and Saint John's. Think of a person that wouldn't hit home runs; that would have been me. In my entire college career--I didn't play my senior year because I graduated early to take a graduate school scholarship at Columbia, but, anyway, I played three years--I hit three home runs, two were in one game. There was like a gale blowing out to right field. So, I hit these two fly balls that normally would have been an easy out for the right fielder, and it just blew it over the fence. That was against Saint John's, and they were a regular big team like they still are. So, I hit two home runs in one game, drove in five runs. After that, the scouts would actually come around and watch me, as well as two of our pitchers, who were really super guys.

I was lucky. We had one team that was 17-2, not because of me, but because of these two pitchers, one of whom pitched for the Houston Astros, Larry Yellen. He pitched for the Astros for maybe three years. Then, our second pitcher was Mike Mathias, who pitched for the Phillies organization's Triple A for a bunch of years. I could have literally taken a nap in the outfield; that's how good these guys were.

I did not like to take batting practice against them because they thought they were pitching in a game. You couldn't get your eye on the ball because every time they threw the ball, it would move. Hitting a ball that's straight is not all that difficult if you have reflexes, but hitting a ball that's constantly moving is really annoying. So, I would say to them, "Come on, just throw it straight." They had a hard time doing that. I did not like to take batting practice against those two guys.

Like I said, it's a very, very different game. I always knew what kind of player I was. I was not allowed to take a swing at batting practice before I laid down four bunts, two on the right side, two on the left side. Irace said, "Look, you're not going to make a living in baseball hitting home runs." He trained me to try to hit down on the ball, so I would hit line drives and bloops and bunts. I did okay. I mean, I got offered a minor league contract in my senior year. I didn't take it, but it was one of those people that came around to watch Larry pitch. For that era, I was a good baseball player but the old-fashioned baseball, where it wasn't strike out all the time and hit a homerun once in a while. For me, if I struck out, it was totally embarrassing; I couldn't believe I could possibly strike out. I don't know much you know of older players, but the bat I used was named after Hall of Famer Richie Ashburn, which was this really thick-barreled bat, and I choked up two-and-a-half inches from the bottom of it. All I was trying to do was place the ball, not swing up on it. I was trained by Charlie Irace and other people to swing level as much as possible. It was a game where somebody who was five-foot-eight, 155 pounds could compete. I enjoyed it, and I had the speed. If I got on base, there was a good chance I was going to try to steal. That's the part I liked, and we had this one great season.

SI: How integrated was the school as a whole but also the baseball team, for example?

MG: Our baseball team, maybe there were twenty guys on it. Two of them were black. One of them, Booker--what was Booker's last name? Booker Hutchinson. He played right field. I usually played center field. He was a nice guy. He wasn't a great student, but he was a nice guy. He was also very fast. He usually batted first, and I usually batted second. The other guy, I can't remember his name, was the backup catcher. Oh, I can't remember his name, sorry. I'm trying to think if there were any Latino guys on the team. I can't think of any. No, I just can't think of any.

SI: Outside of sports and academics, was there much going on socially or culturally at Hunter College at the time?

MG: Well, we were all there when JFK was assassinated. We were sitting in the library. People were just totally dismayed. That was probably the biggest thing that happened, when he was killed, and I still have a flashbulb memory of it. I could probably walk into that library and find the same table I was sitting at. We just couldn't believe it. The librarian came by and told all of us sitting there that this had happened. It was just an incredible shock, a terrible moment. [Editor's Note: On November 22, 1963, President John F. Kennedy was shot and killed while traveling by motorcade through Dealey Plaza in Dallas, Texas.]

Socially, there was a lot of tension between the frat boys and the guys like me that didn't belong to frats. I characterized them as uncouth, the frat guys. It's probably totally unfair, but I did what I did. They would be drunk all the time. They did nasty things, like when they would be drunk, they would go down the street and key people's cars. In one case, a little old Volkswagen, they turned it over, and we didn't like that. They never got in trouble for it with the police or anything, but we would hear about it. That was probably the social thing I remember the most; there was a lot of tension between people like me and people like them because I just didn't like them. When Paul Leath was the provost of the Rutgers campus, he used to tell me the stories that sounded a lot like when I was in college with the frat guys, all the problems they would have with alcoholism and rape and things like that. It was bad.

SI: Were there a lot of fraternities at Hunter at the time?

MG: No, I don't think so. Just enough to be annoying.

SI: What about political awareness? You were in the civil rights movement era. Vietnam started heating up a little bit during your time there. Do you recall those being issues on campus, or do you remember some other issues that came up at the time?

MG: By the time Vietnam got to be really, really serious, I was at Columbia, and so I was literally in the middle of what occurred there as a grad student. I went to Columbia. I was little bit young, but they paid--I got myself a scholarship because I was a good test taker. When the things occurred on campus, people were out of control. I'm not saying they didn't have the right to be angry, but there were instances that I personally knew of where they set fire to a professor's

office and destroyed all his records. It evolved. I guess given my personality, the university asked me if I would try to be an in-between person between the extremes on one side and what they considered to be the conservative students on the other side. I did some of that. I don't think I was very effective at it, but there was a lot of screaming and yelling and a lot of unhappiness. I would walk around the different parts of the city and talk about the Vietnam War with people, but I never really was a yeller or a screamer. I didn't like setting things on fire. I would try to do things quietly. I don't know that I had much success, but Columbia really was in the middle of it.

SI: Was there a particular reason why the administration reached out to you to do this?

MG: Yes, because I had a reputation of someone who was, well, at that period, probably sort of unflappable. It would take a lot to really get me angry, just that I was looking for people to try to behave in a civilized manner and I could understand why some of them didn't want to. Setting part of the campus on fire was not a particularly good way to deal with the issue. That followed me all the way over to Livingston, when some of the students occupied the dean's office and I was up there, the same thing, trying to talk to people in a fairly calm way, trying. I don't know that I succeeded.

SI: Before we talk about that, I had a few more questions about Hunter. Tell me a little bit more about how your interest in these subjects developed, like geography as seen through statistics and blending in with your interest in science. Were you interested in health-related issues at that time, or did that come later?

MG: I think I was probably interested in a lot of things. [laughter] I lived in this very open, thoughtful family that didn't tell me what I could do and didn't tell me what I couldn't do. My father just said to me, "Look at the jobs I've had in my life. I never really enjoyed them, except for the one where I worked in a museum. What you should do is find something you really like and try to make a living at it." He was amazingly encouraging of me using my own brains. He didn't do what I understand a lot of other Jewish people's families told them, that you've got to be a doctor or a lawyer. I never had that. I had just, "Do what you like to do and just be good at it. Don't be mediocre." That really helped a lot all the way through school.

SI: As an undergraduate, would you get an opportunity to put some of these things into action? Would you be able to do research, or was it mostly traditional class learning situations?

MG: I would say that I learned a lot in class, but I also learned a lot by just going to the library and taking out books. [laughter] Here's a story that I remember. When we moved into Yonkers, the one library at that time was totally on the other side of the city. I either had to get my parents to drive over there, or I had to take a bus, which would take an hour-plus time. I think it was my mother--she never told me she did it, but I think she was part of it at least--she got them to run a book mobile over to our part of town that would stop right next to the public school every two weeks, and I would just load down with books. I would just go in there and load down with books of one kind or another. I was trying to study chemistry because I thought that was really interesting. How do you make plastic? I understood it was made out of oil, but how do you do it? I tried to find books on that, and I would read them. Of course, I didn't have a clue what I

was reading, but I would still work away at it. When I finally had chemistry, then I could actually understand it. But I just loved to read. It didn't really matter. I just loved it. I liked reading Shakespeare even, [laughter] which little boys didn't like to read. That book mobile made a big difference. I didn't have to go all the way across town. They would just bring a bunch of books, and I would get them and read them.

How much do you learn in class? They give you a chance to learn things, and if you want to really learn it, then you have to do it yourself. This is what I tell my students these days. I say, "You know, I can teach you some things, but eventually if you want to learn how to do things, you have to do it yourself. I can talk until I'm blue in the face; you have to want to learn it yourself." I still believe that.

SI: How did you find out about the opportunity to go to Columbia a year early?

MG: Well, I had graduated public school a year early, and my parents decided that I was smart enough that I should try to go to schools--they discouraged me from going to UCLA, which I think probably was a good move, but as long as the school was somewhere near where I could go home every once in a while, I think they were okay. Columbia is a famous school. So is NYU, but, at that time, Columbia had a better academic reputation, so why not? I took a couple tests. One of the things I was good at back then was taking these standardized tests, and I got pretty high scores. I got into Columbia, and Columbia offered me a scholarship, paid my tuition, and I got a fee, an extra two thousand dollars a year, which at that time was actually fairly significant. I could afford to buy my own food and do what I needed to do. It worked out. It was either going to be Columbia, the graduate school, or it was going to be the University of Chicago. I had some relatives in Chicago, but I always thought Columbia was a great school. I was thrilled that they took me and then gave me a scholarship.

SI: Was there a particular professor that you started working under right away? What department were you a graduate student in?

MG: I was focusing in the Geography Department to be a spatial statistics person. That's what I went there for, but I also met some people at the Teachers College and a person in the History Department and then I met a couple people in the Economics Department. They were all, one after the other, terrific people, for example, Professor Bill Vickrey, my advisor George Carey. By the way, Carey, who passed away some years ago, was a dean at Rutgers. He's one of those Livingston College people, and he helped recruit me to Rutgers. But Carey said, "There's this really smart guy named Vickrey. Why don't you go over there and learn something about urban economics?" I went over, and Vickrey, he won the Nobel Prize in economics, but he seemed totally absentminded. His love of economics was amazing; you could taste it. So, anybody who would act like that was totally cool with me. He and I got along really, really well. Then, finally, when he won the Nobel Prize, he died right after that. It was a shame, but he was just such an infectious agent for learning about economics. I had a lot of people that were really smart at Columbia and only too happy to work with me.

Carey was the best. George Carey was the best. The first time I had met him, they assigned him to me. He advised me, and he said, "Listen, you can get a master's degree here, but given your

academic record, you could do a lot better than that. It's time that you stop worrying about playing baseball and instead focus on studying. You could be really good." He then proceeded to whip a book off his shelf and said, "In addition to the courses you're taking, I want you to read this book by next week. Come in here, and I'm going to give you a quiz on it." He wasn't kidding around. Carey was also from the Bronx and a brilliant guy. He spoke multiple languages. He'd pick up a musical instrument and start playing it. I loved that guy. He was just the nicest person. He and I were together until he died, which was a big loss. He was just a wonderful guy. When we had his funeral, I was the one that got up and talked about his days as a professor. It was tough not to cry. He showed an enormous amount of faith in me. He just wanted me to be an adult, "If you're serious about this, really be serious about it. Read this, this, this," and I'd come back. Each week, he picked some book. One day, he picked up this book called *Modern Factor Analysis* written by Harry Harman. This is a statistical technique that I've used many, many times in my work, and I still teach it. He said, "This is still a pretty new book. I want you to read it, and then you and I are going to work through the matrix algebra together." As an undergraduate, the math wasn't that hard for me, and he understood it too. He wrote the first article I know of in the geography literature that used factor analysis, and he and I and another one of our graduate students, Lenore Macomber, wrote the second. I have used that technique, I don't know, in forty different studies, and I still teach it to our students. Carey was a super guy. He showed so much faith in me. We should all have mentors like that. We'd be blessed.

SI: It sounds like you were really taking a multidisciplinary approach to your subject. Was that unusual at that time, or was that how it was done in your field?

MG: I would say it was relatively unusual. It's more common now because I think we've given up the idea that any of the stovepipes that were in are going to solve the problems. I was into that when I was an undergraduate; I would just try to read around a subject. My Ph.D. thesis, which I actually did for the State of New Jersey, they funded it, was a water network problem. There was this gigantic drought during the '60s. Carey decided that I could develop a mathematical model that would allow the state to figure out [how to] transfer water from places that still had water to places that didn't. The math part was easy, but I started working on it and I could see what the real problems were, the politics, how the people in South Jersey didn't want the water going from South Jersey up to North Jersey. I remember Richard Hughes, the former governor, since I met him while in the process of working on this, he explained this to me. He said, "Some of these things go back to before I was born," talking about himself, that these places just did not get along with each other. Of course, when Brendan Byrne was governor, the southern part of the state tried to break off and form its own state. I found the math part easy. The part that was interesting for me is how after a person like me or Carey or people like us did our work, how do you convince people and decision makers that that's the right way to go, that is, to actually listen to what the science shows? That's the part that I've always found most challenging and still do. I liked it, and I think it has something to do with my parents and the family I came from. Reading all of those newspapers and getting all of this information, it was not a difficult problem for me to see the relationship between crime, lack of healthcare and all sorts of other things, poor education, poor housing. For me, they all make sense. For a lot of other people, they separate them into categories. For me, they're all part of the same problem, social justice or environmental justice, for example.

SI: Did your work at Columbia mostly focus on issues pertaining to environmental-related issues or topics related to resource use?

MG: Yes. I was on the line between environmental health and economic impacts. That was the area I was most comfortable in. I'm still very comfortable in it. When I've done work for the Department of Energy, sometimes I'm working on the economic impact sides of things, and sometimes I'm working on the environmental health side of things. It all fits very nicely with the idea of sustainability, which has the environmental leg, the social leg, and the economic leg. So, I'm one hundred percent comfortable with those three fitting well together. It was made for a personality like mine.

SI: You were doing this at the time when the modern environmental movement was really starting to take off. Were you following that? Were you aware of it? Were you involved in any way? Were there groups, for example, that were active?

MG: Yes. When Richard Nixon signed the National Environmental Policy Act and it became a law on January 1, 1970, I couldn't believe it. Here you have a Republican president developing an Environmental Protection Agency--it didn't come immediately, it came later that year--but appointing the head of that agency, a Republican, and the head of the Council on Environmental Quality, a Republican. The Republicans were for the National Environmental Policy Act? It was a shock. I wasn't the only one, but I remember talking to George Carey about it, to my parents about it, to other people I knew about it, we were stunned. We were really, really stunned that they would do that, especially Nixon. Later on, we learned that Nixon was afraid he was going to lose the election if he didn't go for it and he really was against it and he tried to subvert NEPA by ignoring it, by taking the action and then doing the study later, but the courts wouldn't let him do it. The federal courts wouldn't let him do it. You can beat on Nixon for the things he did that were inappropriate, but the guy is now a hero to a lot of environmental people because he's the one that signed all of those laws in the early 1970s. Thank God he signed them. Clean Air Act, Clean Water Act, Safe Water Drinking Act, one after the other, after the other, all signed by Nixon. Whether you loved him or didn't love him, he signed them. That was a shock, an absolute shock when it happened.

It allowed us to work with people from the Environmental Protection Agency that didn't even exist. Some of my better students used to go work for what we called the "Boy Scouts." The EPA was the "Boy Scouts," and they went to work for EPA and did very well. Some of them came back to academia, but others did not. Oh, it was just wonderful. We were doing what I would call group think and group act, where we would just talk to each other, kind of knocking on our heads. Is this really happening? How far can we push this?

It got pushed a long way, which is why forty years later, some of my newer buddies, who are my age or older, wrote an article in the *American Journal of Public Health* in which we essentially said, maybe in a nice academic way, that the Trump administration was destroying everything that we had worked on for fifty years of our lives. These are former EPA officials and other senior public health academicians from across the United States. I was the first author of it, but they wrote at least as much of it as I did. We all shared a belief that the United States had the

best environmental protection programs in the world. Now, if you compare the United States to the other twenty-five urban-industrial countries, we're at the bottom. It's being reversed now. That's a great thing about now, but it was so painful. To have lived through all of those years of the United States formally adopting an environmental ethic, and, in fact, the definition that a lot of people use in sustainability these days comes from the preamble to the National Environmental Policy Act. So, it didn't get lost on people. I've served on a bunch of those sustainability committees for the National Academy. It was painful, literally painful, to see what was happening in the United States. I was right in the middle of it and still am.

SI: Going back to the turmoil on campus when you were at the Columbia, you have these protests that are met with violence or turn violent. Were you on campus for those, or were you mostly dealing with the aftermath of that?

MG: No, I was on campus. I lived a block away, maybe a block and a half, out the door, down the hill, into an apartment. I was right in the middle of it. I mean, I sat through screaming tirades on both sides. I just had a hard time with people taking violent actions. I understand if countries hadn't stood up to Hitler and Japan, the world would be a lot different now. I understand, but it seemed to me, in the case that my face was in at that time, there was unnecessary destruction of property and violence often against people who had no stake in the outcome. It just seemed a little too far, people losing control when they didn't have to. When there were marches, peaceful marches, I participated in some, some that these same people did, but to destroy things just was further than I could go.

SI: When the university reached out to you to become a liaison, who actually spoke with you and asked you to do this?

MG: It was one of the deans. I didn't know him, but [I] was recommended by probably our department chair, I don't know. I can't give you all those details. I don't really remember them, but I remember saying, "I'll try" because I knew a lot of the people who were involved. The Vietnam War was a real turning point for a lot of people.

SI: Were you yourself concerned about the draft or that sort of thing?

MG: I believe we had to take a test, and if you got above a certain score, you were fine. I wasn't concerned about the draft. It was a difficult situation for me because my uncle had been in the military and he was very much pro-Vietnam War and was convinced that somehow if Vietnam fell to what he considered to be the Chinese puppets that everything would fall. I just didn't believe it because my own reading suggested to me that South Vietnam's leadership was not exactly doing a good job with its own people any more than China's was when Mao took over. Mao hung out in the rural parts of China, and the reason I think he was so successful was because the previous "leaders" there did not go out of their way to help poor people in China. Mao, in the end, didn't either. I mean, a lot of them died from starvation and things when he tried to rapidly industrialize the country and took the money out of farming. But Mao at least came across as a person that cared about his people. So, I had a lot of trouble with the Vietnam War. I didn't see how that was going to turn out in a positive way. It was very painful for a lot of people.

SI: When you said you would go around the city and talk to different people in different groups, was that sort of informally on your own, or would you go to events or meetings? How would that pan out?

MG: I knew some people. They would ask me to come over and talk, and then sometimes I called up some people to see what they thought. I wouldn't say that I was adventurous enough to go into a place that I didn't know anybody, just to go into the street and start shouting that, "You must do this and must do that." I don't think I would have been very successful. I do some of that still. If people ask me to come talk about nuclear power, nuclear weapons and things like that, and I know them and it seems like they really are interested in, I'll call it, an honest broker view of the situation, I'll do that. I have done it many times.

SI: What would you say stands out in your memory as something that you learned from these conversations, if anything?

MG: I think each situation is a little different. If you're going to be communicating with people, you have to do a lot of listening. I might know a lot about nuclear weapons, plutonium for example, but if I'm going into a group and what they really want to do is find about nuclear power, reliability of nuclear power, I need to hear that and I need to do my best to try to address what they're really interested. Otherwise, I'm wasting my time and their time. Listening is so incredibly critical in this process of communicating information. Don't brag about your credentials. Don't give canned speeches. It's the same as when I talk to reporters. I try to answer their questions. If I can't, I just say, "I'm sorry, I don't know."

SI: What about looking at the different groups involved in the Vietnam War protests? First, I want to understand, was the administration trying to get you to get them to stop doing violent protests, or was it more they wanted you to just get information back to them about it?

MG: No, they didn't ask me to get any information back to them.

SI: Okay.

MG: They wanted somebody who could maybe get the people to be a little more behaved, not burn somebody's office down, not cause violence and destruction.

SI: What would you say you learned from the different people that you talked to in doing this?

MG: They were very passionate about their views. I saw myself, as I have so many times, as a person who has certain information and could put that out on the table and get a discussion going, but if the discussion led to people throwing stuff at another person, that didn't work for me. They really will listen if you try to address their concerns. Especially in the Vietnam case, I didn't have any easy solutions, but in some things I deal with now, I can come to the table with solutions. I don't know if they're the right solutions, but at least I can say, "Well, we could do this or we could do that or we could do that." But you have to have the right personality, attitude, to be able to be yelled at, screamed at by people, and then just take it and come back

with information that they may three hours later think was a good idea. People don't want to be told things they don't want to hear, but if they trust you, they believe in you, they will hear it. They may not agree, but they'll listen. But if they think you're BS-ing them or trying to impress them with how smart you are or whatever, they're not going to listen.

SI: Going back to the water management issue that became your Ph.D. dissertation, how did you get involved in that issue? Can you tell me a little bit more about what that entailed in terms of your work?

MG: Yes, I was looking for a thesis topic. I had written down a couple, and we couldn't figure out how I could get the money for it. So, George Carey called me over and Leonard Zobler, my advisors from Columbia, and they said, "Hey, how would you like to work on this? We think you can do this. You just have to know this tool called linear programming." In this case, it was a little bit more than linear programming, but, again, the math wasn't the problem. At the time, I thought, "Well, isn't that interesting?" because I remember when I was kid, my father, my grandfather and my uncle had batheless-shaveless days because there was a major drought in New York City, probably in the '50s. It must have been in the early '50s, when I was a little kid, and I remember how annoyed my grandmother and mother were because they weren't allowed to clean themselves up because it was such a bad drought. So, I remember thinking, "Hey, it would be interesting to work on this. Maybe some of the things I've learned could be of some use." I was definitely in favor of it.

SI: This is way beyond my field, but can you explain to me what the research entails in this type of instance?

MG: Yes, sure. Imagine a network, a network of places that have water, a bunch of places that need water, and then pipes and valves and pumps and all sorts of stuff connecting them. It's a complicated engineered system. New York City had one New York City water system. So, if there was water needed in Brooklyn, they weren't going to let it all sit in the Bronx. But in New Jersey, we had hundreds of water systems, some owned by cities like Newark, Jersey City and so on, and others owned by private companies that were going around the state buying out smaller companies. You had public-private, which was very complicated. You had a history, which Governor Hughes explained to me, of an antagonism between some of these. My job was to figure out how much water was actually available because the drought showed that they didn't have as much water as they thought in the surface water bodies. So, my colleague, Bob Horton, now deceased, estimated how much water they actually had, based on different probability scenarios. My job was to figure out, along with Zobler and Carey, how much water could actually be transferred from Town A to Town B by the existing pumps and so on. Some of those were on paper but didn't work. So, we had to try to get a realistic view of how much water you can move, and then I worked a lot on the water demand side. How much water was actually used in each place? So, you could see places of demand, places of supply, and places to transfer.

Well, it turned out that the drought was so bad that we were struggling to have any drinking water, not only here but in New York City's surface water system. They really had a problem. New York City was actually considering pumping water out of the Hudson, desalinating it, and then using it. Fortunately, it started to rain, but after three years, I think it was thirty-nine

straight months of below-average rainfall, New Jersey was really up against it, and the solution was going to be to transfer water from South Jersey, which had ground water, to North Jersey. I had to put the mathematical model together, in which we had the demand that we thought was needed now and a few years later, the supply transfer network, and the actual water supply. So, it's a mathematical programming model. The math was easy. It was getting all that data and how much of it could you actually trust.

We did that. We presented it to the state. They were very interested, but their interest dropped a little bit because, wouldn't you know, it started to rain a little bit more. Rain is rain. Sometimes, you can have a drought, and sometimes if hurricanes show, you're going to have a flood. So, they took this model, and it became incorporated into what the state developed as a state master plan water supply study, in which the state looked back at the big picture of where were these sources of water, what was the realistic yield under different conditions, what areas of the state were expanding and needed more water, and what was the network of pipes and so on. That's what it was.

SI: As you were coming to the end of your time at Columbia, were you thinking that you wanted to go into academia? Did you think you would get a job in a policy type unit in government or something else? What were your plans for the future then?

MG: Well, if there were jobs in academia, I thought I was going to get one because there were a lot of academic jobs. I came in with a Ph.D. with strong quantitative skills exactly at the right time, at the time when we were having the so-called quantitative revolution. So, Carey and Zobler and my other advisor, my friend, also deceased now, Doug McManus, said, "You'll have multiple job offers. Don't worry about it. Just try to figure out, interestingly enough, what part of the country would you like to live in." That's what they told me. It's not like today where I have all these smart students, who are at least as smart as me, and they struggle to try to get an academic job because there's not that many jobs, except, as you know, in certain fields that are emerging now, where you walk out the door and you get a job offer. That's when I came out. I came out when a person like me with my skills was marketable.

It didn't take very long. I never even formally interviewed for my first job. I went to a conference and gave an overview of my thesis, and the next day and the day after, I had two job offers via the phone, both from Manhattan. One was at Columbia, who wanted me to stay there, and the other one was from Manhattan, Kansas, Kansas State. [laughter] How totally weird is that? I love Columbia. So, I took the Columbia job, and I was going to be the "quantitative" person, the new quantitative person, along with my colleague George Carey, who was going to stay there, and we were going to work with this other fellow, an industrial location theory person named Gunter Krumme, who was German, and develop this real quantitative core at Columbia University. That was the plan. The salary was a little lower than they are today. [laughter] My first salary at Columbia was ten thousand dollars a year.

SI: It is about four-thirty. Do you want to keep going for a few more minutes?

MG: Yes, sure. I mean, it's up to you.

SI: Yes, maybe we will talk a little bit more about your years at Columbia, and then we will get right into Livingston next time.

MG: Sure.

SI: You set up what you were looking to do during those first few years of your career and your time at Columbia as an assistant professor.

MG: Right.

SI: I talk to assistant professors now, and it's a very stressful time in their careers. What was being an assistant professor then like?

MG: Other than having a big argument with the then chair, I loved it. Here is the guy who is basically a bookworm, maybe an athletic bookworm back then, and was being paid to do stuff that he would have been happy to do for free. They offered me a job. It was at a prestigious university, and it worked fine. I got to teach all sorts of interesting courses that I was happy to teach. The one sort of funny thing about it is some of the students were older than me. I was pretty young at Columbia, and I taught students from the business school, from the engineering school, economics department, students from all over, I just loved that. I would have been happy to say at Columbia, but I ran into a problem with the chair, who told me that he didn't believe that the kind of research I did would lead me on a path toward tenure. He proceeded to reinforce that by increasing my teaching load, and, at that point, I walked into his office and said, "I quit. I have enough money saved. If I don't have another job, I'll wait out a year." So, I quit, and then I got hired by Rutgers. It didn't take very long. Rutgers had a very different view of quantitative-based research. I was very sad. I was sorry to leave Columbia.

SI: Was George Carey already at Rutgers?

MG: Well, George Carey came to Rutgers for the same reason I left Columbia, and Gunter Krumme, our friend, the industrial location theory expert, he went to the University of Washington-Seattle, same reason. They were senior to me; they were smarter than me, let me put it that way. They were more in tune to things, and they left before me. I had a chance to go to other schools, but Rutgers was fine. They were very nice to me when they attempted to recruit me, especially when George Carey tried to recruit me. Ernie Lynton, who was the dean, called me. I felt really welcomed there, whereas at Columbia, where was I? I was in with a person--how bad it was, I guess I can say it. They had a terrible indoor air pollution problem in the International Affairs Building that was brand new. I told them--I mean, I do know something about air pollution--I told them they needed to run the air conditioning continuously for three weeks before people occupied that building and they didn't do it, and all sorts of people got symptoms from it. It's not even complicated. They just wouldn't do it. So, I didn't feel like it was a welcoming place anymore.

SI: It sounds like you were probably well versed in computing by the time you got even to graduate school, but how early in your career did you start using computers?

MG: [laughter] I had to use them. My parents bought me a Keuffel and Esser slide rule for graduating from college, and so I used that. I was looking around on the web. I found out that if I had a new one, I could get 870 dollars for it. So, they're not that many still around. But I used a slide rule. I used an old-fashioned hand-crank calculator, and I really understood, if you will, the insides of the car, but I couldn't really run it because we had so little data. So, the computer revolution, in which Columbia was one of the leaders at the Watson Laboratory, was unbelievable.

I ran my Ph.D. thesis at the engineering school IBM 360 [in the] basement with a whole box of punch cards. That was my thesis. I had to go over there, stick it in, and hope that none of the cards jammed. I wrote my own programs, not in FORTRAN IV, but in FORTRAN I, the first FORTRAN. [laughter] I programmed in FORTRAN, and I ran my own stuff. Then, some people started developing packages later on, so now we have all these great packages.

When I worked on cancer mortality in the United States, the calculations that I would do at the Rutgers mainframe computer, when I moved out here, would take three hours to do one run on the mainframe. So, I used to go in the middle of the night and run it. That would be done in a second and a half on my laptop that's right in front of me now because everything is so small now. They can put so many pieces of information now into tiny little machines. That was the only way I could have done my work. The real work I did required real data. If you're going to have a policy influence, you have to work with real data. Theory only takes you so far. I've loved working with data, real data. It was good to have learned all of the theory behind it, but having real data was just amazing, just amazing.

SI: Is there anything else you would like to add for this session? Is there anything we skipped over?

MG: I enjoyed it. I hope I didn't bore you too much.

SI: No, it was fascinating. I am interested to learn more about Livingston when we get to the next session. It is very interesting to hear how your career developed and your interests. I do not think this applies, but I will ask it anyway. I know since we have what are now the undergraduate campuses but then were colleges with their own faculty, were you dealing with any of the other colleges, or was it always just Livingston?

MG: Well, when I first came here, I was dealing with Livingston, except that I knew a lot of other people in other departments from previous engagements. When people in your own field came up for promotion, there would be a thing called the section, I'm sure it doesn't exist anymore, in which we would have meetings with people from Camden and Newark and so on in similar fields. So, I did know quite a few people from elsewhere, probably mostly in the Engineering School, people in Rutgers College, and a few at SEBS. [Editor's Note: The School of Environmental and Biological Sciences (SEBS) is a school at Rutgers University that was formerly known as Cook College.]

SI: When you were being recruited, it was just people from Livingston you were dealing with. It was not people from Rutgers College or maybe Cook College.

MG: Understand that when I came here, the Geography Department offered me to have a part-time appointment in geography, but I just went with whatever George Carey said. I was at Livingston. Having talked to Ernie Lynton, my previous experience was very limited with deans, and to have somebody like Ernie take an interest in me made a huge difference.

SI: Well, thank you very much. I really appreciate all your time today. I am going to stop the recoding.

----------END OF TRANSCRIPT----------

Transcribed by Jesse Braddell 6/30/2021
Reviewed by Mohammad Ebad Athar 7/26/2021
Reviewed by Kathryn Tracy Rizzi 9/20/2021
Reviewed by Michael Greenberg 10/1/2021