In Memoriam: Mike Schultz

[Announcer] This program is presented by the Centers for Disease Control and Prevention.

[Sarah Gregory] Hi everyone, I'm Sarah Gregory, and today I'm talking with Dr. David Morens, Senior Advisor to the Director of the National Institute of Allergy and Infectious Diseases and Associate Editor of the EID journal, and Dr. Rohit Chitale, who is a senior consultant to PATH, an NGO in Seattle. They will be remembering their late colleague, Dr. Myron "Mike" Schultz, who was an epidemiologist in CDC's Global Disease Detection Program, as well as a huge supporter of the EID journal and authored most of our fun photo quizzes. Welcome Dr. Morens and Dr. Chitale.

[David Morens] Thank you, Sarah.

[Rohit Chitale] Thank you Sarah, delighted to be here.

[Sarah Gregory] So let's talk about Dr. Schultz.

[Rohit Chitale] Well great, well thanks Sarah, I'm really…this is Rohit Chitale…and I'm delighted to be here on this podcast with David, and you know my…I'll tell you just briefly…my association with Mike and tell you more about it throughout the podcast, but basically Mike, you know, actually, Mike was initially with the Global Disease Detections Operations Center when we had started the operation center in 2006, and we hired Mike in 2008. And I'll talk more about that. But I'd like to actually, maybe just ask David, if you don't mind, telling me a little bit about how you met Mike, because you've known Mike much longer, I think, than I have, so maybe you can…maybe you can tell us a little about that.

[David Morens] Yeah, thanks Ro, and hi to you and to Sarah. Like you, it's a great honor to be able to talk about our friend Mike and remember him. And my story is, I go back a little bit farther than you Ro. I met Mike around the time I started in the EIS, the Epidemic Intelligence Service, at CDC and that was 1976. And back then, maybe still now, but back then EIS officers coming to CDC in July had to take a 3-week EIS course. And in those days, Mike was very much involved with EIS officers, he loved to interact with young scientists, he loved to be involved in the training, and somewhere, I don't remember the exact time, but very shortly after I got to CDC I met Mike and got to know him. And then during my two years in Atlanta in the EIS, I interacted with him. We had these weekly meetings in, I think it was Auditorium B in the old Building 1, which doesn't exist anymore, and he would always be at those meetings, usually sitting in the back quietly, but he would love to interact with people, and he just became…he was a friendly, supportive presence and I think he became the friend of many of us just sort of by osmosis. And you know, it was just…it was almost like he was always there and always a friend and always interacting with us.

[Rohit Chitale] Yeah, thanks, David, that's…that's, yeah, it's…you're bringing back a lot of memories for me as well, but mine of course, as…as you claimed rightly, were a little bit after yours. And so, that's kind of, I guess what set the stage for Mike to get to where he was when we met. And that was technically in summer of 2008, which seems like a long time ago, but maybe it wasn't that long ago. But basically in summer of 2008, we were about a year and a half into the start of the Global Disease Detection Operations Center, which was this cutting-edge, novel center at CDC, started by Dr. Scott Dowell and Dr. Ray Arthur, to essentially pull together

almost the concept of One Health, kind of, the really, one look at diseases, through the lens of human medicine and whole medicine and population medicine. So the center was created in 2006, and in 2008 we basically…we only had myself as a PhD scientist. So we had slots for an MD and a DVM, so we're interviewing for these positions, and I remember being on the application, on the interview panel, along with Scott and Ray, and looking at a whole bunch of, you know, USAJOBS applications and there are a lot of really good qualified candidates, but one of them really stood out, and it was Mike—25-page CV, overwhelming, you know, just awards and EIS officers trained and FETP graduates trained and papers et cetera, and I was like, who is this guy, you know, but Scott and Ray were also really impressed. So we decided to interview him. Clearly we felt, oh, he was overqualified but we were also wondering, "Well, why does he want to do this…this position?" So we interviewed him, and I mean I have a very fond memory of this because we interviewed him in Scott's office, and it was the three of us and Mike, who was clearly the oldest candidate, but he was very well-dressed, suit and tie, and I just remember asking him, I'm like, well, "So, would you be okay, you know, taking some direction from a more junior scientist—myself—and working in a really fast-paced environment in the Emergency Operations Center?" because that's where the GDD Operations Center was based. And that was just…and you know, he was like, "You know, I think so. I'm very excited about the challenge." And so Scott said, "Why don't you take him down to the EOC?" And so we took him down to the EOC and I just…one of my…one of my also fond memories is when he said, "So this is the Emergency Operations Center. Where is our office, where is the office?" And I said, "Well, this is the office." And then he said to me, "Where do you rest during the day." And I just remember I said, "Well, we don't really rest here," but in the end, sort of this long story short, long story short, he ended up joining us. We got him his own office, as well, so he had two spaces, and yeah, you know, he would write the In Memoriams for EID and you know he would do other work. And so the rest is history, but it was a really great start to bringing him on and, you know, it had lots of…lots of benefits over time. So that's kind of how I initially met Mike.

[Sarah Gregory] Excuse me for just leaping in here with a question, but Dr. Chitale, after him saying he wasn't sure about the stamina issue and he wanted his own office and to rest and certainly EOC is not known for rest periods, why did…why did you choose him?

[Rohit Chitale] Right, exactly. Well I think that--that's a testament to Mike, you know the Latin phrase *primus inter pares*, first among equals, we were all, you know, GS-14 scientists, so, in a sense, we were equal, but of course, some are more equal than others, that's the thing. Mike was…Mike was, you know, extraordinary. He was…we wanted a physician, you know, at a mid- or moderate level, maybe the level I was at, or a little higher. But we got, you know, we got that in spades with Mike, we got somebody who had a voluptuous career and had seen so many investigations and had mentored so many people and been all over the world in his career, as we've written about in the paper, so you know, we were, I think we saw that. And so we were essentially willing to take…like, okay, so his pace may not be as quick as mine, but, we said we could accommodate that. In the end, what was amazing was, he did it, nine to six every day, you know, day after day. So that's why we took him, and so, you know, like I said, it paid dividends.

[Sarah Gregory] And he wasn't then at CDC at the time? He was…he came in from outside?

[Rohit Chitale] No, no. No, he was at CDC. So, he, yeah, if I recall, and David may remember, he was in Commissioned Corps for, I don't know, twenty-five–ish years. He retired from the

Corps, I think immediately became a civilian, a GS civilian, and then made his way over to us; I believe that was the trajectory.

[David Morens] Yeah.

[Rohit Chitale] Yeah.

[David Morens] I think that's correct, Ro, and you know, it's interesting, listening to you tell your story about Mike in later years, of course I knew him earlier, and in fact I think Mike had roughly a fifty or sixty-year career, maybe fifty-five years at CDC, which could be a record or close to it. And some of that time was before I showed up in 1976, in fact, quite a bit before my time. But some of it was during my time, and I got…and I knew Mike well; after I left CDC in 1982, I continued to have a relationship with him. But I saw a different part of his career; I didn't see him or work with him as an older man, I worked with him when he was sort of in his prime, and…but I'm not surprised what you tell me about his work in the EOC, because he did like challenges, and I think that, you know, this idea we have that older people don't have stamina—I think at Mike's age, you know, you have intellectual stamina, you may be, you know, you may be not able to run the fifty-yard dash like you used to, but you can still think and you can still be useful, and not so much with technical knowledge, as with wisdom, experience, and perspective on things. That's one of the things Mike had, because he had, you know, an enormous number of experiences during the prime part of his career in parasitology, in tropical medicine, in general, in international training, and just a whole bunch of different things, and by the time he got to be an older man, say in his sixties and older, you know, he had a wealth of experience he could draw on, to see things in their context, in a big picture sort of a way, which is something that is easier for an older, experienced person to do, and not so easy for a younger, sharp, bright young person to do, so. But it's great to hear your stories of him in the EOC. Mine are quite a bit different, but I saw Mike, I think, at the peak of his powers, and he was a pretty impressive guy.

[Rohit Chitale] Yeah, no, I think you're right and then the question is like, you know, as we say with disease, and you know very well, where's the peak, you know, and we thought…we thought we were getting Mike after his peak, and in some ways the peak kind of continued, you know. And I just…I would just kind of build on what you're saying, and you know one of the special memories about Mike I remember was, you know, as I mentioned, the EOC was a fast-paced operation, and Mike, being a good, you know, strong scientist, really the CDC does…focuses on the specificity, right, of diseases, they want to be right. They don't always want to… But we in the EOC, we really had to focus on this balance between sensitivity and specificity. You know, we didn't want to be too fast and be wrong, but we also didn't want to wait for all the information and then err as well. So, you know, we had…we had this balance. And I think the GDD operations center was kind of born in that time, kind of post–9/11, and during that time when, you know, post-SARS, and what have you, international health regulations. So it was a really…it was a balance. And I just remember, one of the memories that I remember with Mike was…just how he was so impressed with our cutting-edge systems, you know, to find and report diseases like, we were talking, as you know, as we noted he was a veterinarian and a physician, so he was always thinking about those kind of things, you know, like, "What are the diseases? If they're in humans? What are we seeing in animals?" and he just was so excited to be, you know, still learning these new systems where we could find, like, what we wrote in the paper one dead cow in the middle of Saudi Arabia, you know…which really was a hallmark of, "Is it just animal diseases or is it human disease?" and so that was something that I remember, you know, and he,

he…a lot of it was IT, you know, and IT and he said…David, as you alluded to…IT has been kind of been more of this sort of, you know, recent phenomenon, right, as a sense of the importance of IT and now to merge it with medical, you know, and public health. So he would, you know, he would ask me for a lot of help on IT. And not everybody in the operations center had patience for that….but I have a little bit of a background in computer science and so, you know, he would take notecards out of his shirt pocket and he would write down what I said. You know, he would write anything down that could help him. And you know, one of the sweet memories is he had this essential tremor, right? But he…it didn't matter, he didn't type, he wrote, on that notecard. And he put it, and he kept it, and he pulled it out, you know, months down the road, he's like, hey, I got it right here. You know?

[David Morens] I mean, that's the way it was in those days. I even had the same experience, you know, those of us who were physicians, we all are used to having little notecards or little pads to write so-called scut notes, little, you know, to-do lists when we go and see our patients in the morning, and you know, it's interesting to think about, but younger people don't realize there was a world before computers. When Mike was an EIS officer, all he was issued was a slide rule and a desk and a telephone. And that was it, there was nothing else. There was no electronics, not even calculators in those days. So, you know, his trajectory was over a long period of time which encompassed an incredible change in the technology, in the techniques of epidemiology, and he, you know, bridged that, and he did well at the beginning and he did well at the end.

It's…so Ro, I want to pick up on something you said about his MD and DVM degrees, 'cause I think it's important that, you know, there…until about ten years ago, there was no such thing as the term 'One Health'. And maybe we can say a little bit about what that is for listeners, but Mike was one of those people who, with his veterinary and his medical training always saw things in a One Health kind of way. Which is to say that the…you know, diseases are a function of the interactions between humans, animals, and the ecosystems and the environments in which diseases occur. And to really understand them, you have to understand the whole big picture, not just individual parts of it. When Mike was at CDC, at least in the beginning, he dealt a lot with zoonotic diseases, diseases that…or organisms are in animals and the environment, but they can be transmitted to human beings and human beings can become infected and ill from those diseases. And, you know, that's not something that's new, that was known for over a hundred years, but the fact that it was such an important element of disease occurrence was realized very early on by two luminaries at CDC, one of which…one of whom was Mike, and the other was Jim Steele, one of Mike's mentors and a great, you know, ex-CDC scientist who died a few years ago, unfortunately, close to or at the age of a hundred.

[Sarah Gregory] David, let me just interject here for listeners that if they're interested, we also have a podcast online about Dr. Steele.

[David Morens] Great, that's great. I didn't know that! And thanks for telling me. Anyway, you know, Jim Steele and Mike Schultz were alike, they were of a different generation, but they were alike in their broad perspective of animal and human diseases in epidemiology and epizootiology, and I think they must have, it was before my time. By the time I got to CDC, Jim was already retired, although he came back to all the EIS conferences and became a friend. But you know, these guys are people who saw the big picture from the beginning. And they were able to shape what CDC did and how it operated going forward, not through leadership in the

formal sense, but by quiet leadership interacting at the trench levels, and I think their influence on CDC, these two men, is great and probably underappreciated.

[Rohit Chitale] Yeah, no, I think that's great you mentioned that. I met Jim Steele in his last probably several months, I believe, when Mike introduced me to him. And yeah, it was pretty amazing 'cause we also hired a veterinarian along with Mike about somewhere in 2008, and so Mike was, you know, this sort of super combination of an MD and a DVM; we had the DVM as well, and he was kind of a hybrid. But you know, a lot of…exactly. So, this job was great for Mike, because you know, like diseases like anthrax and of course H1N1 in 2009, which we were, you know, intimately involved with in the ops center…to, you know, I mean, a number of babesioses and dengue and even Ebola. There were so many zoonotic diseases that we were involved with investigating that Mike really kind of always asked that question, sort of, you know, what's going on in animals, and, you know, also relating that to the kind of travelers medicine that, you know, that's the article that he published, "Unde Venis? [*Dr. Chitale*: you know] (Where Have You Been?)," which was just seminal at the time, back in the 60s, when that was published in *Lancet*. So yeah, I mean I also think of him when I talk to Selma, his wife, I think of him as kind of a pioneer of One Health but also, you know, as we've written in the paper, tropical medicine and parasitic diseases, as well.

[David Morens] Well, you know, to…Ro, to carry that a little bit further, you know, One Health is certainly related to…One Health issues are certainly related to something that became a big theme in infectious diseases and epidemiology, which is emerging infectious diseases. And this all began—well, it didn't…it all began centuries ago—but it began in the recent past in 1992 when the Institute of Medicine put out a report on the importance of emerging infectious diseases. And CDC was the first of the federal agencies to come onboard with a plan, which I think was crafted by many people, including Ruth Berkelman, but many others, almost certainly with the input of Mike. And this…these plans that came out of CDC, and eventually other federal agencies, really changed the way we do epidemiology and infectious disease research. The CDC plan was aggressive and basically it reoriented the CDC towards infectious diseases again, because backing up to 1981, ten years before the Institute of Medicine report, CDC had decided to more or less get out of the business of infectious diseases, and developed six centers, five new centers, that were not infectious centers. Because the idea was that infectious diseases were becoming controlled, pretty soon we'd conquer them, they'd fade away, and we'd be left with chronic diseases. Then we realized, with HIV and everything, that that wasn't true, and so CDC had to reorient back again and I think that the ideas and probably the activities, although I wasn't there at the time, but certainly the ideas of Mike and Jim Steele and others, were really very relevant to the new going forward of the federal response to emerging infectious diseases.

[Sarah Gregory] I just want to throw in here that the EID journal was spawned from that IOM report.

[David Morens] I sort of said it a minute ago, but it's worth repeating, that when the Institute of Medicine report came out, to many observers, it came out of the blue, and…but CDC was very energetic at responding to it by developing new programs, and having…making new initiatives going forward in a number of different directions, one of which is the EID journal, which has been, under Joe McDade, I think was the first editor, and you know it's been enormously influential and it's been a big…a big sort of crown jewel in CDC's efforts to go forward by

understanding that diseases are emerging and reemerging all the time, and these emergence/ resurgence events are a big part of what we have to do to respond to them.

[Rohit Chitale] Yeah, thanks for bringing up the history a little bit there. Especially as sort of, you know, the last thirty-seven years or so related to the changes, you know, with antimicrobial resistance and just generally, medical, you know, sort of the last thirty years have been really important years, and Mike was there, like you said, at the forefront. But, you know, one of the things I was going to mention is also his…Mike's interest in medical history. And you know, I used to sit next to him in the cube, and so, you know, it was easy for me to help him with his questions on IT or discuss various things with him…various, you know, minutiae, oftentimes important minutiae. But one of the…I just remember one of my memories also is related to sort of medical history and David you may have some, as well.

But one is when he gave me a book, and he said, "Ro, I want you to have this book." And I said, "Oh, thanks, what's the book?" And it was a book called *Genius on the Edge, the Double*—I'm trying to remember—*the Double Bizarre Life of William Stewart Halsted*. And as you probably know, David, well, William Stewart Halsted was one of the famous Johns Hopkins physicians. And I had gone to Hopkins for my doctorate and so he gave me a copy, as well as one to Ray and Scott. And I, because I was so impressed with Mike and so fond of him, I think I read it in a week. It was also a bit of a page turner. But what was really interesting was not only was it an easy read, but and you know, Mike had this, I think, membership in the Atlanta Medical History Society, I believe. And so, not only was it a page turner, but it was about my school, but it was also about this…the medical history in a very interesting way. Dr. William Stewart Halsted, who is kind of noted for being the…one of the discoverers of anesthesia, as well as aseptic techniques. And anesthesia of course, as we know, you know, cocaine and the "-caines," sort of relates to, so Halsted had this double bizarre life where on one…six months a year, he was doing amazing surgeries with great outcomes at Johns Hopkins Hospital. And the other six months a year he's in one of the Carolinas, completely sequestered, and most likely using cocaine, you know, on a very regular basis.

So, fascinating story, which then relates to kind of the Robert Louis Stevenson hypothesis that Mike had, you know, that Robert Louis Stevenson, you know, had catarrh and had a lot of physical ailments during his life, and basically was a very regular user of cocaine and probably died from cocaine. So I remember that, when he gave a talk, in one of his talks at CDC. So that was one of my special memories of him. Did you get involved in any of his history-related activities?

[David Morens] Well, yeah, I mean I think one of the things that bound Mike and I together after I left CDC in 1982, and of course Mike stayed on at CDC until the end of his life in 2015, but during that time, probably the thing that bound us together most was our shared interest in medical history. And at some point, maybe around twenty years ago, I wrote a paper, a history paper, that talked about the death of Robert Louis Stevenson, who actually almost certainly had tuberculosis and probably died of a pulmonary hemorrhage, but…and that really excited Mike. 'Course, Mike had written this thing about Robert Louis Stevenson's Dr. Jekyll and Mr. Hyde much before that time, but he…he kept realizing, you know, as we crossed each other's paths, mostly at meetings, sometimes at CDC, over the decades, we kept realizing that we had shared history interests, such as Robert Louis Stevenson.

Of course, you know, he wrote about Robert Louis Stevenson before he knew that I was going to do that, and I hadn't remembered or wasn't thinking about his paper on Robert Louis Stevenson, but I think…I think the thing is when you're a physician and you're interested in medical history, you keep covering the same territory again and again, but from a different angle, and we kept doing that. Many different times we'd meet and he'd ask me about something I had written and I asked him about something he'd written, and we'd just get going on all this medical history stuff. He loved it and I came to love it too. I never trained in it, but I just came to enjoy medical history, it's very…people have said this before, that the interest in medical history and the interest in epidemiology are, in some undescribed way, closely related. It's all about puzzle-fitting problem solving.

[Rohit Chitale] Yeah.

[Sarah Gregory] I want to interject in here also for listeners that several years ago Dr. Morens did an article in our special category called "Another Dimension" on Cotton Mathers and his family that died of measles, and he…in addition to the article he also did a podcast where he reads from that "Another Dimension" and it's very moving, so listeners should look for that on our podcast list also.

[David Morens] Yeah, thanks—thanks for reminding me of that, I'd sort of semi-forgotten that. But I have a lot of interest in medical history and there's a lot of great stories, some of them tragic and sad, like the story of Cotton Mather and his family, like the story of Robert Louis Stevenson, but, you know, if there's anybody listening who is interested in medical history, there's a lot out there, you'll find fascinating stories everywhere.

[Rohit Chitale] I was going to say, David, when you mentioned the Robert Louis Stevenson you know, that he did, the piece that he did and then that you did, did you and Mike talk about that? I mean, like you said, that sort of causes of death, you know, were different from him, to what had been established, I think, in history. But did you discuss that or did you ever have any disagreements with Mike?

[David Morens] We did discuss that, I don't think we had any disagreement about that; we did have a disagreement about something else, which I'll mention in a minute. But I think that you know, I mean, I think historians know how Robert Louis Stevenson died, and that's not to take away from Mike's paper about cocaine use, because the cocaine use in the…in Mike's paper was relating to the writing of Dr. Jekyll and Mr. Hyde, which was many years before his death. And you know, like all adults in that era who had tuberculosis, Robert Louis Stevenson probably had it for many years, and eventually died in the country of Samoa. And by the way, I have visited Robert Louis Stevenson's grave on top of the highest mountain in Samoa—it's a wonderful place, a beautiful place, and that's where he asked to be buried, with his famous poem "Requiem" carved on his sarcophagus. But anyways, so we didn't disagree about that, Mike and I did not disagree about how Robert Louis Stevenson died, we both appreciated each other's work and enjoyed each other's work.

But we did have a disagreement the one time we published a historical paper together, which was on the subject of the great epidemiologist Charles Nicolle, who worked in the Pasteur Institute in Tunisia and who elucidated the mechanism of spread of typhus. And I…it's…I think what happened is Mike and I met at a meeting, and he told me he was writing, this was a photo quiz, the one that Sarah mentioned earlier, it was to be a photo quiz, and he was telling me he was

planning to write it. And I mentioned to him something that he apparently had not known, which was that Charles Nicolle may have been the first person to actually isolate, using the term *isolate* to describe something that was different back in those days, but isolate the 1918 virus, according…the 1918 pandemic influenza virus, according to how they defined isolation at the time. And Mike was fascinated by that, because here was one of his heroes who had done something heroic, or important at least, that was, you know, totally different from the work that he's known for nowadays. So he asked me to join him as an author on the paper, on the photo quiz paper, which I did, and we were exchanging manuscripts back and forth, and you know, we…he would add something and I would add something and edit and whatever, you know it goes back and forth with scientists who are writing papers. And at one point I thought that there wasn't enough about Nicolle's probable isolation of the 1918 virus, and so I beefed up that paragraph a little bit, and he was not happy with it, and he let me know firm, in a friendly, collegial way, as always, he was a gentleman, but very firmly that this was not a paper about influenza, this was a paper about Nicolle's most important work, and it needed to stay that way.

[Sarah Gregory] Mmmm.

[David Morens] So, I was quiet after that, he got his way and he's probably right. Another anecdote is…relates to a phone conversation we were having, probably I'm going to say around 2010, me and, you know, here in the Washington DC area at NIH, and Mike in Atlanta, and it was about a quotation of Pasteur. And he was saying to me something about he had just helped a friend write a manuscript in which the friend wanted to quote a saying of Pasteur's, that chance favors the prepared mind. He said it—I don't know if he said it in French or in English—but I immediately said on the phone, "Well of course, that's not what Pasteur actually said." And the reason I said that, 'cause I had actually read Pasteur's words in French, and I knew exactly what they were at the time, I don't remember it now, but I knew that the quotation, "Chance favors the prepared mind," is not a literal translation of what Pasteur said. So I mentioned that to Mike and he was absolutely mortified. Here he had, in theory, what he was thinking is, here he had given his friend the quotation and verified that it was correct, and the friend was publishing it in a paper, and it was too late to change the manuscript to, you know, to change how it was going to be and was published.

So, mortified, he asked me to go back and give him evidence and things like that, and I realized I'd stepped on a minefield, so I went back to the original Pasteur paper from, I think 1870, or something, it was a long time ago, and I thought about a number of different translations of the actual words in French and I decided that "Chance favors the prepared mind" was a paraphrase, a good paraphrasing of it, and let's just leave it like that, so I assured him that it was okay to say that, it wasn't a literal translation, but translators fake these kind of things all the time, and a paraphrasing-type translation that contains the sense of what Pasteur meant, rather than the exact words is probably fine. And he was so relieved at that. And the relief, and I tell that story only because the endearing thing about that is Mike, because of what I'd said, Mike worried that he had brought harm to a friend of his, and that was just a terrible thought for him. And I realized that it was a terrible thought for him, and so I had to make sure that I, despite what had popped out of my mouth, I had to make sure that I let him know that what he did was good for his friend, not a bad thing.

[Sarah Gregory] Mmmm.

[Rohit Chitale] Yeah, well, so that's interesting. I know it's in the paper but I…about your little, mild disagreement, but you know, Mike and I had disagreements every day. And it was…

[David Morens] Really?

[Rohit Chitale] Yeah, yeah. And…but they were disagree…they weren't controversial, they were very collegial. So you know, what we did, in a very operational manner, was we put together this GDD Operations Center daily report, every day, Monday through Friday, and published it by five or six. So we were writing things together every day, which was really exciting. And there were events like dengue or H1N1 or nodding syndrome, which was one specific disease that he and I…

[David Morens] Right.

[Rohit Chitale] …had gotten involved with investigating a bit. And the daily report, you know, was the culmination of the day's work, five or six events put together by the team. And it was an internal CDC report, but what was really interesting is, you know, we would sometimes push to get it out, cause it's five or six pm, we'd had a long day. And he, he wouldn't have it. He's like, we need to be exactly right on the disease names, on the spellings, on the epidemiologic terms, is it, you know, is it imported, is it autochthonous, you know, all of those specifics of grammar. And it was really…and, you know, and he really focused, and some of the analysts didn't always appreciate that. But I sort of enjoyed his, really, attention…his attention to detail and the fact that it was really important to get it right.

[David Morens] So I was going to say, among other things, that harks back to the era that Mike and I were at CDC, and the influence of the MMWR, then edited by Mike Gregg, and the managing editor, Frances Porcher, and they were absolute hawks in the same manner. If you wrote a three sentence MMWR paper it would go through twenty edits and it would come back from Frances and her team and Mike with red ink spilled all over it, everything had to be perfect, everything had to be researched, every comma, every semicolon had an argument around it, and it was just…that was the way it was. You had to be perfect in what you said, and perfect in using the English language and moreover, because, even back forty, fifty years ago, everybody realized that the MMWR was read by people who, some of whom had English as a second language. Everything had to be completely understandable by people who had a limited use of…limited knowledge of the English language. So I think Mike got that, at least in part, as I did get it, from the experience of being at CDC at a time when perfection in communication was considered essential for every scientist.

[Rohit Chitale] Yeah, and it's a little different than MMWR, we were writing for a scientific audience, and so we wanted to be up to snuff in every different disease area, like whether it was bacterial, special pathogens, or viral, you know, or vectorborne diseases. So I just remember, you know, each event was like a case conference, you know, we would discuss it and make sure it was correct, and make sure we, you know, we reflected the right, you know, suspected, probable, all the right ways of describing, you know, the event. It was a real joy. And he actually, in the end, was just kind of like, all right, I'm going, you know, you've voted me down, so all right, I'm just going to go with the consensus. So, it was a really, really good sort of didactic, you know, discourse and that really…what's interesting, it had almost a secondary or latent effect and it actually helped us be better, you know, helped the team to be better. Even though we knew it was an internal report and it was like, "Oh, it's not going to get published anywhere," but we

wanted, you know, he strove for excellence, and it pushed us all, which was really wonderful. And that's one of my memories of that…

[David Morens] Ro, if you're willing, I'd like to ask you a little bit about what Mike was like as a human being, as a guy to work with, and his impact on others around him. You said a little bit about that, and I've thought a lot about it, too, but tell me more about how you—how he struck you, what kind of a guy was he for listeners who never knew him? You know, how did he come across with his colleagues, what was his demeanor, his way of interacting with other people, with other scientists and the public and people in the developing world?

[Rohit Chitale] I, you know, so again… I think you and I knew him in a yin and yang situation, or at least two parts of his life, in that I saw him a little different, in that he…first of all, I saw him when, quite honestly, his religion played a larger part in his life. So Judaism, and specifically Orthodox Judaism, played a larger part in his life than when he was younger, when he was, I think, either orthodox or conservative. So that actually really had a lot of sort of knock-on effects on things like, you know, his behavior, his diet, and other activities. He was, in my mind, just an absolute mensch, you know, to use that term. He wrote…he was an Amahlubi, right—he wrote that word. I think what was amazing about Mike was he really cared about excellence, but he also…he was a very agreeable, I mean in the sense that he wanted everybody to work together. And I know that we said he was kind of shy and in the background but in reality, when he felt very strongly, and you know this well, when he felt strongly about something, he spoke up, and he definitely voiced his opinion in a very…in a very, you know, it wasn't a very push-it-down-your-throat manner, but he was, I mean, the word mensch really comes to mind, you know. And I think…the other thing that I think about a lot, because in some ways he was…you know, would have been older than my father…he was a very strong moral compass. And I think that is something that has struck me and when I look at Mike's picture and when I talk to Selma, I remember those attributes of Mike. You know, the moral compass and his…the ideals that he lived, you know, he really lived his values. And I think that's why he had such a strong impact on people, because he was always helpful, he was always smiling, he was always there, present and able to help, and he would never say no. He'd always want to be there.

[David Morens] Yeah. I think you said it well, he had a tremendous generosity of spirit, he was never seeking things for himself, accolades or awards, he was…he seemed to be happiest when he was helping others achieve their goals and their dreams. He was endlessly generous of his time, he genuinely took pleasure in the successes of others, and he was always there to help them. He was not in any way afraid to be in the background, he was just as happy to be in the background, letting other people shine, as he was to be in the forefront, if not more so. And you're right, I didn't see the religious side of him ever. I don't think I ever heard him make any reference to any religious or even spiritual thing. But in some ways he was a very spiritual person, in some ways that—I use the term in a secular sense, not in a religious sense—he had those values of just giving to others, serving others, as being the highest goal in life. He had, you know, as you said, one of the reasons he is so beloved—and I think the word "beloved" is really the right word—is because of his generosity to so many people in so many different situations over several generations and around the world. He was just a unique person in that respect.

[Rohit Chitale] Yeah, very well said David, I completely agree. We definitely miss him, you know, talking about him and writing the paper with you was a real pleasure, and so I want to thank you, you know, for that opportunity as well.

[David Morens] Well, same to you. Let's just…let me…there's one last thing I'd like to ask you, maybe putting you on the spot a little bit. But how do you think Mike would like to be remembered by us and by others?

[Rohit Chitale] Yeah, thank you, I think…yeah, that's a good question. I feel like we're, you know, as we like to say in science, we don't really—only God knows the truth—but I think we've come pretty close to it with how we remember him now. I would say that God and family first, and I say that because I saw a lot of that in my time with him, you know, over the eleven…the eight years that I knew him, you know the time in the operations center as well as afterwards, 'cause I stayed in touch with him and the family afterwards and I still am, as you are as well. So I think those two, he'd put those first. I just remember every day at five o'clock he called Selma and asked "Alright, boss, when do you want me home?" And that was what…and then he would tell me, he would report to me "Alright, Ro, I got another thirty minutes," "Alright, Ro, I got an hour."

And so those two were the most…he was very proud of his family and his grandkids, and then really, and then work. He was really a forerunner in many fields—tropical medicine, parasitic diseases, One Health, we've talked about them—and I would say those are the most important things that he would want to be remembered for. And then lastly, kind of what you said, which is how…the impact that he had on people, and you know, the piece that was…the comments written in CDC Connects after his death, how everybody just outpoured, you know, love and joy and so many similar…similar comments. And so that's what I…I think that…I think that we've come pretty close to what he would've wanted. That's my feeling.

[David Morens] Yeah, great, thank you. I'll just add this, if I can, that I…you know, I don't know what he would have said, that if he…how he would have wished to be remembered, but I can speculate and I'd like to speculate by quoting something that I'd said to somebody else, not to do with Mike, but I think Mike would have said the same thing. And this was about fifteen years ago, an ex-EIS officer…now ex-EIS officer…named Roger Bernier, asked me this question one time. We were talking about heavy life issues and so on, and he said…he said…we were standing in a hallway, and he said, "David, tell me, if you could be at your own funeral listening to all the people standing around the casket, saying the things that whatever they were saying, what would you like them to be saying, what would you like to hear?" And I think…the answer I gave Roger is, I think, what Mike would have said, which is something like this: "Going out, he left the world a little bit better place than he found it coming in."

[Rohit Chitale] Mmm, mmm. Yeah. Well said.

[Sarah Gregory] Very nice. Well on that note, I thank you both for taking this time to talk to me, to remember Dr. Schultz, and thank you listeners, for joining us. You can read the full July 2019 article, "In Memoriam: Myron Gilbert Schultz, 1935–2016" online at cdc.gov/eid.

I'm Sarah Gregory for *Emerging Infectious Diseases.*

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