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Beginning of Interview

Charlton Prather: Let's tell our viewers that today we have Mr. Dwight Frazier from Miami: longtime director of the public health laboratory there, and a longtime employee of the Florida Public Health laboratory system. Who, among his accomplishments that I hope he's going to talk about today, is a number of laboratory firsts for Florida. It's truly a pleasure, Mr. Frazier, to have you here today. And I'm just excited about you're being here. Tell us, how did you ever get interested in public health laboratory work?

Dwight Frazier: My initial interest was by the professor at the University of Florida from whom I learned microbiology. He informed me of the fact that the State Board of Health was lookin' for employees in Jacksonville and suggested I go over for an interview just prior to my graduation. So I went over and was interviewed by Dr. [Albert V.] Hardy and at that time, he was working on this master's program—

CP: Forgive me, Dwight, who is Dr. Hardy?

DF: Dr. Hardy was director of the Bureau of Laboratories at that time.

CP: Oh, okay. Thank you.

DF: And he had this—I guess—it was really a dream to staff up the laboratories in the laboratory systems of the Florida State Board of Health with qualified individuals. And in order to do this, he had put together a cooperative program with the University of Florida, whereby people would be employed by the laboratory in Jacksonville, and in a two-year program they could get their master's degree.

These were people who already had a bachelor's. And so, at that time, it looked like a wonderful opportunity and so I began my career with the master's program. And Dr. Hardy had fallen heir to a post-war laboratory system that was in considerable disarray and the people who had been heading up laboratories are scattered all over the world—

CP: And besides, this was immediately after the Second World War, too, was it not?

DF: That's right. He joined the laboratory service, I believe, in 1946. And this program was already underway when I was interviewed. The first cycle of people were in place then. And then there were three of us in that cycle. There were three in the first cycle and three in the second cycle. And Dr. Hardy's hope was that individuals would then go out from this master's program and head up the branch laboratories, if I'm not mistaken.

CP: How many did you have at that time?

DF: At that time there were five.

CP: Five.

DF: It wasn't possible to get everybody to stay. Some people went out to medical school, others went into private clinical laboratory businesses; but a number did stay. One of the most notable examples was Nathan Schneider, who happened to be in the first group, who later went on and obtained his PhD and was Dr. Hardy's successor as director of the bureau in Jacksonville. But what it was, really, was on the job training.

But the senior individuals at the laboratory had appointments by the University of Florida. And so they taught courses in Jacksonville, except we did have to go to Gainesville for one semester in-residence within the two years. But other than that, all of the study was done in Jacksonville.

CP: Who were some of the chief laboratory—who are the—who are the folks in Jacksonville, name some names for us. Were they teachers in Jacksonville at the laboratories? Dr. Hardy, of course, but who others?

DF: Well Dr. Hardy, I believe Minnie Schreiber was one; Carolyn Ross. There was another PhD; I don't remember his name.

CP: It's okay.

DF: But that's all the senior personnel.

CP: Yes.

DF: And it was a very good program. We had to articulate through every section of the laboratory and learn how to do every job that existed at that time in all the various sections.

CP: That sounds like a super training program.

DF: It was. It was excellent. And the fact that he was able to retain a number of the individuals who got the advanced degree, helped him in putting together a much stronger laboratory structure throughout the state. But this was true of Dr. Hardy and his vision for the laboratory field in Florida at the same time that he was working on this program and had it present in his laboratory. He was very involved in trying to put together a licensing of medical laboratory individuals in the state of Florida.

CP: Not only upgrading his own labs, but that of all Floridians.

DF: That's true, because at that time, anybody who had a desire to run a medical laboratory opened a medical laboratory that had no qualifications, no licensure, really—

CP: No quality control.

DF: No quality control. They never heard of quality control. Well, Dr. Hardy had these present in his own laboratory and he saw the need for this on a statewide basis. There was

much infighting with people who had laboratories as well as the medical profession who had ties to these individuals, and everybody felt threatened. But due to Dr. Hardy's perseverance and lots of hard work—was able to put together and, not only build up his own laboratory, but help build up the medical laboratory field in the state of Florida.

CP: What part did you play in that, Dwight?

DF: I was president of the Florida Society of Medical Technologists, which was an organization that had banded together to—really to lobby and try to put together some licensure program for the state. And we put together a monthly bulletin, a little paper that was sent out every month.

And interestingly enough, in some of those, why, Dr. Hardy and I had articles which gave our views on licensing and the need for enhancement of licensing in Florida. And so we used—actually used the organization to help us with the implementation of laboratory licensing in Florida.

CP: Who were the recipients of the newsletter—the paper?

DF: All members of the Florida Society of Medical Technologists [FSMT].

CP: Oh. What was the name of this paper?

DF: *The Electrolyte*.

CP: *Electrolyte*, I think that's useful.

DF: Well, this was a paper that was started in one of my tenures of presidency of the FSMT. Because with Dr. Hardy's support of the organization and licensure, why, many people in public health were members and were active on committees and worked hard through the years.

CP: Did the law ever get passed?

DF: Yes. The first law was passed [in] 1949 and then was updated in 1967. And then—since then, with Medicare and all of the Clinical Laboratory Improvement Act—the federal legislation has kind of supplanted a lot of the state law but we still have the law in place, and there's some requirements in Florida that are different from some of the federal requirements.

CP: It's my impression that the federal—original federal hearings were really modeled after Florida's law. Is that true?

DF: In many respects, they were. We, in turn, had modeled ours after California. California led the nation in establishing this. I made two trips to California to actually talk with public health and private laboratory and pathologists in trying to dovetail our state law in Florida with the one in California.

And so, these two states, having had the most experience in the country, had a lot of points that were emulated in the federal legislation.

CP: Good, good, good. Florida's laboratory system was beginning to come into its own as a leader of the nation.

DF: That's right. In fact, we grew up with CDC, the Centers for Disease Control and—

CP: Which really got started after the second—World War II, did it not?

DF: That's correct. And actually, many of our training programs in our initial licensure law were put on by individuals who were on the staff at CDC, who came down to Jacksonville and put on programs for us. So we always, in Florida, had very close alliance with the Centers for Disease Control.

CP: As a matter of fact, they've had personnel assigned to Florida, did they not?

DF: Yes. Yes. Especially STD [sexually transmitted diseases] and TB [tuberculosis]. But, we've had 'em in Florida always.

CP: I'm remembering a lady by the name of Galton—Galton—Galton? She was CDC for enteric infections[1] I think?

DF: Yes. And then she came and joined our staff in Jacksonville and was chief of microbiology prior to Minnie Schreiber, Mildred Yalton.

CP: Yes.

DF: Yes.

CP: Yes.

DF: Well, Doctor Hardy was a leader in enteric diseases worldwide.

CP: Oh, speak to that.

DF: He had been instrumental in many studies to develop better culture media for isolation of enteric microorganisms. And due to his alliances with the Armed Forces Epidemiology Board[2] and World Health [Organization] and various other national organizations, we had many studies where we would check on various techniques for the diagnosis of enteric diseases.

CP: You did that in your labs in Jacksonville?

DF: In Jacksonville. Yes.

CP: Okay.

DF: And this led in to one of my more interesting assignments, which was in 1951; when Dr. Hardy was called upon to try and determine what had caused something like 3,000 deaths in the Korean prisoner of war camps. And he was asked to go over and set up a laboratory and a study to try and determine what the problem was.

1Enteric infections refer to those affecting the intestines.

2Mr. Frazier is referring to the Armed Forces Epidemiological Board.

So, fortunately, I was asked to go and I accompanied him, people from CDC, from Louisiana State University, from the National Institute of Health, and from the Walter Reed [Army Institute of] Research.

And a wide range of national organizations met in Korea and set up a laboratory on this little island that was outside of Pusan[3], where we had at one time, 130,000 prisoners of war. And we determined, in a summer over there, of putting together laboratories in tents and Quonset huts and—actually a landing craft—that we had three enteric infections going simultaneously, amoebiasis—amoebiasis, shigellosis, and salmonellosis.

CP: Really? Which one do you think was causing the mortality, for my curiosity?

DF: *Shigella*[4].

CP: *Shigella*.

DF: It was the most prominent one. It was interesting with the *Salmonella*, the particular type that was present there was causing perforation of the ilium.

CP: Oh really? Do you remember the name? The serotype[5], just for the records.

DF: It was typhimurium[6].

CP: Typhimurium.

DF: And it had to—it had to have surgical intervention in a number of those cases.

CP: Did you have surgeons on your team?

3It is possible Mr. Frazier is referring to Geoje Island (*Geojedo*).

4Shigella is a genus of Gram-negative, facultative, anaerobic, nonspore-forming, nonmotile bacteria closely related to Salmonella.

5Serotype refers to the variation of the specific species or subspecies of an infectious organism and plays an essential role in its identification.

6*Salmonella enterica* subspecies Typhimerium.

DF: Yes. We had surgeons, parasitologists, epidemiologists; Dr. Marion Brooke from the CDC was one of the parasitologists, and Dr. Fry from Louisiana was another. And we actually did proctoscopic[7] examinations right in the tents for the prisoners. We would do as many as a hundred a day.

CP: You'd just walk from one cot to the next, huh?

DF: No, no, no, no.

CP: Oh, okay.

DF: The prisoners came in. We had a GI cot that had been bent into a V. The prisoner would come over and suspend himself over the top of that cot.

CP: And he got a proctoscope.

DF: And you'd throw the proctoscope like a lance. And amazingly, we had some individuals who were carried in, but they walked out because we had malingerers that would come in that were—

CP: Yeah I'm sure of that.

DF: —puttin' on a good show but the show was over once they'd had that proctoscopic exam. And it was very interesting to be able to go right directly from the proctoscope to the microscope and see solid fields of motile protozoans of the people who had amoebiasis.

CP: Really?

DF: But this was a very interesting trip. And then after—

CP: How long did you stay?

7Proctoscopy is a medical procedure in which a proctoscope (or rectoscope) is used to examine the anal cavity, rectum, and/or sigmoid colon.

DF: Three months, just a summer; summer vacation.

CP: That was pretty long, wasn't it?

DF: No.

CP: I think you mentioned to me once that you brought back some of that—some of that stuff?

DF: Well I wanted to get off of the plane on the way back from Korea. Dr. Hardy and I were coming up back together and had he not been along, I think I would have turned in somewhere, because I had diarrhea. So I brought back antibiot—shigellosis with me. But it was quickly treated after we got back. So it was—

CP: What were your duties there? What did you do?

DF: Microbiology.

CP: Oh, you did the—all right.

DF: Actually— And we had Korean prisoners as laboratory aids and also had Korean physicians. In addition to—(clears throat) pardon me—some naval physicians and some Army. And we had lots of good rapport with the Korean medical people there.

CP: Good. This North Korean or South Korean? Prisoners—?

DF: South—North Korean prisoners.

CP: Yeah, okay, but South Korean physicians—

DF: South Koreans ran the show—

CP: Yeah, okay.

DF: —up in the camp.

CP: Okay, uh huh. All right. That—what—I'm wanting to recall that you brought back a whole lot else, like—someone said millions of cultures for identification, that you kept the state laboratory system busy for years identifying all of those cultures.

DF: Well yes, we brought many back and took 'em to the laboratory in Tokyo and then we also sent a lot back to Jacksonville and then they studied them for quite some time.

CP: Who was studying in Tokyo?

DF: It was a medical laboratory—Army medical lab.

CP: Oh, Army, okay. Okay.

DF: 406th General—406th General lab [US Army 406th Medical General Laboratory].

CP: Well, what was the upshot of all of this program? What ultimately happened?

DF: Better sanitation, more care in food preparation, better water supplies. When we first went in, the latrines were 55-gallon drums—

CP: In the ground or on the ground?

DF: No, sittin' up above the ground on planks, with a plank across 'em. And you would sit on that and do your job. And then these drums were taken out periodically and dumped in to the water nearby. And people from the island would be out there in the water collecting seaweed and other products that they ate. But they had a great resistance to it.

CP: But you didn't?

DF: No, I didn't.

CP: But it took you three—

DF: But I didn't drink any of that water.

CP: It took you three months to get it, though. That speaks somethin'. You brought it—

DF: Well, and it was interesting: we had as many as 1,000 stool cultures a day going through that little laboratory. And we reached a point where we could look at the plates and tell what particular strain of *Shigella* was on it because we had seen the different strains so often we could recognize 'em.

But, anyhow, that was a short-term thing; it was very interesting. And after that I was sent to Miami to head up the Miami branch laboratory.

CP: How soon after you got back from Korea did you—?

DF: In 1952 I went to Miami. That was to let Doctor Schneider—

CP: Who was then "mister".

DF: Who was then mister, who had gone through the first cycle of the master's program —to permit him to go off to get a PhD.

CP: Oh really?

DF: And so—and in the Miami lab at that time, we were located on the ninth floor of the Dade County courthouse. (CP laughs) It was a very interesting place to have a laboratory.

CP: We've heard stories that the commissioners were officed on the tenth floor and that some mornings—on Monday mornings, when you were opening your stool specimens, they would get upset.

DF: That's right, because it seems that there was an odor carrying up the stairwell that was disturbing to our neighbors. But we had much better working relationships because the Dade County Health Department was also on the floor below us. And being in close proximity to the politicians—

CP: That had to be an advantage.

DF: —certainly helped—it certainly helped to work together. And the outstanding things we did during those days were milk and water and syphilis serology.[8]

CP: Outstanding in the sense of your major workload?

DF: Volume.

CP: Volume?

DF: Volume.

CP: What were you doing with milk?

DF: We used to do all of the milk testing. This was before [the Department of] Agriculture took over but then—all of cream, just regular milk, ice cream, all dairy products.

CP: What kind of testing were you doing?

DF: Well we had—see, milk is sold based upon the butterfat content and we would check and—they would label the content when it was marketed and we'd check to be—sure they were in truth, sellin' what they told—

8Serology is the scientific study of plasma serum and other bodily fluids.

CP: Oh, if it said, “2% butter fat”, you made sure it was at least 2% butterfat?

DF: That’s right. That’s right. And also we found out that some of ’em, in order to extend their supplies, like to put a water hose into the tanks; and so we had what we’d call cryoscopic determination, which was to determine the freezing point of milk, which is always standard on unadulterated milk. But milk that’s had water added to it, it changes the freezing point in the direction of the water.

And so you could nail people for watering supplies. And one of the most outstanding miscreants at that time was the son of one of the big diary owners, who was supplying milk to his father.

CP: Whoops.

DF: And so they had court cases and then—many (inaudible)— Another interesting aspect of that particular lab was the fact that all toxicology being done in Dade County was done by the chemist in that lab. This was prior to the medical examiner program in the state; it didn’t exist at that time. And we have— The biggest refrigerator we had in the laboratory was always full of body parts waiting for the case to go to court. (CP laughs)

And so we had to keep ’em until the case went to court. We didn’t necessarily trot into court with those, but the chemist spent as much time in court as he did making determination.

And also all drugs at that time—marijuana was identified with that—by that chemist. And any other drugs that happened to come along would have also analyzed in the state laboratory (inaudible).

CP: Yeah, was that limited to Miami? You would service just Miami in that case or Fort Lauderdale but not the state at large?

DF: No, just Miami.

CP: Okay.

DF: The laboratory remained in the courthouse until 1957. I left in 1955 and went into the private lab field for seven years. And then came back to the state laboratory system again in 1963. For some reason, the state lab seemed to always be my family. I'd always kept contact with them and it was always good to come back and get out of the helter-skelter of the private sector.

And so I returned to the state lab. And one of the most interesting things at that time was establishment of phenylketonuria testing, PKU testing. It's a metabolic fault that some newborns have, which can be corrected through dietary intervention. But which, if not corrected, can lead to some rather severe mental retardation.

And Dr. Carol Shear, who happened to be with the Mailman Center for Child Development in Miami, had developed this procedure. She didn't develop the procedure; it was a Dr. Guthrie who had developed the procedure for detecting this substance in blood samples that could be submitted on filter paper.

And the load that was coming into her lab had exceeded her capabilities, so she prevailed upon us to establish this procedure in the Miami branch lab. And we extended it to, ultimately, to Broward and Palm Beach Counties as well as Dade County.

CP: For all newborns?

DF: For all newborns.

CP: Was this voluntary? Was this voluntary?

DF: Voluntary.

CP: Okay. How many specimens were you getting on a volunteer basis? Did most pediatricians submit a specimen?

DF: No. But the number was increasing steadily. And it finally reached a point where the Jacksonville laboratory, which was our central laboratory, pulled the entire program into Jacksonville; and actually, this program served as the nucleus for the infant screening program developed there, where it was extended not only to PKU, but to thyroid and various other disorders.

CP: Maple syrup disease was one of the ones I can think of.

DF: Maple syrup disease (inaudible). And it developed into a very significant program.

CP: Wasn't there—wasn't there a law passed one time?

DF: There was a— A law was passed; that's why they required it.

CP: It required all newborns to be so tested.

DF: Yes. Yes. In fact, it's very interesting. I was talking to Dr. Shear last evening and—refreshing both of our memories on this program. And she was describing a 25-year-old lady she had been counseling in the last week, who had been originally found to be positive and had been on the diet until she was a preteen.

And then they—it was optional— The families, they could take the kids off of this diet. It was an added cost, and they took her off. But she was now college-age and just had all kinds of—

CP: Consequences.

DF: Yes. There were consequences and they had realized that she had been taken off this diet. So Dr. Shear put her back on it and within three days, this 25-year-old had reverted back to normal—

CP: Fascinating.

DF: —and was getting married and was in college.

CP: Fascinating.

DF: And so—it was just fascinating because I'd always thought that once they put a kid on this, it'd stay this way forever. But apparently some of them don't; they pull 'em off and so—

CP: But there's a few of 'em should not be pulled off, we just learned.

DF: Definitely, definitely. So Doctor Shear is still doing genetic counseling. And now, of course, a geneticist is—write their own ticket now.

CP: Yes, they do. Yes, they— Well that was a first coming out of the Miami lab. I have a sneaking suspicion there were some others.

DF: Yes, we managed a few others. In '66, I left 'em again—

CP: Oh no! The second time.

DF: —to go back into the private sector, this time to establish my own laboratory. And with two other people, we put together the first automated medical laboratory in Dade County. And by 1979, we had sold it— Twice, it had been sold to national organizations and had reached 190 employees, 24 hour—

CP: Wow.

DF: Twenty-four hours a day, seven-day a week operation, I was ready to go back to the restful environment of—

CP: That is sizable, 190 employees.

DF: Well, yes. I had 45 pickup courier vehicles. There was nothin' but headaches. So I was glad to go back to warm and cozy public health again. (CP laughs) And then just as —

CP: Back to the Miami lab.

DF: I got back to Miami lab in ’79. Just in time for an outbreak of penicillin-resistant *Neisseria gonorrhea* [PPNG]. And we had suspicions of the presence of this particular strain in most of our cases. But at that time, the technique for showing that it was present on a culture was just a real pain because it was a tube test. It was very tedious; it took several days.

And I happened to attend a medical meeting where a physician described the use of a quick technique to determine this type of organism; it was on a filter paper. And so I got a copy of the procedure, which had been published in 1977, and put it in place—very, very simple to produce. We figured it probably cost us about 7/10 of a cent per test to perform it with this particular technique.

And we had an instant epidemic in Dade County. Because the first day when we tested these strips against all of our isolations that day, we had an alarming rate of a PPNG presence, which we had been missing due to the (inaudible) test that we had in place.

CP: Did you question your test? Are you—did you the question results of your tests or did you—?

DF: No. We—

CP: Was it—?

DF: —we were always—they were always followed up with the appropriate biochemicals to determine it was in truth what we thought it was. And so it was a perfectly valid test. It—

CP: So the first day you put it online, you had an epidemic.

DF: We had an epidemic. And Florida managed to lead the country for several years in PPNG. And I think really it— Probably, some other states would have given us more of a run for our money had they been checking as intensely as we were and use this test. But at the same time that we put this test in place and people found out that the PPNG was so prevalent, many of the manufacturers came out with kits.

CP: Immediately?

DF: Immediately. And of course, these were more expensive but didn't require the skill to put together—the filter paper preparation—and so many people didn't use it. But it was printed up in MMWR [*Morbidity and Mortality Weekly Report*], and we made appearances at some of the national STD meetings and we established it statewide in Florida, the use of this particular procedure.

CP: What was the—what's the procedure called? Is that an unfair question?

DF: It's an iodometric procedure. It's the use of iodine and starch.

CP: Iodometric. I knew I shouldn't have asked.

DF: Yeah. No, it's simple, actually. It's a reaction between the iodine. If you dip a starched shirt in iodine solution, it'll turn blue. And this filter paper had the starch impregnated in it and some chemicals. And then we'd dip it in the iodine, and so this strip would come up very deep purple. And then you could just smear some organisms from a culture plate onto this, and within a minute, if you had a white color develop, you had PPNG.

CP: Wow!

DF: And so we could do fifteen, twenty tests on a strip of filter paper about two inches long.

CP: Wow!

DF: That's why I say they would be like .07% off.

CP: That was the beginning of the recognition of the problem. Whatever happened?

DF: Well, they found, by changing the antibiotics, they could overcome it. But other resistant organisms are constantly developing. We now have a resistant tuberculosis. And I fear we're going to have more and more resistance as antibiotics continue to be misused.

CP: I worry about that too.

DF: And then—

CP: Did you leave the state laboratory again now?

DF: No, no, no. I stayed out. And then in— When was Andrew? Ninety-four?

CP: Yes.

DF: Ninety-two, ’94?

CP: Ninety-two, ’92. Andrew was in ’92.

DF: Nineteen-ninety-two.

CP: Yes.

DF: We had our next unique test developed—wholly unique to us—in that, for years, we had been in Miami, clamoring for a more rapid water test in Florida, where we—

CP: For? Testing for what?

DF: For—testing for—

CP: Bacteria and chemicals?

DF: —bacteria in water.

CP: Okay.

DF: We have a test for coliform bacteria in water, which indicates that though the coliforms aren't necessarily disease-causers, it indicates—if they're present—that disease-causing organisms can be present. And the technique we used was— Again, it was a slow technique, and if you had to close down a plant because of bad samples and then had disruption of water supplies and all the public relations—

CP: (inaudible)

DF: —unhappiness emanate— And the lab was always to blame.

CP: Naturally, you're so slow.

DF: I've been so slow. So there was a new test that had become available that we had been wanting to put in place because we could give, in 24 hours, something that would make—take 48 to 72 hours to answer with a regular technique. And so in Miami, we had managed to get enough of this material to get all of our people trained in the use of the procedure. And we had a little bit of a supply available. And then Andrew came along and closed down water supplies in South Dade. And so fast turnaround was an absolute imperative.

CP: Yes, it was.

DF: And so at that point, the state got fully behind us and we got adequate supplies to do all of this water with this Colilert procedure[9]. And then the state has found that this was a good procedure to extend to all laboratories and has become more widely used in all the labs since then.

CP: Okay. So we got PKU—

DF: PPNG.

CP: That the state level stole from you. PPNG, they stole and moved—

DF: Well no, everybody copied us then. They did the same thing.

9Colilert, a test developed by IDEXX Laboratories, detects total coliforms a *E. coli* in water.

CP: Oh, oh really?

DF: We—we had all that we wanted with PPNG.

CP: Oh, okay. All right.

DF: But the water testing, they wouldn't listen. It's my contention that—through the years the most expensive thing we had—even though everybody was underpaid in the state laboratory system—but still, the most expensive thing in the laboratory is labor. And if you can get away from labor-intensive procedures—you may pay more for another procedure, but if you save lots of hours, you come out ahead. And so—

CP: You're really saving money.

DF: That's right. This was true of the Colilert—

CP: It didn't take a rocket scientist to figure that out.

DF: Well, takes time. And so we managed to get that in. And then not far behind the Colilert and Andrew, came AIDS.

CP: AIDS, you were there for AIDS?

DF: HIV. We were there for AIDS. And early on I got training at the CDC in the testing. Then we opened up to do AIDS testing as soon as the procedures were available—and this was an add-on procedure that—figured, probably take 5%, 10% of my time, but actually took probably 90% to 95% of my time because of the—all of the political aspects of the—

CP: AIDS.

DF: —PPNG—of—of—

CP: AIDS.

DF: —HIV. And it was always a hot potato. But—

CP: How did that affect you as laboratory director? I thought—would have thought the politics was—and the effect would have been in the clinic—or in the clinic directors and not the laboratory?

DF: No. Because we're the ones that gave the answer that said it was positive or negative, knowing full well that we're using a procedure that gave false positives and false negative results. It's built into the procedure. And so anytime you get an individual that has disparities somewhere along the line for some reason in a procedure, it was always the laboratory that's looked at.

CP: You're immediately questions. I can understand that. Did you find yourself in court? Or you find your—?

DF: Yes, I've been. In fact, we had a whole week for one court case. We managed to get on Court TV. But—

CP: I can see, you are not actually at the bench, but it was still preoccupying your time.

DF: Well, I spent time at the bench on every procedure we ever put in. I worked it out first before it was turned over to the individual. So I spent lots of times in the HIV testing.

CP: What's the—what's the upshot of that now? Where are you?

DF: Still going on. The procedures have been somewhat modified. There are new techniques. There are new tests that are in the laboratory now. And the treatment has changed. We're more involved in monitoring the care of the individuals now, with some of the values that are obtained in the laboratory.

CP: Through blood chemistry?

DF: Yes.

CP: What are you doing?

DF: Yes. Essentially it's immunological.

CP: Immunological stuff. Okay.

DF: Immunological stuff.

CP: And your lab is much involved with that, in individual direct patient care?

DF: They are through the health departments. Because the health departments have had to get more involved with patient care because there's always been a lack—backlog in patient care with HIV patients. And then Florida— Florida, here again, we're running number three in the country in the level of positive HIV or positive AIDS.

And within Florida, if you compare the two laboratories doing the test, which would be Jacksonville and Miami, Miami has always run at least twice the percentage positive of Jacksonville. Now Jacksonville is serving probably, oh, forty-five or fifty counties, and Miami is serving the rest, but Miami is serving the high incidence counties where we have the more high-risk people. And so we've always had much higher level of positivity.

CP: I'm wanting to recall that you were very much involved in pesticide surveillance?

DF: Yes, I've—

CP: You didn't—or am I wrong?

DF: No, at one point we did have a pesticide research laboratory, which was a branch of the Miami branch. We established a separate laboratory in another location and a very large amount of federal money was poured into trying to determine the levels of pesticides in humans. The difficulty being that all the humans we could find to test had already been subjected to pesticides, in one way and another.

And so it was very hard to find a non-pesticide-contaminated community of people to test. But we did a lot of work on the testing for pesticides though. I think one of the things I got the biggest kick out of was the Lanolin products. Now Lanolin, of course, is derived from sheep wool. And sheep are very religiously dipped every year, or maybe some are several times a year, in a vat of pesticides to keep some of the little creepy crawly varmints off of them.

And so, whoever has the highest level of lanin—lanolin in her make-up is getting the highest level of pesticides in her lipstick and on her cheeks and so forth, because no lanolin is pesticide-free.

CP: I didn't know that. Are you trying to scare us?

DF: No. This was a fact. We actually went back to the purest product we could find and found pesticides in it. But this was true. And the studies were very interesting. We were tied in to the medical examiner's [M.E.'s] office in Miami and fortunately we had gotten it out of the state laboratory system and into the M.E.'s office.

And Miami had— Dr. Joe Davis is one of the outstanding medical examiners in the United States. And we would get a little snip of tissue from every body that went through the M.E.'s office to test for the load of pesticides in them. And so there were many, many papers written during that time on all types of pesticides.

Parathion was in those days being used very heavily in many of the farms around Dade County and it is lethal to people that are exposed to it when they're working with it. And they were supposed to be monitored constantly but were not. And so we were involved in monitoring those people. And then another unique thing that Miami lab got involved with in recent years was hantavirus.

CP: Hantavirus.

DF: Hantavirus was a virus that—

CP: Okay, speak to that.

DF: —started out as far as the big notoriety in Florida, as the four corners out in Mexico and Arizona and killed a number of people. And then we popped up in one case in South Dade—

CP: Natch! [Naturally!] Of all the places it could have popped up, it was in your area.

DF: And it probably had some bearing on the aftermath of Andrew once again, because the tremendous damage in South Dade left building-high piles of trash, some of which stayed there for years afterwards, that you just couldn't get rid of. And so rats and mice multiplied everywhere and we never could come up with a good level in individual—in humans, other than the one man who had a confirmed case.

But we looked at several thousand rats and did find antibodies in some of them; so we kind of feel that, probably, this is something that has been there for many years.

CP: Oh. You just messed up the ecology.

DF: Just, yeah, and—

CP: Or Andrew messed up the ecology.

DF: It doesn't seem to be a problem—but this—this, in looking back— I remember in the fifties when we had the laboratory in the courthouse; at that time we were concerned with typhus and as a consequence there was a rat-catching—

CP: Program.

DF: —drive on all ships in and around the ports in Tampa and in Miami. And I remember bags of rats being bought—brought up to the laboratory (CP laughs) to dissect and test for typhus. And here we come in the sixties—in the nineties: bags of rats coming in the laboratory to test for another organism that's—

CP: Hantavirus.

DF: —vastly different.

CP: How much typhus did you find in the fifties? Did you find much?

DF: Very little, very, very little.

CP: Very little? Did you have any human cases?

DF: Not that I know of.

CP: Okay. Interesting. I'm getting a strong feeling that the laboratory's kind of on the cutting edge of all things epidemiology or disease outbreak slash disease control.

DF: Absolutely, and in fact, I think we're heading for more trouble, as I said earlier. I think that the—a lot of the emerging infectious diseases are going to be—probably some of them—reemerging, infectious diseases, where we've got organisms that have gotten sens—

CP: Resistance.

DF: —resistance to the antibiotics. Hospitals are full of 'em now. That's why ambulatory surgery is—

CP: The thing.

DF: —I think, very, very good if a person can do it because if you stay out of the hospital—and it's not the hospitals are being sloppier or anything, it's just the fact that the organisms that are enmeshed in the hospitals are drug-resistant. And when we lie in there among 'em in a debilitated state, we're more susceptible.

And so the antibiotics that we thought were going to save the world? They did a lot of good, but now it's catching up with us. We don't have enough left—antibiotics left to fall back on.

CP: We aren't developing new ones at a—at an increasing rate either, are you?

DF: No. So it’s very interesting.

CP: I want to jump you back to a comment you made very early: your professor at the University of Florida that suggested—

DF: William Carroll.

CP: Speak about him a moment, about William Carroll. What do you remember about Dr. Carroll?

DF: Oh, he was just a grand old gentleman. He was—

CP: And he was professor of microbiology.

DF: That’s right.

CP: University of Florida.

DF: That’s correct.

CP: And chair of the department?

DF: Yes. Yes.

CP: Yeah, okay. Okay. William Carroll.

DF: And he had gotten a word about the master’s program at Jacksonville and was the one that prevailed upon me to go over and—

CP: Try it out.

DF: —get under Dr. Hardy's wing. And Dr. Hardy actually was my mentor for the years he was there until 1957, even though I was in and out some of it. And I think one of the outstanding things that I had in my career was the fact that in 1966, I received the meritorious—

CP: That was '96, now, wasn't it?

DF: Nineteen ninety-six, that's right, the Meritorious Service Award. Dr. Hardy received it on September the thirtieth, 1966. And I—

CP: Really?

DF: Anything that I ever became in public health was due to this man, who was one of the most unassuming individuals who ever lived and who had just a phenomenal background, worldwide, in enteric diseases. And was just such an outstanding person to hide under the wing thereof.

CP: As a human being type? Yeah. As a human being?

DF: Absolutely. Absolutely.

CP: Yeah. Yeah. I appreciate your mentioning Dr. Carroll as a—as an important person in your career as well. In fact, Dr. Hardy—

DF: Well, I'd be getting off on a tangent with Dr. Carroll.

CP: Yeah, it would. (CP and DF laugh) Yeah. Yeah, it would. But I wanted, for the record, you to mention Dr. Carroll's name, because he was loved by many folks also.

DF: He was.

CP: And I do remember him, too. But we need his name on the record. Some of that—Oh, a lot of your publications—I'm wantin' to remember some microbiology you did on

the esophagus that was published, as I remember, in the *New England Journal of Medicine*.

DF: Yes, we did some very interesting studies where we were attempting to find out what the total microflora of the intestinals tract might be. And so we had a technique whereby an individual would swallow a little pellet attached to a string and then just let it progress on through the intestinal tract.

And it— No, it wasn't a string, it had a—it had a tube where we could aspirate and draw samples of specimens from all different levels going down through the stomach and going down through the intestines. And then we did a total bacterial flora that we could isolate and grow by culture in the laboratory at all of these various levels, trying to just get some sort of a notion.

This was not necessarily looking for people that had a known underlying problem; this was just general information to study the general microflora. Now I think we had it in the J of—J of—JAMA[10] and also the *New England Journal* [*of Medicine*]. This was in conjunction with Martin Kalser at the University of Miami School of Medicine.

CP: Yeah. In a nutshell, what did you find?

DF: Well, the body's loaded with bacteria. We can't live without them. And so it's a small wonder that we have screwed up these bodies with these antibiotics because the antibiotics are—will destroy any bacteria they happen to want to run across. And the co-mingling of bacteria that's normally in our gut are bothered by these antibiotics.

Another sidelight on some of the research that we did was an attempt to use *Lactobacillus*[11] as therapy for salmonella or shigella. And we tried to implant *Lactobacillus* in marmoset monkeys. They had these small monkeys that the professor at the university of Miami had a colony of fifteen or twenty different types of beautiful little animals. Very, very mean. (CP laughs)

But they were beautiful animals and they didn't like what we did to them. But we found a product produced in England that was a *Lactobacillus* product, where they had combined many different strains of *Lactobacilli* and among them had some that were resistant to

10*The Journal of the American Medical Association*

11*Lactobacillus* is a major part of the lactic acid bacteria group. It is found in humans in the vagina and intestinal tract.

some of the antibiotics. And we tried to implant these in these monkeys by feeding them this in their food.

But we were never terribly successful in coming up with anything because it had been published somewhere that someone had fed *Lactobacillus* to individuals that had salmonella and it had aborted the disease. But we never could prove anything really substantial with the monkeys.

End of tape one. Beginning of tape two.

CP: I want to recall that you were very involved in some otitis externa studies with the US Navy that were quite significant to the US Navy. Do you recall those?

DF: I think that was at Mayport, back in the early—

CP: Early fifties.

DF: Early fifties.

CP: That doesn't reflect my age, though.

DF: We found out that every summer, when the swimming pools would open at the Naval base at Mayport, that all of a sudden, all of the children would start having *Pseudomonas* infections in their ears. And this is when we found out that it traced back to the presence of organisms in these swimming pools. Or, actually, you could have individuals that could have *Pseudomonas* from their water supply.

Water, as we get it from the pipes, is not sterile. And certain organisms like a watery surrounding, *Pseudomonas* being among them. And so actually I think you could bathe in this water, but then when you go into the swimming pool and you get a lot of water soaking in that inner ear, maybe some of it gets trapped in there and get in the wax, and it'll cause the bacteria, that have perhaps gotten in there from the shower, to spring forth and blossom out and have a (inaudible)—

CP: Earache.

DF: —earache. I had forgotten about that.

CP: Yeah, I (inaudible). It doesn't reflect your age. I'm not suggesting that.

DF: That was way early on.

CP: I know it. There's another one, too, that you haven't mentioned that I want you to mention. Your polio surveillance around the polio oral vaccine trials in Miami, and you were actually involved in Tampa, too. But the ones in Miami are notable.

DF: Well, this too was interesting. I— We were involved in some of the first studies made on polio and the polio vaccine.

CP: Yes, you were.

DF: And so we had a virus isolation component in the Miami lab.

CP: Yes, you did.

DF: And one of the ways to follow the virus and some of its activity in the community was to take a Kotex pad, sterilize it—this was a new Kotex—sterilize it—it had a string attached to it, drop this down into a manhole, into a sewer line, and let this just wave around in the effluent down there for a period of time. Pull these out, drop it into a sterile plastic bag, take it into the laboratory, and then you could squeeze the material out of the pad into the bag.

And then take that material—it'd be liquid—centrifuge it, and culture it for viruses. And we could actually find the poliovirus. And we had been monitoring these sewers for quite some time. And polio had pretty well been brought under control and suddenly we had this upswing in isolations. And we thought, "The world's getting ready to come to an end."

But we didn't know that a live vaccine had become available—had been administered to a lot of children—and was then showing up in the sewage. So all it did was prove that our

technique was a very good technique. And we found that this was the polio that had been —

CP: It's not unique. But those—

DF: —entered into the system.

CP: Those were some very early studies in community surveillance of polio. You know, part of the design for that was to try to detect, at the earliest possible moment, a section of a town infected with polio. And you all were on the cutting edge of that, right?

DF: Yes. And you know, you know this makes me wonder about something else because our laboratory in Miami—the same was true in the Jacksonville lab, where they were isolating viruses; it's true in any virus laboratory anywhere—we always end up with the viruses looking for a home and a name.

CP: I knew it.

DF: We always would isolate something that we didn't know what on earth it was. But based upon our cultural findings, we had isolated a virus. And so you wonder how much this could be—some of these viruses that now are showing up, because— What's happened to our population is that we now have an immunocompromised population. Some of it's intentional; some of it's accidental.

Alcohol; people who drink heavily are immunocompromised. Individuals with HIV are immunocompromised. Many people undergoing therapy for cancer are immunocompromised. We have a myriad of immunocompromised people who are more susceptible to agents they may be exposed to.

CP: Other—other people would be resistant to.

DF: Other people (inaudible). Just like—we know that some individuals with HIV should not take showers. Why? Because, as I said earlier, water is not sterile. The water we drink. And you can get—inhaling—you can inhale material in a shower—

CP: We all get water up our nose.

DF: —it gets into the lungs. And so an immunocompromised person, some of this *Pseudomonas* could get in there and be lethal. We've found in studies in hospitals that a favorite place for *Pseudomonas* to get very wild is in drinking fountains. They are always wet; the temperature goes up and down on 'em. It should be cold all the time, but it isn't necessarily. So sometimes the bacteria that are present in the water can get an opportunity to multiply. And then it shows up in some individuals.

CP: Another area, if I can prompt you one more time. Miami, your laboratory, Dade County had the last big typhoid epidemic of the United States during your watch in the Miami laboratory. Along or about '68-'69ish—

DF: Well—

CP: —or were you in private practice then?

DF: I was in private practice then. I was lucky. I missed that.

CP: Oh. (laughs)

DF: Well, we—we have been having it in recent years too. Not a real epidemic, we've had more—

CP: (inaudible)

DF: —than we should have but we think that a lot of it is being brought in because, right now, it's not unlike what I brought from Korea, when I brought dysentery back from Korea. Why, individuals can come from the other side of the world into Miami or Tampa, and they were perfectly well when they left.

CP: And they bring their germs with them.

DF: But by the time we get—they get here, they're very, very sick. And so we have to be constantly on guard for some of these problems. Same with the *Cyclospora*[12] last year, again in Miami. And strawberries and raspberries from foreign—

CP: Mexico.

DF: —locations. I remember in Japan, I lived there at one time in the Army, and the use of the night soil to fertilize the rice patties. And you can go into Mexico, you could go at the Texas-Mexican border and you'll find that there are whole fields that are being fertilized. And now under NAFTA[13], with the large amount of—

CP: Produce coming across—

DF: —produce coming from Mexico; we don't know how that's being treated.

CP: No (inaudible).

DF: And in the other countries where they're coming in, the pesticides, we don't know how much pesticide is being used on a lot of these crops that we pick up from the store.

Another thing that we did at one time in Miami, and this was off the record, but it was a fun project. It had always concerned me to go into a chain store and be pushing the grocery cart along, and this was back twenty, twenty-five years ago. But the produce in those days, the lettuce, so many of the green things that weren't wrapped in any kind of—in anything—

CP: Nothing.

DF: They would be lying here. And I remember one chain that almost always would have a great big display of chickens over in the meat department, ten feet away from the lettuce. And you'd go over there and pick up one of these chickens, put it in a bag. And then the only thing you've got to wipe your hands on is the handle to the cart. And then you'd go over and pick up lettuce and then go in and then wonder why people had salmonella.

12*Cyclospora cayetanensis* is a microscopic, one-celled parasite that causes an intestinal infection called cyclosporiasis.

13NAFTA: North American Free Trade Agreement

CP: Yeah. Tell —(CP laughs) You might tell your viewers—give them a little more insight into why that bothers you.

DF: Well, *Salmonella* is very, very common in poultry and especially in pork. And so I prevailed upon a bunch of the meat markets to let me go back and sample the kegs. In some instances the shipment of chicken would come in to a big wooden barrel. That they'd put a layer of chicken, a layer of ice, chicken, ice, chicken, ice. All the way up 'till the barrel was full. Not wrapped in anything; the chickens weren't wrapped in anything.

And then when they were ready to put these on display, they just fished them out, shake the ice off and put them out in the display. Well, that barrel would be ankle deep in residue from all of those chickens. All I wanted was a little bit of that to test, and then to test what was dropping out of the chickens into the tray under the display area, and test that. And would not in any way give the people running the markets any problems.

CP: Yeah, you wouldn't report 'em—

DF: We were not going to fuss; this was just curiosity. Every place we sampled, we found *Salmonella*.

CP: I wouldn't be surprised.

DF: They were ever-present. But just the usual care that we have known since we're that high, we should do in the kitchen, we shouldn't be bothered with *Salmonella*. But now the chickens are even laying eggs with the *Salmonella* within the eggs that they'd lay. So they tell us, don't eat a three-minute poached egg. Do not eat Caesar salad with a raw egg in it. Just wonderful foods you can't eat now.

CP: It all comes to the laboratory. You all are ruining the way we do things.

DF: That's absolutely true and it's going to get worse because we're getting more and more artificial foods that are strictly chemicals to put in to bodies, that through the thousands and thousands of years have been taught to eat meat and off the—out of the soil, vegetables.

CP: Underground vegetables and above ground vegetables.

DF: Above ground, right. And now we're going to feed it artificial substances that the body doesn't know what on earth to do with; Olestra[14], for instance. Some of these things where we're assailing the body with materials that (inaudible).

CP: You're worried about that?

DF: —damage. I'm very worried about that.

CP: Let me ask your opinion. The studies you did on the intestinal flora was [sic] kind of pre-broad spectrum antibiotic days, what if we were to repeat that study today? Would you speculate a change in the flora?

DF: I would very, very definitely. Because one of the areas that I wish somebody would do a study on, and you can remember this from your days in the laboratory, that back in the fifties and the sixties, we did many, many vaginal, as well as urethral, smears for gonorrhea.

CP: Yes.

DF: And when you do the gram stain vaginal smear, you would see a normal flora. You'd see certain bacteria that you'd expected to see there. That they were just normal flora in the female vagina. You look at those smears now, that flora is totally different.

CP: Really? Fascinating!

DF: It's different. And I think that this would be true of the entire—

CP: Body system, huh?

DF: Yeah. Yeah.

14Olestra is a fat substitute that adds no fat, calories, or cholesterol to products.

CP: Fascinating, Dwight.

DF: The British, many years ago, cut back on the use of antibiotics in their animals, despite the mad cow disease, whatever the cause is. But here this is just asking for it: the type of product that had been used to feed animals, feeding them ground-up byproducts from other animals. And so this doesn't make a great deal of sense.

CP: That reminds me of another piece that I think you were involved with: the turtles. Salmonella load of turtles, which is the main—one of the main foods for turtles is ground up turtles.

DF: Right. Well, turtles and iguanas.

CP: Iguanas. Yes.

DF: And yesterday I was looking out the kitchen window at my house. And there's a great big telephone cable—one of those great big cables around the bottom between the lines. There was an anole—this is a big, green lizard that has come in from South, Central America—

CP: He's exotic to us.

DF: Thank you. And he was—that's his travel from one tree to another. Or he hopes that he's going to get a bird but he doesn't. But he goes from one to another. But those are probably loaded with *Salmonella*. Iguanas are just rampant. And people love these as pets. And we know that these turtles, they're bad news.

CP: You know—and I also think of pseudocosis. That after you went to Miami, you got head over heels in pseudocosis, did you not?

DF: Yes.

CP: Pseudocosis, tell us—you might, tell our viewers what pseudocosis is.

DF: Well, pseudocosis is a virus from—

CP: It’s not a virus. It’s a rickettsia—

DF: Rickettsia. You find it in parrots.

CP: —that causes a pulmonary disease.

DF: It causes pulmonary. We had some tourist spots in Miami that had great concentrations of parakeets and parrots and birds dying. And then some reports of pseudocosis in people. And so we’d go in and sample material from—

CP: The birds.

DF: —the birds in attempt to come up with some answers. And it was there; it definitely was there.

CP: And the Dade County Department of Health folks and others took samples from people, and you tested those too.

DF: And it was there too.

CP: It was there too. Yeah, yeah. These are— I’m seeing a pattern here: if it affects the human being in our modern day, Mr. Frazier, the laboratory’s a central part of that. And I want our viewers to recognize that you’ve been on the cutting edge of that. And you were on the cutting edge of that for a mighty long time in this state.

DF: Well, and we’re going to always have to be alert for these things. And now, it’s reaching a point where it’s almost impossible to be ready for everything that might come in because (CP laughs) the possibilities are just so, so—

CP: They’ve surely expanded since you’ve started.

DF: That’s right. That’s right.

I remember the VA hospital in Miami during the war, is the Biltmore Hotel, which is one of the finest hotels in Dade County now, and it was closed down and taken over by the Army during the war. And then for many years after the war, it sat there empty and the pigeons moved in.

CP: (CP laughs) Oh boy.

DF: And when they started cleaning it up, then they began to have some more of these—

CP: Funny little infections?

DF: —little infections among individuals being exposed to the residue lying in some of these rooms way up in the towers. And so some of these infections or potential infections are always present.

CP: That one's got a funny little name, do you know what I mean? It's coccidioidomycosis, *Coccidiomycoides* [*Coccidioides*][15]

DF: No. We didn't get any of that did we? (CP laughs)

CP: Not yet, but you did with your pigeons.

DF: Huh?

CP: You did with your pigeons, I bet.

DF: Oh yeah.

CP: Plus some other interesting— With fear of you hitting me, I want our viewers to know, too, that you were a part of the beginning of separating—your part of the laboratory effort—to separate the medical understanding between true tuberculosis and that funny little infection that began to be identified in the late fifties—it looked like

15Coccidioidomycosis, also known as valley fever, or California fever is a fungal infection caused by the parasite genus *Coccidioides.* It is widespread in the American Southwest and Mexico.

tuberculosis, but you couldn't get tuberculosis germs from—and you all called it atypical tuberculosis. Do you recall any of your work there?

DF: Yes. And there's still work to be done on that. It's my contention that since [Hurricane] Andrew, we're seeing an increase in these so-called atypical—I think they call them MOTTS now, don't they?

CP: Yes.

DF: Mycobacteria [Mycobacterium] Other Than TuberculosiS.

CP: Yes.

DF: And I even—a couple of years ago—took, zip code by zip code in Miami and looked at the total number of isolations of atypicals among people in all the hospitals in Dade and Broward Counties—especially Dade County because I was concerned with South Dade—and looking at the increase in these atypicals. Because Doctor Schneider and, I think, Dr. Hardy, early on in the studies they made of atypicals up in Jacksonville, found so many of them were soil related. You go into these different soils—

CP: And I recall that's true.

DF: —and you would find different organisms, depending upon the type of soil. They compared the clay soil, and then in Georgia there were some studies with, especially, the clay. And down in South Dade, we have the big piles of the trash. Some of it's still there from Andrew.

And then we have this, what we call "Mount Trashmore", which— One of the highest spots in South Florida is a dump that towers (CP laughs) over the terrain east of Homestead. And I think that Andrew managed to displace a goodly portion of it into the community.

CP: Oh boy.

DF: And I believe that there's been an increase in the atypicals. And I think a lot of it is among the gardeners. We have—

CP: Really? Fascinating observation!

DF: —thousands of thousands of individuals that are taking care of yards.

CP: Oh, oh, oh. Yes. That kind of gardener.

DF: Going from yard to yard. These tend to be people that don't have good healthcare to begin with. And I think that they're tramping around, inhaling a lot of this with some of these power mowers that just fill the air with this material. And I think that there's an increase in the atypicals. And so in these populations, it should be looked at.

CP: Fascinating observation. I didn't want you to overlook you played a significant role in the differential of—

DF: Well, this is so far back, I had forgotten these.

CP: Well, it's important—it's important to Florida's public health history. In that—that's only because of my long time admiration of you that I'm remembering those things, Dwight. I haven't been studying you preparatory to this occasion.

DF: Somebody has. (DF laughs) I had forgotten these.

CP: Now looking on to your—back over—the very long and really productive career that you had in the Florida laboratory system, both privately and publicly—let's— The three highlights of that career that you really think is—is—you were there. You know, "Man, that was worthwhile for having traveled this road", those three things.

DF: Well, I think that the Korean trip, the PPNG, and the HIV. When the first reports of the AIDS [virus] began to come out of the people in the west coast California in '81—'80 and '81. I said, "Boy, we've got to get involved in this because this is going to be a comer that just looked so interesting." And at that point I started pushing the people in Jacksonville to say, "Let's look into this."

And fortunately they sent me to CDC to get training. And then we did get involved. Though it's the first entity we've been involved with where there isn't a cure; a good, clear cure. Early identification of this is an imperative; it always has been. And more so now because now we've got drugs where we can make this—

CP: Make a difference.

DF: —no different than diabetes, heart disease, many things that we can live with. As long as it's identified early and taken care of. But, this business of saying, "No siree, I'm not gonna' be tested." It's foolish because the earlier people are tested, the greater the opportunity they're going to live a full life with this.

CP: Drugs available.

DF: It's going to change.

CP: It must. It must.

DF: Trust me.

CP: Good. That's the three highlights. And those were good ones. I appreciated those. Give me two lowlights. What were the lowest points of your career? And you can be totally honest. The principles will never watch because they aren't here. They aren't here to watch.

DF: I don't know that I ever had any real low— I have thoroughly enjoyed my career, I really did. All the way through the—

CP: Good.

DF: I mean there were highs and lows, of course; but I enjoyed it. There was always a challenge. There's always been a challenge and there's going to be challenges. There's no dearth of challenges in this career. And right now, people are looking at Mars and what's going to happen. Why are we (dumped?) there?

I look back at the beginning of our space age and then look at the laboratory and I'll say, "That's what happened." Because the miniaturization that came out the space age has been able to put us on the map, in the laboratory, with types of equipment that were unbelievable.

CP: Really? I hadn't heard that comparison.

DF: There's (inaudible). And then this new stuff that these people have put together up there, that's going to be miniaturized even more. And we'll probably be able to put them together off the shelf. So we have gained every time we've gone into this stuff because—And then AIDS, honestly, the things that have been learned about the immune system, nothing has ever been studied the way AIDS has been studied—HIV—

CP: But the spin-off of our knowledge has been astronomical.

DF: Absolutely. And then this gene that—

CP: The genetic—

DF: What is happening with genetics testing and everything. This is opening up another whole broad field. There's going to be absolutely more fun than a barrel of monkeys.

CP: And all of those are laboratory based.

DF: That's right. That's right.

CP: Every bit of that is laboratory-based.

DF: Every bit, every bit.

CP: I think you're trying to encourage us young people to go into laboratory work—

DF: Absolutely. Absolutely.

CP: —as a career.

DF: It's the way to go. It has always been fun, it always will be, because those little old bugs don't have anything to do 24 hours a day but sit there, figuring out a way to outsmart us. (CP laughs) And they've been doing it for an awful long time. And we've got to get smart enough again to outsmart them a little bit. (CP and DF laugh)

CP: Well, have I missed anything, Mr. Frazier?

DF: I don't think so.

CP: Or have you missed anything?

DF: Probably.

CP: I would note for the record that you have brought to us a number of reprints, a number of original articles of your publications—which are a long list of publications. You've provided us a copy of the Florida Public Health Association's narrative account of their selecting you for their Meritorious Service Award last year.

You didn't mention that, except tangentially, but I'd want our readers to know that you are an honoree of your peers—the Florida Public Health Association—for your outstanding longtime work for the public's health in this state. And you're leaving us a copy of that.

DF: And I'd like to interrupt here and say that I still say that I would not have had that had not my mentor, Albert Hardy, been my mentor. And he too—

CP: I noticed that you have both Dr. Hardy's and yours.

DF: —received this in 1966.

CP: Yes.

DF: And I think it’s just an honor to have received it in the tracks of such a man as Dr. Hardy because he was a fantastic person.

CP: That’s nice, nice testimonies of Dr. Hardy. We all loved Dr. Hardy.

DF: We did.

CP: Yes, we—yes, we did. Well, Mr. Frazier, on behalf of the School of Public Health and the University of South Florida, we’re complimented that you would take time today to come and share with us your career.

DF: It was a pleasure.

CP: And we thank you.

DF: Thank you.

CP: And I’m Skeeter Prather.

End of Interview