ORAL HISTORY INTERVIEW WITH JOSEPH MOORE
Duke University Libraries and Archives
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COLLECTION SUMMARY

This collection features an oral history Joe conducted with Joseph Moore on November 6th and 9th, 2020. The 1:12:54 and 1:12:05-minute interviews were conducted in Durham*. Our conversation explored the advent of the specialization of hematologic oncology, Moore's early experiences that inspired his interest in medicine as a career, changes in Duke's facilities and programs over his tenure, and developments in cancer treatment. The themes of these interviews include medical training, the history of Duke Medical Center, and hematologic oncology.

This document contains the following:

- Short biography of interviewee (pg. 2)
- Timecoded topic log of the interview recordings (pg. 3-4)
- Transcript of the interviews (pg. 5-35)

The materials we are submitting also include the following separate files:

- Audio files of the interview*
    - Stereo .WAV file of the original interview audio
    - Mono .MP3 mixdown of the original interview audio for access purposes
- Photograph of the interviewee
- Scan of a signed consent form

*Due to COVID-19 social distancing protocols and best practices, Joe recorded the interview remotely via the Zoom web platform. At the end of the interview recording, we recorded a self-introduction and room tone for use in a production edit of the interview.

BIOGRAPHY

Oncologist Joseph Odell Moore has worked within the Duke University Medical Center system for 45 years, first as an internal medicine fellow and finally as Professor of Medicine in the Department of Medicine. As a specialist in hematologic malignancies, he focuses on the understanding and treatment of cancers such as leukemia and lymphoma. His many achievements include advancing clinical research on myeloid leukemias and serving as a founding board member of the Jimmy V Foundation for Cancer Research.

Moore grew up in a small town in Georgia. Medicine first piqued his interest in high school when he had the chance to observe a physician at work. The patient was Moore himself, who needed medical attention after a football injury. After earning his MD at Johns Hopkins University, Moore spent two years in Hawaii employed by the National Institutes of Health as part of the Japan-Hawaii Cancer Program. He first came to Duke as a fellow in 1977.

Early on in his time at Duke, Moore helped conduct clinical hematology and oncology research in conjunction with the Southeast Cancer Study Group and saw a wide variety of cancer patients in the Duke South clinic. “You really still did almost everything,” he says of his experience in the late 1970s. “Someone had lung cancer, you treated lung cancer. Someone who had breast cancer, you treated breast cancer.” Moore said that the Medical Center facility itself felt “small” and “intimate.” “if you were in a workroom, you literally fell over everyone,” he laughed. The upside of cramped quarters was camaraderie and cooperation across specialties.

As cancer research advanced and treatments improved, Moore saw the structure of cancer care change, moving toward more targeted forms of specialized care. With these changes, Moore found the opportunity to focus his expertise on the diseases that most interested him. “Gradually over time it ratcheted down to mainly blood cancers,” he said. “I know it sounds odd that leukemias and blood cancers are my first loves, but they are.” Behind his love for treating and researching these diseases was a love for seeing patients benefit. “These were all diseases that you could fairly rapidly see what you had done,” he said. “The menu of things that we could do slowly expanded over time, and then has taken a quantum leap in the last 20 years or so … And so you could sort of incrementally see the evolution, in a positive way, of what we had done, that included lymphomas, that included Hodgkin's Disease, a whole variety of cancers of the blood and blood and obviously of the immune system.”

INTERVIEW TOPIC LOG (joseph-moore-interview1-audio.wav)

00:00 Introductions
01:17 Overview of changes in career focus
03:50 Changes in cancer treatment
06:00 Upbringing in Rochelle, Georgia; undergraduate years at Emory University; experience with physician after sports injury
12:39 Hospital and medical center in Fitzgerald, Georgia
14:07 "Invasion of the body" trope regarding queasiness of medical students during early training; thoughts on training students on the "orchestra" of medicine
18:22 Admittance to Johns Hopkins; differences between Atlanta and Baltimore
24:30 Memories of early mentors W. Barry Wood, Victor McKusick, and Philip Tumulty
30:34 Learning physical diagnosis and differential diagnosis techniques
32:50 Working in general medicine wards in Baltimore and cancer ward at Baltimore City Hospital
35:31 Work with the Japan-Hawaii Cancer Program funded by the National Institutes of Health
41:31 Early treatment of Hodgkin's disease with nitrogen mustard; development of multiagent chemotherapy program MOPP
43:30 History of research and treatment of children with cancer; ethical considerations of pediatric oncology
48:14 Teaching students how to guide patients through risks and benefits of treatment programs
50:30 Initial impressions of Duke; admittance to Duke
56:17 Memories of Duke South hospital and advent of Duke North; initial layout of wards and clinics
01:01:42 Interactions with colleagues in early years
01:03:02 Memorable patient relationships; plans for second interview

INTERVIEW TOPIC LOG (joseph-moore-interview2-audio.wav)

00:00 First day at Duke and memories of Dr. Rundles and Dr. Ross
03:52 Fellowship experiences at VA and Duke wards; initial position on faculty; work with Southeastern Cancer Study Group
10:09 Early years as faculty member and types of responsibilities in patient care and research
15:12 Layout of Duke medical buildings, VA Hospital, and Mudd Library
17:57 Treatment of cancers as faculty member
19:26 Development of treatment of leukemia and lymphoma; memories of patient with chronic myeloid leukemia; advent of stem cell and bone marrow transplants; work with IRIS study and imatinib
31:04 Cancer and Acute Leukemia Group B membership; major figures in the history of clinical research at Duke
37:16 Evolution of division to Hematologic Malignancies and Cell Therapy

39:42 Division of Internal Medicine; support of clinical medicine at Duke; description of regional referral network
48:24 Lingo and terminology specific to specialty and medicines used
51:08 Changes to knowledge base with advent of smart phones; impact of electronic medical records systems; importance of collegial relationships
58:53 Treatment of Jim Valvano and establishment of V Foundation for Cancer Research

TRANSCRIPTION (joseph-moore-interview1-audio.wav)

Joseph O'Connell 00:01
And the tape is rolling, so to speak. It is, pardon me, let me find my document here. Okay, it is November 6th 2020. My name is Joe O'Connell. And I'm interviewing Dr. Joseph Moore, who is a Professor of Medicine at the Duke University Medical Center. And we're doing the interview remotely today because of the coronavirus pandemic. And this is part of a project for the Duke University Medical Center Archives and the Department of Medicine. And it's one in a series of oral histories with Department of Medicine, senior and emeritus faculty. So thank you for being part of the project, Dr. Joseph.

Joseph Moore 00:57
It's my pleasure.

JO 01:00
And I know that you're a hematologic oncologist. Is that how you would describe your work? How do you usually explain what you do to somebody who's not a specialist?

JM 01:17
Right. In my last several years, I have seen primarily cancers of the blood and bone marrow, and that really is a hematologic malignancy physician. When I first began, I saw my first patients as a house officer, you know, with cancers, and into the first several years, when I actually practiced, beginning first as a first as a fellow in 1975, and then when I came on staff at Duke in 1977, we really saw a variety of cancers. Not just but blood, I know it sounds odd that leukemias and blood are my first loves, but they are [laughs], but I've treated almost every kind of cancer -- solid tumors, sarcomas. And in my first several years, I would probably say 15 or more years at Duke I treated not only blood cancers, but solid tumors, sarcomas. And one time I was a part of a group of four, we were known as, we were known for treating blood cancers and anything else that nobody else wanted to treat [laughs]. So I've had experience with a lot. But fortunately, over the last couple of decades, and certainly well, even a little beyond that, the treatment of most cancers has been more differentiated. So I have colleagues who treat lung cancer, I have colleagues who treat breast cancer, and sarcomas. And those are all things that I and my colleagues treated in the past, but they're better off now having someone who focuses directly on that particular type of cancer. And I think that's really a part of the maturation of oncology, and hematology, malignant hematology, and a good part of the progress of treating cancers.

JO 03:50
Okay. So if I understand correctly, when you began your career oncology was a more general field, and you were looking at a really wide spectrum of cancers and there have become narrower focuses for physicians and oncologists, as the knowledge base has grown, as the treatments have developed, is that roughly accurate?

JM 04:22
No, that's quite correct. And also, the base of my colleagues who wanted to treat cancers expanded a great deal, too. When I began, I was a little aberrant among my colleagues growing

up and yet, that's what I wanted to do. But most people went into other internal medicine, or surgery or the like. Over the last several decades the base of people who really wanted to treat cancers of all varieties really increased a great deal, which is fantastic.

JO 05:07
So just across the board, the attention that's being given to cancer treatment is growing.

JM 05:14
And not only that, it's the expansion of what you could do, what you can do. And what you can treat. Because when I began, there were a lot of things that we treat now, very successfully, which did not have treatments. And those have evolved over the years and decades really.

JO 05:37
I want to get around to talking about how you developed those first, I think you called them your first loves. And I want to start in the early part of your life. So, from what I understand, you are from Georgia originally.

JM 06:00
Yes.

JO 06:01
Can you tell me a little bit about where you're from, and what your family was like, and any early influences that you think made a big impression on you?

JM 06:14
I grew up in a small town in south Georgia named Rochelle. It was 1,200 people then, almost the same number now, but it's not the same group. And my mom was a school teacher, she taught high school math. She was married to my father, and my father died as a bomber pilot in World War Two when I was less than a year old. She moved back to the small town and eventually married my stepfather, who was a great guy. He was a farmer. And I have three half brothers, had three half brothers. Unfortunately, my oldest half brother died in the early part of this year, of cancer we had had treated at Duke for the last 17-18 years successfully.

JO 07:15
Sorry to hear about that loss.

JM 07:17

And it was a bad surprise. But at any rate, I grew up in a small town and in basically a farming community. My mom was very intellectual, and smart. She's still as sharp as she ever was. And she'll be 100 years old in December of this year. She's still as sharp as she was then. And she really always expected me to do well and me to excel. And I went to a very small school. I had 31 people in my graduating class from high school. I played all sports -- football, baseball, basketball, and ran track, as did everybody else, because we didn't have a big enough base to differentiate very much. And I was very fortunate in the teachers I had there. I had a great

teacher in science, literature. You wouldn't think so, but I really did and learned a great deal. And of course, I always learned a great deal from my mom and my relatives as well. In high school, I was looking around, I went to Emory University, and was there for four years and graduated in 1966. That was going to Atlanta, which was a big city then, it's now a really big city. And yet it was kind of a big small town then. And Emory was really a fantastic place intellectually. I majored in chemistry and the sciences but I had a minor in philosophy and some odd things like that.

JO 09:20
Was that an unusual decision for someone from your town to go to Atlanta to go to college?

JM 09:27
Of my graduating class, I was the only one who completed a four year college. And some went to college, most of the girls, young ladies, went to more of a secretarial school, but yeah, and they were smart people. But it was unusual. And now many, many years later, it's not as unusual. But it was at that time.

JO 09:55
Were there other paths that you considered other than going to college?

JM 10:02
No. Not really. And I, for whatever reason, sort of had in my mind from the outset going to college, that my goal was to go to medical school. My exposure to physicians was not with specialists, which I am, but with general practitioners, who were good doctors. And the interesting thing is they, they were very good, but they always knew when they were over their head, and they always knew when to refer people to other places. And from there, people would go to Macon, Georgia, to Atlanta, to Birmingham, to the University of Alabama Medical Center. And you know, that was very unique. But sometimes that would happen. And yet, the general practitioners were pretty good at a lot of things that they probably would never do now. I can remember, being in the operating room with one of them, they said, "Oh, come on in." Which would probably never happen now. And he was doing an appendectomy. And it's one of the first times that I almost fainted, I didn't really, but it was close. And he was a family friend, not in the same hometown, but a family friend. And it sort of whetted my appetite for that. And then, one oddity is, I played football, I was a quarterback. And I injured my left knee in the first football game my senior year. And it hurt a lot. And so the next morning, I went to the local GP, he put a needle in it, got out a lot of bloody fluid. And I said, "That really hurts. But it's kind of cool." [laughs]. And what he did, what we did, was tape up the knee, and I played the rest of the season. And then I [inaudible] at the end of the season in December of that year. It was a small school, and there are some very excellent big schools in south Georgia, one which was a high school national champion several times. So we were a small group, but we still enjoyed what we did. And we had a decent team.

JO 12:39
Yeah. So that the GPs that you got to observe in their practices, these were in your hometown of Rochelle?

JM 12:49
Actually, they were in a nearby town, there was the GP in my hometown, but in a town called Fitzgerald, which is about 23 miles away. There was a hospital and a medical center -- a hospital, not a medical center, I would say. But yet, that was another step up in medical care. And it was really the hands-on type of medicine that I was exposed to from the very outset, which hopefully, I still do [laughs].

JO 13:27
Hands-on in the sense that they were treating people even when it was a little bit on the edge of what they could do locally.

JM 13:42
Right. But again, they were very good at referring to larger areas and to larger hospitals. And they didn't try to push their limits. Sometimes we all do, but they were good doctors who knew when they were over their head.

JO 14:07
Both of those stories that you told about the appendectomy and about the knee injury, it sounds like you had a mixed reaction of, it was both interesting and also kind of, I don't know, how would you say, like maybe you'd say it was gross? [laughs] Or what, what were you thinking at that time?

JM 14:29
I think, and I've had this experience as a physician so many times, and I'll give you an example, in the last few years at Duke. Everybody, sort of, the first time they come in contact with the "Invasion of the Body," sort of react to that. And I can remember a lovely lady who I know very well, who's a physician now, was a Duke student. And she rounded with me on my ward for several months, and always was great, tremendous. And one day, we walked out of a lady's room, and she hit the floor - blam - and basically fainted [laughs]. She was fine, she wasn't harmed or anything. And when I talked with her, I said, "Why now? Because you've been with me and you've seen things that were much, much worse than this." And she said, "The lady reminded me of my grandmother." And that's, you know, whether it's an appendectomy, whether it's something bleeding, or, you know, in the emergency room, almost everybody has some sort of experience like that, you know, and then you kind of get over and say, "Okay, I've done that, been there, done that, you know, now I can go on and be a student, come back to the ward and even a physician in the future." Which she is. Usually [laughs].

JO 16:17
That makes sense. And being at a medical center, and having trainees studying under you, are there other things that you tell them to kind of prepare them for that? Or to help them through that transition of getting over that response?

JM 16:40

Oh, yes. And I think that's very broad, because I had students in the clinic, in the emergency room, and each one of those sites is very different. And in terms of preparing people, it's very simple. Let's say, you're in a room and I want to send a student in to talk with you. I might give them a little background view of what I know about you. And then say, "Well, what I want you to observe is how someone reacts to you being there with your questions and the like." And that's very different let's say, in a clinic, in the emergency room, or other other sites, or on the ward. All of those are very, very different. And, you know, to me, that's part of the orchestra of what you do as a physician, which is what makes it a lot of fun. And conveying that to students, to residents, interns, pharmacists, BAs, NPs, all of those are people who are learners, or people who are there to learn from you, but who come with obviously, a considerable base of knowledge from an appendectomy when you're in high school, or getting your knee injected [laughs].

JO 18:22
So, if I understand correctly, you did your medical training at Johns Hopkins?

JM 18:34
That's correct.

JO 18:35
Can you tell me a little bit about how you wound up at Johns Hopkins, and what you were thinking as you were going into that experience. What were your expectations? And then, and then, what was the experience like?

JM 18:52
The base of that was pretty simple. I did very well in college, I got my first C in my first quarter, and that was quite a shock. But I did very well, I had a Bachelor of Science in chemistry and the like, and I knew I wanted to go to medical school. I was at Emory and did apply to Emory Medical School and was fortunately accepted. I had a very close friend, who is still a close friend, who was a physician one year ahead of me. And he was from Georgia as well, farther south even than I am. And he had actually gone to Johns Hopkins a year ahead of me. And he basically suggested that I apply there, and I did that. I think I went up Thanksgiving, or right around that, my senior year in college. And when I left Baltimore, I said, "Well, that was nice. Probably never be back here." And I had wonderful interviewers who actually became friends later on. And so I went back home and my mom called me, I think I was at someone's home in Augusta, Georgia, just after Christmas. And said "I have this letter here, should I open it?" And so I was accepted. And it said, "Let us know if you're coming." I said, "Okay, I'll do that right away." [laughs]. And, you know, I'd been in Atlanta, Atlanta is a big city, Baltimore is a much bigger city. And fortunately, I had some distant relatives there who kind of took me under their wing, kept me, not necessarily on the straight and narrow, but actually were there for me if something came up, which it usually didn't. And so I arrived in the fall of 1966 with about, I think we were 96 men and women from really all over the country. I was from the south, there was one of the southerner, an African American gentleman who is also an oncologist, oddly enough, and I think we were the token southerners.

JO 21:42

So you didn't expect to get admitted?

JM 21:46
Well, I'm not sure what I expected. I said that this was great. I had a great interview, and they seemed to be very forthcoming and enjoyed what I said. You know, you never know. And I think I left not really knowing. Not to be pessimistic but I think I already knew that I'd been accepted at Emory. So I kind of had a backup, it wasn't a be all and end all. But those are the only two places that I applied. And, my mom, you know, I think I had to prove to her that it was below the Mason Dixon line in Baltimore, but she encouraged me and there you go. And so that fall, I landed in east Baltimore, which was quite different from my experience in Atlanta. But I had a circle of friends, some from the south, many now who I know who from all over the country are from the west, northeast of course. And many of them, we can get into some of the things we've done, in the interim. We'll talk about a trip to Cuba and some things with this very, very group. And I think, just like going to college, you go into medical school, it's an increment above the volume and the expectation that you had before, just intellectually and what you have to absorb, and what you do. So I think that was another shock after college, and certainly was in medical school. But teachers were -- one they were fantastic -- secondly, they actually wanted you to succeed, which I think it was very rare to find a faculty person who wasn't helpful. I'm sure I'm oversimplifying, but [laughs].

JO 24:30
Do you have any specific memories of a time when one of your instructors seemed to really be interested in seeing you succeed, and did something to show that?

JM 24:48
Oh, yes. I think one was a gentlemen by the name of W. Barry Wood. And W. Barry Wood was in infectious disease. He had been the youngest, at that time, he had been the youngest chief of medicine in the country. I think he was from St. Louis, then he came to Baltimore as the head of infectious disease. And he was an incredibly bright, but also incredibly nice man. And he expected a great deal of you. But if you had a problem, you could go to him. And he would guide you through what you needed to know. And he was certainly on one end of the spectrum, there were some that were much more rigid than that. But he certainly was [supportive]. Now one of his students actually was one of the first people from Hopkins who won the Nobel Prize. Barry didn't, but his student did. And it was just indicative of the quality of people that you came in contact with. And much of the first two years was didactic, and in classrooms, but there was pathology. And then late in the first year, and into the second year, you started to do physical diagnosis. And I was fortunate to have as my mentor at that time, basically the man who was the father of genetic medicine in the US, Victor McKusick. And Victor was at that time, he was the only person I've ever seen who could write a paper and it was ready to go, you know, you could write a paper and it was done. And he had, as a resident, written a book about heart sounds and disease, which is classic, and that was as a resident. He taught me physical diagnosis. Subsequently, I was his resident for the better part of a year. And he was then my chief of medicine. So we really became friends. He was a Mainer. And he was a very rigid man, but he was fantastic. And he just kind of knew more medicine than almost anybody. Especially if it came to genetics. And so you develop those bonds, and that was through the whole four years of

medical school, and then on for three years of medicine training after that. I mean, we were good friends through that. Always the caveat that more was expected of you than most.

JO 28:24
More than other tracks in life, more is expected of a medical student.

JM 28:37
And he wasn't totally unique with that. I mean, many of the people who taught us were like that. Another gentleman in a different vein was Phil Tumulty. Now, Philip Tumulty was an internal medicine person, but he was really the clinician at Hopkins. And he looked like Santa Claus we always played him as Santa Claus in the student show. But he became a personal friend over the years as well. And if you ever see Tumulty in politics, his daughter is Karen Tumulty, who is a commentator in DC. I didn't know her. But each of these were different. Dr. McKusick was very different from Dr. Tumulty, and there were others. There was another clinician named Warren Allen who was a physician. He wasn't a researcher. He was just a real doctor. And he became a good friend and he just sort of filled a different place in training. I could probably give you a couple of dozen other people who had impacts.

JO 30:10
Yeah, it sounds like there was a really strong faculty there and that made a big impression on you.

JM 30:18
Very much so, and very interactive. And in pathology the same thing the second year, which was fantastic. And, of course, students expected a lot of each other, too.

JO 30:34
What part of the experience of medicine was most exciting to you at that point? And what did you anticipate doing, ultimately, when you were at that stage?

JM 30:45
Going to go into the ward and hands-on seeing patients. And differential diagnosis, which we did, you know, looking at symptom management and what that meant. And it was just to me the hands-on medicine, but also the intellectual interaction of getting data from patients, of making a collection of thoughts of what you felt they had and what you needed to do. And then moving on to that. And course that began very slowly with physical diagnosis with Dr. McKusick. And then gradually as we went on the wards, you added to that in terms of what you do physically, and how you interact with patients and the like, and to me, that was the most exciting.

JO 31:55
So the term differential diagnosis, that means actually gathering that information from patients and making subtle judgments about the diagnosis.

JM 32:07

It means really taking a symptom or a group of symptoms, or clinical signs, or laboratory, and putting them together, and then saying, "Okay, well, in my thought, the most common thing this could be would be this. But then again, you know, let's look at each one of those things." And that's the differential part. And then you start picking and choosing of that. And hopefully, if you do that, well, you end up with the right answer. [laughs]. And the more complex and the more complicated, the better.

JO 32:50
And were you seeing patients with cancer yet at that time? Or did that become an interest a little bit later?

JM 32:59
That was later. Basically there we were seeing patients on general medicine wards. Baltimore is a very diverse city. We had people who were in off the street, or in off a boat that came into the harbor, or other means. And so we saw a wide range, often, of very complicated and very diverse disease. And then beyond that, I mean those wards were again, general medicine wards. Someone was sick, they come to the emergency room, they go to the ward, and you see them there. And that can be, I would say sort of a whole range of medicine. It was much later that we started differentiating into different wards. Now, I probably first saw my first actual cancer patient as a third year student, third and fourth year student. And basically those were sort of random patients, but I was usually seeing them with a senior physician [inaudible]. The first time I was on a differentiated cancer ward was as a senior student. And there was a cancer ward, really, at Baltimore City Hospital. And that was run by physicians from Hopkins. But there was not the same type of ward, at least at that time, at Hopkins. And so I rounded with physicians there, and they were the first physicians that I came in contact [with] who did nothing but treat cancer patients. All of them were also doing clinical research, and also laboratory research, and treating, and the like. And so that was really the time when we started to really differentiate. But I was still a general internal resident at that time.

JO 35:31
So from what I understand you were part of a study in Japan that looked at cancers. Was that when you really began to get interested in the details of cancer?

JM 35:53
I was probably interested before that, but that was a bit of an artifact of the Vietnam War when I was a resident, out of medical school, and when I was an intern, and that was in 1970. Basically, you would either be drafted, or you would have a deferment. And a deferment could be anything from the Indian Health Service, National Institutes of Health, and the like. And basically, I was asked to be part of a study, I basically got an out of the blue call from someone at NIH, National Institutes of Health, and [they] said, "Would you be interested in looking at a job in Hawaii?" And of course, here I'm an intern and I don't know much. And I said, "Okay, who is this? It's gotta be some kind of joke." [laughs].

JO 36:50
Why did you think that?

JM 36:52
Well, because it sounded too good to be true. I actually went home and asked my wife, she said, "Sure, let's look at that." [laughs]. She's always giving me good advice. But she and I went to NIH in Bethesda, and I interviewed and I actually was given that job. Now that was a study, which had been ongoing for quite a long time, it was originally called the Honolulu Heart Study. And the Honolulu Heart Study was a parallel to the Framingham Study, I don't know whether you're familiar with that, but that Framingham Study in New England that followed a large population of people over, I think it's still going on, with cardiac disease, with lipid abnormalities, with cholesterol, all those. And so this was a parallel study. And obviously the population is really different in New England. But this was a study that looked at Japanese Americans, which were first, second, and third generations of immigrants. So Issei, Nisei, and Sunsei, are what those are. And so it was really a comparison study. Now, what I was hired to do was an addition to that called the Japan-Hawaii Cancer Program. And that looked at cancer incidence and the like, as opposed to just cardiac. And obviously, we were together, I and my colleagues did the same things, but I was there mainly because of the cancer-related study. And it pretty well solidified that. And yeah, it was a fascinating study, it was absolutely fascinating from the cultural point of view. So my wife is an artist and she was already painting them, but she did Japanese woodblock and flower arranging, that sort of thing. And we've maintained that, really, to the present. And of course, most of the people we came into contact with, but not all, were Asian. And all of the patients I saw at that time were Japanese Americans. Wonderful people. And, yeah, it was a very broadening experience in that regard. And so we basically that was for two years. [Crosstalk while phone rings]. The artifact of the Vietnam War was that I went into the Public Health Service after my internship here, only one year, postgraduate. So Alice and I then went back to Baltimore for two more years of Internal Medicine at Hopkins. So the first was right after internship, and then two years in Hawaii, and then two years back at Hopkins as a resident, and through this assumed friendships with Victor McKusick and with Tumulty and with all the people who were there. And many of the people were there for third year, but most of my class in medical school were in some way or another in military service or in Public Health Service. During that time I sort of solidified, and that's when I was on the ward at Baltimore City and really came in contact with the first patients I had ever seen with stem cell transplant, which was in its babyhood, literal babyhood then, and with really aggressive treatment of cancers, which if you compare it to what we do now, was pretty primitive.

JO 41:31
If you could describe the state of cancer care at that time, and just what that looked like and what the limitations were when you were seeing those patients.

JM 41:44
There was a lot of pushing limits in terms of -- really a lot of this began, if you look at treatment of Hodgkin's disease and breast cancer, Hodgkin's disease was first treated with anything other than radiation with a drug called nitrogen mustard. And nitrogen mustard was given intravenously, it made people horribly sick, but some people got well. And then that started in the 50s, the late 40s and early 50s, a lot of it arising out of research in chemical warfare. And so toward the end of the early 60s, other drugs came along that got put together. So there was a

multiagent chemotherapy program with an auspicious name of MOPP. M-O-P-P. Mustargen Oncovin Prednisone and Procarbazine. And yet, though it was very difficult and tough, some people got well. And that was then extended to breast cancer and others. There's a great book called The Emperor of All Maladies, if you've seen that, by Siddhartha Virgie. It's wonderful. He wrote the book we all wanted to write. [laughs].

JO 43:28
That's the classic of ontology.

JM 43:30
Right. And of course, then that was parallel, not by me, but it was parallel to a lot of the work with kids with Acute Lymphocytic Leukemia. And he really looks at that very carefully. And the people, largely in Boston, other places, were considered basically torturing children and [inaudible]. And yet, that's where what we can do now came from, almost direct. And of course, as we've said before, it has differentiated into much better treatment. And of course, one of the things that really happened in my career is in the early 90s we started to have medicines that you could actually treat nausea and vomiting. Not just treat, but prevent. Those things really sort of gradually came together and became what we can do today. So it's not orderly [laughs].

JO 44:39
So you mentioned with the treatment of cancer in children that early on, there was an ethical conversation about.

JM 44:54
There was always a huge ethical conversation, whether you should even bother

JO 44:59
Yeah, what was that conversation like? What were the different perspectives, and what was your perspective on it?

JM 45:07
I would say personally I never came in contact with that, because it wasn't part of my training in a sense. I didn't do pediatrics. It's like Dirty Harry, you got to know your limitations. I really couldn't treat kids. I love kids, but the people who did and the people who [inaudible] all that were heroes. And yet, it was tough. And there were a lot of ethical questions about whether you should, how much you should do, whether you should treat. And of course, we go through those anyway in life. Treating acute leukemia in adults is tough. And we've had questions like that, let's say, if someone comes in with acute myeloid leukemia, which is one of my [inaudible], and they're, you know, 18, 25 45, there's no question, you will offer the very best that you can. But if they're 85, that's a different question. You might still do it. But you know, the question, and what you're likely to accomplish, and how you're going to do that is very different. Does that make sense, sort of?

JO 46:32

Yes, sounds like especially before you had the ability to mitigate some of the side effects that it was a very careful balancing of the benefit and the cost.

JM 46:49
Oh yeah. I remember, and I won't name any names, but I remember in my fellowship training, someone who came to give a talk to us, and he was a pediatric oncologist. And he was using a class of drugs called anthracyclines, that's Daunorubicin and Adriamycin. And one of the side effects of that, that we learned over time, is it can be really great, and it can be curative. But given over a long period of cumulative time, it can cause heart failure. And this gentleman had actually left practice because he had gone through that, and "This is all great." And all of a sudden, you start to see the downside of that. And I think that's one of the things that you have to talk to yourself about. And we all have to do that, too. You have to basically talk to yourself about what you're doing, and what you're doing to people, and what you are doing for people. And it's that equilibrium of "do", "to", and "for" that often is where you really have to talk to yourself [inaudible].

JO 48:14
It sounds like a difficult thing to impart to students, or to guide students through. An important thing to guide them through. How do you talk to your students about that?

JM 48:34
I think you have to be totally honest. And I think that as part of your instructions. Let's say if you are sending someone in to see someone who you're treating -- it doesn't have to be kids, it can be adults -- with a group of drugs, let's say someone who's halfway through a treatment course. If I send somebody in to see them, basically, I'd say, "Okay, this is what's going on. At this point, we've done very well, things are good. But what you have to decide is how far can you go, [and] whether or not you're going to get into trouble or the like." And, again, it's more instructing across the board, but also being specifically honest to people or particularly to students and other learners, what your expectations are, what you're hoping to accomplish. Are you accomplishing it, and what are the pitfalls? And all of those to me is a very important part of teaching. And the teaching too, we found that the other important part of teaching is teaching patients. I would teach how to teach patients almost the same thing. Because it's important that they're not just people you're saying hi, go to the treatment room, and get. You go through all those same things. Basically, your education is not only just to students but part of it's to yourself and also to patients.

JO 50:30
That makes perfect sense. And so it was 1975 when you came to Duke, am I getting that right?

JM 50:41
That's correct. Yes.

JO 50:42
Okay. Can you tell me a little bit about how that came to be? And what was it like when you showed up at Duke in 1975? What kind of a place was Duke?

JM 50:54
Different. It was a little different. Well, I'd known about Duke for a long time. Even in high school, I had thought about going to, I obviously went to college and went to Emory and Emory had a medical school. But Duke at that time, and I believe Northwestern, had programs which combined college and medical school. And I didn't look too carefully into that, because I decided I didn't want to do that. But I was aware of those programs and Duke had a great reputation. In looking at colleges then, obviously colleges now there's so many that are great. At Emory, the largest group of students were from Florida. Because if you look at the demographics at that time, and go north, really the first colleges that you came in contact with were Emory, Duke, Vanderbilt, Davidson. And those were considered to be really good colleges. And then you go obviously to the northeast, and the rest of the country. But I was aware of Duke and I was also very aware of the Duke internal medicine training course. The Duke and Hopkins at that time, it's different now, Duke and Hopkins at that time were considered to be the toughest internships in the country. So you know, some of us were naive enough to think that we wanted to be in part of those things [laughs].

JO 52:48
Including you.

JM 52:50
Including me. I was fortunate, I stayed at Hopkins for my medicine training. I didn't apply at Duke, but I applied at Vanderbilt and was accepted. And now kids, gosh, it seems like they apply to 20 different schools. And here I'm doing two, I got accepted at both. And at the time I said "That's enough." It didn't cost as much then either. But I was aware of Duke then and of course medicine-wise and teaching-wise at Hopkins I was aware of Duke, as well as Vanderbilt and others. And I applied in my third year of residency, the second year after coming back from Hawaii for fellowships in hematology and oncology. Most of those were combined at that time, sometimes now they're separated into oncology or hematology. I knew that Duke was a combined program. And so I sent Dr. Wayne Rundles a note and said I'd like to apply. And I had applied at Emory, which I knew well, and several other places. Actually, the farther afield was the University of Washington which had a big transplant program, even then. And basically my wife and I went and interviewed there and I was accepted. And we decided that regardless of what was going to happen in the future, most likely we would end up on the East Coast, perhaps in the south, perhaps not. And we came down, I believe it was in early December, and all the roses were blooming and things like that. She says, "This is kind of weird. It might be nice." [laughs]. And I was accepted, so I decided to come here. Now, at that time, Duke was well known. Obviously then Dr. Rundles was the chief of the division. And he passed away some years ago. But yeah, I met him and others, and they accepted me. We actually came to Durham. And at that time, if you were out during the day, you could smell tobacco. And it wasn't unpleasant. Basically, it wasn't burned tobacco, it's sort of a sweet smell. It was a very small town in a way. Industrial tobacco and the like. And not quite as many restaurants as we have now [laughs]. Not nearly as many. And so it was a much smaller place. And yet, the medical center was great. It was and at that time -- are you familiar with the layout of Duke now?

JO 56:17
I'm acquainted with it, but not beyond that.

JM 56:25
Duke, if you look at the quadrangle for the college most of the buildings are stone, gray stone. Very Gothic, and grey stone. And the hospital at that time was as well. And it was in South, what now would be the South hospital. But that was where the whole medical practice and everything was. It was much smaller in a way. And yet it was very intimate in a way. When we would go onto wards, which we did a lot as a fellow, basically, if you were in a workroom, you literally fell over everyone. It's very crowded. And, for instance, even on a medical ward, you would see surgeons and the like. And so literally at the end of the year, you knew most of the people here. And so in a way it was, as I say, it was a little more intimate in a way, and you knew people well. And that started to change in the early 80s when Duke North, which was then the brand new big hospital, a lot of that moved out of South. And I always describe it as before we fell over one another. And then when you went to Duke North, everyone was in a cul-de-sac. And so it in a sense, in a real sense, decreased the random sort of interaction of the whole place, of all the people there. And so to me, I've said many times that every time we build a building, we get more cul-de-sacs.

JO 58:44
So from your point of view, there was a benefit to being in that smaller space in Duke South, and the intimacy of it.

JM 58:55
I mean, obviously in that sense you know people in different specialities, and you know who to call, you know who to interact with. And I still use that, the people of course, we're all getting older [laughs]. But some of those interactions now, even 45, 40-some odd years later. And yet, you know, you can say "Well, that's progress." And there's a little bit of a downside to that kind, to me. And of course Duke now is not just south and north. It's huge. And branched out into -- at that time, as far as I'm aware, there was not a Duke clinic anywhere outside of Duke proper. And of course, it was kind of crazy. Our ward at that time, well our clinic at that time, was on the second floor of the South building. It was between two medical wards, Osler and Halstead. And these are both time-honored Hopkins positions that they were named for. And this was in the middle. And we had a clinic that consisted of sort of a work area where everybody was, but all the patients came straight through that, and we had four examining rooms. And then I think we had three or four Barcoloungers that we used for treatment. That was it. Patients who came sat in the hall on benches, and then came into that area, because we were straight from the hall into that area. And basically you knew everybody, and everybody knew you. But it wasn't optimal. Of course we've grown way past that. And we're much more HIPAA-regulated now than then [laughs]. But across the hall was the Department of Medicine. The Department of Medicine now is totally separate and the like, and everything has been sort of growth and differentiation beyond that, I think. That's the way I would look at it.

JO 1:01:32

Right. Do you have any particular memories of being in that environment where you were kind of stumbling over one another? And you stumbled into something really kind of fortuitous?

JM 1:01:47
What would happen is someone would walk into a work room. And I'd say, "Hey John, let me tell you about something." And that was your consult. You didn't have to go through a secretary to have a consultation, it came to you. And so that was very frequent. Or a surgeon would come in, "Would you mind seeing Ms Smith down the hall?" That was easier, in a sense. Yet, you could barely move in the workroom or the like. And yet, it had a certain positivity to it.

JO 1:02:40
Yeah, I see what you mean, there was an informality that sometimes turned out to be fit to make things kind of smoother.

JM 1:02:50
Informality in that sense, but everything was also rigidly professional.

JO 1:02:55
Sure. The communication didn't have to go through official channels.

JM 1:03:01
Yeah, right.

JO 1:03:02
Well, before we wrap up for the day, I have to ask you about what kind of treasures you've been finding, as you've been cleaning your office there. Is there anything worth mentioning that you've uncovered?

JM 1:03:21
You know, I think I've gone through a process of going through a few decades of Christmas cards, and things like that. And notes and things like that. And it just brings back a lot of individual memories of patients. And I usually remember my patients pretty well, even 40 years ago. And, you know, I think it's amazing that it's been that long, and amazing that I've been fortunate to see a lot of just really fantastic patients and their families. And we're still friends with a lot, and actually along the way some cured some people as well. I also have had patients from other countries, particularly from Bahrain, and the Persian Gulf, I'm still in contact with a family there who I know well, I cared for the one of only two psychiatrists in Bahrain. And he was educated at American University in Beirut and then at Washington University here, and I cared for him for around 12-14 years of Hodgkin's disease and unfortunately he died, but then I've been in contact with his family and they will occasionally you know, email me or call me and we'll bring somebody over here. The same in Venezuela. But Venezuela has gotten a little tough, you can't communicate very well there.

JO 1:05:12

There's all kinds of turmoil there. So the reason why you've treated a lot of people from Bahrain is that started with one patient who was living in the States?

JM 1:05:28

And I actually visited there once too, this was before 9/11. It was the spring before 9/11, I visited there for a conference and got treated like royalty. And it was again, kind of like Hawaii, it was shorter, but a really great cultural experience. And one I wouldn't trade for anything. And those things come up, I ran into one of the patient's notes. I'm deciding what to keep and what not to.

JO 1:06:05
Not an easy decision.

JM 1:06:07
It really isn't. I mean, I don't think I have room in my study here to do all that. I think they may give me an office, another office at Duke. But I'm not going to guarantee it quite yet [laughs].

JO 1:06:26
I hope so, you've certainly been there long enough to warrant it [laughs].

JM 1:06:34
I think the other things that are really important, my first loves would be acute leukemia, and actually, the first young lady I treated as my patient with acute leukemia went into remission. And she remained in remission for close to 40 years. And after I retired, she came and she developed a lymphoma, and unfortunately died, but I think if I look at sort of the treatment that we did then, we did okay, but we didn't do great. And now, things have changed so much, not only with how we can treat, who we can treat effectively, particularly age-wise. So there's an expectation of success and people getting well and basically living normal lives. And that's certainly happened in some of the other forms of leukemia, chronic lymphocytic leukemia now is a totally different disease. And so it's really, it's fun to look back on that.

JO 1:07:50
And I can imagine that that collection of cards is one way to document that experience.

JM 1:07:59
Yes.

JO 1:08:00
So I believe we have our second call scheduled for Monday in the morning now.

JM 1:08:19
Right, correct.

JO 1:08:21

Yeah. So thanks for your flexibility with that.

JM 1:08:26
What time did we say?

JO 1:08:29
I think I want to say 10. But I can confirm, yes. 10.

JM 1:08:37
That sounds right.

JO 1:08:39
And on Monday, what I would like to do is to look a little bit more closely at your time at Duke and a little bit more closely at some of these therapies that have, you know, really resulted in the evolution of cancer care and the way that you're doing clinical work.

JM 1:09:03
I certainly will talk about, I mentioned the V Foundation, Jimmy V. That's been great because it's been an ongoing process for the last 25 years, and it's all started.. you're probably not a basketball fan, but..

JO 1:09:27
I have been at certain points in my life.

JM 1:09:32
Sometime look up Jim Valvano was the coach at NC State. And he won the national championship, I believe in 1983. And it was an improbable thing. It was impossible, but it happened. And one of the interesting things there is Dereck Wittenburg is a good friend who was a guard on that team. And at the end of the game, he shot a shot. And he says it was a shot. Other people say it was a pass. But at any rate, another guy caught it, and won the game with a goal. And that was it. And we've said many times is the only reason the Jimmy V Foundation exists is because of that shot.

JO 1:10:37
Sometimes it only takes one little moment like that to have a pretty big effect. Well, that's hilarious. It was great to meet you today. And I'm looking forward to continuing the conversation on Monday.

JM 1:10:59
If there's anything that you want me, just drop me a note, to think about specifically. I've got your list, and we've covered a fair amount of ground, but I can give you a whole, a better of a better evolution of being in that initial clinic that I described, sort of the evolution and growth into cul-de-sacs, and into really more and more a major medical center that's beyond anything that was here then. And a lot of that is research, a lot of its evolution of treatments, and evolution of care and the like.

JO 1:11:45
That sounds perfect.

JM 1:11:48
Well, go change diapers.

JO 1:11:49
[laughs] I will. No doubt she's ready for me. Thank you, Dr. Moore. You have a good weekend.

JM 1:12:00
[laughs] Okay, you as well. Okay. Bye bye.

TRANSCRIPTION (joseph-moore-interview2-audio.wav)

Joe O'Connell 00:01
We are recording.

Joseph Moore 00:03
So long as I have a little coffee, I'm fine.

JO 00:05
Okay, perfect. If you run out of coffee, let me know, I'll hit pause [laughs]. Alright, so it's November 9th, 2020. My name is Joe O'Connell. And I'm interviewing Dr. Joseph Moore, who is a Professor of Medicine at the Duke University Medical Center. And this interview is for the Duke Medical Center Archives and for the Department of Medicine. And this is the second of two interviews that we're doing remotely due to the Coronavirus pandemic, and not being able to meet in person. So, in our previous interview, we left off talking about when you arrived at Duke in, I believe it was 1975?

JM 00:52
That's correct. July the 1st.

JO 00:54
Do you remember that day, in particular?

JM 00:57
Well, most of the things that I've done after medical school, you know, internship or residencies all begin on July 1st, or my initial internship at Hopkins started at 10pm, June the 30th. So it was a little bit different. But in fellowship when I came to Duke, I appeared early in the morning on July the 1st of 1975.

JO 01:28
Do you have any specific memories of that day?

JM 01:32
Well, I went to the office where I knew we were, and they told me to go down and meet Dr. Rundles and Dr. Ross, Dr. Rundles, actually in the cafeteria, which was down on the first floor, and I went and found him. And we went and made my first series of rounds on the medical ward at Duke. And basically, it was very similar in a way to Hopkins. A little bit more that you were with a -- in residency and particularly at Hopkins, you actually had a great deal of autonomy. And coming here, I was almost always, at least for the first year, with a senior medical person in the division of hematology and oncology. And I worked with Dr. Rundles, who was the head of the division then, and worked with him for many years off and on. Wendell Ross was an immunohematologist and a world renowned person in that regard. And he was actually the chief of medicine at the VA Hospital at that time. He subsequently became a chief at Duke. The umbrella was over both Duke and the VA Hospital. And you would be usually in blocks of anywhere from one to three months at one of the other. And I actually began at main Duke. And

then later that fall, I think I was here at Maine Duke for three months and then went to the VA Hospital. And they're very different, but they complemented each other, and you went to more autonomy when you went to the VA Hospital. I always enjoyed it, we appreciated and enjoyed the autonomy, but there was always, you know, really great backup from faculty. And I think it was a great way to train.

JO 03:52
I want to kind of zoom out and think about the whole span of your time at Duke. And I wonder if you could tell me, what were some of the important moments in the evolution of your job, and your role? And how did the role that you have wound up in as a hematological oncologist, how did that take shape?

JM 04:23
Right. I think I mentioned to you before when I first came, we were broader than just blood and broader than just hematology and hematology malignancies. And that certainly changed dramatically over not only years, but decades. And so really, my fellowship training was two years, and the first year was all medical wards both at the VA and at Duke. And that I loved that because I came in contact with good doctors and great patients and enjoyed that immensely. And now the next year, I did some ward, but I also did research in a laboratory at the VA. And that was Dr. Gerald Logue, the late Dr. Gary Logue, who was a wonderful guy, and had trained under Wendell Ross and anyone in hematology would always know the name of Wendell Ross, immediately. I think the next real change was, after those two years, I was offered a place on the faculty. And I think now we would almost always do three years of training, I was, in a way fortunate to do two. And then I became a faculty member. Now, as you may have seen in my intellectual statement, I was a little surprised with that. But I also was very flattered, frankly. And immediately on July the 1st, in 1977, I was on faculty and was working really right alongside the people who had trained me, with Wendell, with Dr. Rundles, and with Hal Silberman who was one of the major clinicians in Hematology and Oncology at that time, and he actually ran a cooperative group, the Duke affiliation of a cooperative group, called the Southeastern Cancer Study Group. I became a part of that. And that really was my introduction to doing clinical trials with a cooperative group. And that really has continued throughout my career. They changed and we'll kind of go over that. But when you look at what we're supposed to be doing first, to me, it's always patient care. Then there's teaching, I love teaching, and I became, I would then have the obligation to run a ward for usually a month at a time, mainly at Duke, not at the VA, with residents and fellows and the like, and that was part of teaching. And then the third pillar of that was research. And I had done some laboratory research with Dr. Logue and I had known way, way before that, that that wasn't going to be my path, that my path was going to be clinical research and doing protocols. And Dr. Silberman, Hal Silberman was fantastic at doing that, and ran that side of the cooperative group. And so I really became an integral part of the cooperative group at Duke. Oddly enough, at that time, I became one of only a few people who actually were doing patient care. I had my own clinic then, was getting my own patients. But there was Dr. Silberman, then there was Dr. Rundles. And each of us had our own group of patients. We all worked in the same clinic. I think I had mentioned that our clinic at that time was rather small, if you compare where we are now, on the second floor of Duke South. The old grey building. I believe it was probably a year to a year and a half after that that

we moved into the Morris building, which is in South, it was an addition to South. But we went from that very tight clinic to what seemed like a really expansive space with regard to, one, to our work areas, but also the areas where we saw patients and where we treated people. It was a treatment facility, which was much bigger. And that seems very small now, but a part of the evolution. My first office was actually a desk in the back of Dr. Rundles library [laughs]. When the Morris building opened, I actually got an office, a very small office, but it was on the second floor. And I thought I'd gone to heaven then [laughs].

JO 10:09
I want to follow up on a couple of things that you said. You said when you were offered your first appointment after your fellowship that you were kind of surprised. And I wonder why were you surprised?

JM 10:26
I'd certainly said that if I had the opportunity I would stay at Duke. But you know, that's something that you can say, but someone else has to act on it. And I guess they had felt that I would be successful and wouldn't have made the offer. I had three other colleagues who were fellows with me. I was one of four. One went into practice in the Norfolk Tidewater area, and really has been a major clinician there. And the other two left the area. So I was the only one who was going to stay around. Maybe that's why they asked. But I had been involved with clinical research and the like. And so it was clear that I should have the right attitude, I guess. And I had been very fortunate in that regard. And, you know, that's something you never know. And they gave me that opportunity and I loved it. And that's beginning mainly with taking care of patients that come to you, but also, cooperatively taking care of my colleagues' patients, on a sort of a rotational basis, because I was the low man on the totem pole then. And so I did a lot of that.

JO 11:58
Yeah, what kind of jobs fell to you as the low man on the totem pole? What was the difference in your role versus a more senior person?

JM 12:08
Well, I think it was mainly that I actually saw a fair volume of patients early on. Well, volume then was much smaller than it is now. And I think certainly, I would assume responsibility -- Dr. Rundles was in the process of being a major author to a major textbook in hematology and oncology, and he spent a great deal of time doing that. And so basically a lot of the patient care fell to me, but I always did it in cooperation and in concert. Dr. Silberman was always high energy, and he could do it all at once anyway, so he didn't need me as much [laughs]. And again, all of this was mainly in Duke South. And all the wards were there. So it was a much more circumscribed place. And then in moving into the Morris building, a substantial amount of money had been given to construct that. So it became a sort of combined patient care and research, both were ongoing in that building. And that's where my office went. So for the first time, we were a little bit away from the ward, but that was perfectly okay, because we were all in the same basic building in South. I think, again, you sort of gradually assume a larger role in teaching, and in teaching interns and residents. You just become one of them, you just left them

and become one of their teachers. And I loved that. I really did. And I think that the first few years after that, after coming on staff, really were in South. And it was in 1975. In 1983, I believe I'm correct, the big hospital, the Duke North, was constructed and we moved virtually all patient care to that, I think I'd mentioned evolution from the crowded work rooms and the like where you fell over everyone, to being a cul-de-sac and actually decreasing the sort of the random Brownian motion interaction that you had before. It wasn't a shock. It was just different. The first thing they did was instruct us on all the floors and where everything was so you could find people,

JO 15:12
Really, so you actually had to get sort of a tour of the facility?

JM 15:19
Very much so. And not just me, but everybody.

JO 15:24
I'm curious about that, just because that's an interesting moment in the history of the institution. So how did they orient you to the building?

JM 15:41
Well, it was fairly orderly, and the construction of the building was fairly orderly, it was, at that point, eight floors with half a floor, and the night floor. And so it was basically triangle here, triangle here, and a square in the middle. And so it was fairly, it wasn't difficult, but you just had to be accustomed to doing that. Of course the wards were brand new, and that was quite different. The patients didn't change, but there were more of them. And I think really, it was a positive thing. With the caveat that you kind of lost some of the random interpersonal relationships. But we were small enough then and still within the campus, of the hospital, and the like. And the Duke North was very close to the VA Hospital. So you literally could just walk across the street and be there. I've told people many times when I came, we had Duke South, and Bell Building in the middle, and everything from there to the VA Hospital was blank. And the next thing that was there was the Mudd Library, which was still the first other building there. And it's still. But it's part of that progressive growth, progressive expansion of Duke. And of course, we're much bigger and much more broadly-based than we were then. But we practiced good medicine then. And radiation oncology was in the basement of the Morris Building at that time. It still is, but it also expanded over to the Cancer Institute once that came in about seven years ago. So again, it's just sort of an incremental growth through that period of time.

JO 17:57
And by the time you had your appointment after your fellowship, did you already know that you wanted to work on cancers of the blood?

JM 18:11
Pretty much, yes. But again, I think I had mentioned that we were small then, and at one time, usually a few months after I came on staff, it was mainly Dr. Silberman, myself, and Dr. Rundles. And I think I've searched back through my memory bank, and so we saw most people.

And it was only later on that we started to expand staff-wise, and then actually broaden the base. So you really still did almost everything. Someone had lung cancer, you treated lung cancer. Someone who had breast cancer, you treated breast cancer. First love, still leukemia, lymphoma. My first publications in that time were with chronic lymphocytic leukemia with Dr. Rundles. And so that that remained, but you still went in, I still saw some solid tumors up into the '90s. But gradually over time it ratcheted down to mainly blood cancers.

JO 19:26
I think it's so interesting that you call leukemia and lymphoma your first loves. And I wonder if you could explain what it was about treating those diseases that you loved, or thinking about those diseases, and solving problems around them? What was it about it, that made you passionate about it?

JM 19:50
Sure. Well, I think these were all diseases, that you could fairly rapidly see what you had done. And I think the menu of things that we could do slowly expanded over time, and then sort of has taken a quantum leap in the last 20 years or so. And we can give some examples of that. But I enjoyed both treating the diseases, using the drugs, and also, you know, the people. And people are pretty much people, regardless of what the disease is [laugh]. And just intellectually. I think that that really is it. And through that period of time, a lot of the clinical research we did was with blood cancers. And so you could sort of incrementally see the evolution, in a positive way, of what we had done, that included lymphomas, that included Hodgkin's Disease, a whole variety of cancers of the blood and blood and obviously of the immune system. So it really was just intellectually challenging. And it was fantastic when somebody really did well [laughs].

JO 21:26
In your conversation with Laura, you mentioned that there are probably 100 specific patients that you remember, and that you feel like made an impact on your work? And I think you even mentioned a couple. I think a professor of History, who you knew. Is there another example that you'd like to share? Of course within the privacy needs of that person, but is there another example of a patient where you feel like meeting that person and treating that person made a big impact?

JM 22:14
Well, I think one of those I mentioned was, and there are many. And I certainly enjoyed the people who got better, or well, and who I could see serially or over time, longitudinally over time. And that sort of enhances your fun, if you will, of treating things. And that happened a lot with lymphomas, certainly with Hodgkin's disease. And in those periods of time, if you go back, I think I remember I mentioned to you, the course of chemotherapy called MOPP for Hodgkin's disease, M-O-P-P for Mustargen, Oncovin, Prednisone, and Procarbazine. Those things changed and evolved, really into the late '80s and '90s. One drug that came around was Interferon in the '80s that we worked with a lot, and that has come forward quite a bit. But I think it was really seeing the changes, but also seeing patients who had been treated before and who really, you know, stayed well. One young woman that I treated with chronic myeloid leukemia, I will say that she is my longest lived patient with chronic myeloid leukemia. At that time we basically

only suppressed the disease, okay? It's one of the only diseases that, at least at that time, had a specific chromosome abnormality that was the paradigm of the disease. And people would come in with a very high white blood cell count, a very big spleen and the like, and there are a variety of drugs -- Hydroxyurea, busolfan -- which really were just wet blankets, and they would suppress. Now this young lady I first treated in the 80s. And she did well in that regard. We were not doing bone marrow transplants, or stem cell transplants, at that time. So I referred her to my colleagues at Johns Hopkins who I knew from being there. She was transplanted with her brother's stem cells or bone marrow, and she's still alive today. And I followed her, I think it was about in the 30-year range, or a little bit more. And she had some problems after that related to it. But she was fantastic. I treated her father for something else, I was sort of a family member [laughs]. The other thing is that in the late '80s and early '90s, a gentleman by the name of Joe Sokol came to Duke and Joe was a fantastic oncologist and his first love was chronic myeloid leukemia, that same disease the young lady had. Now in that period of time the other thing that evolved, both at Duke and elsewhere, was the use of stem cell transplant. And that became a curative modality. So if you saw a patient, let's say in the early '90s, you would immediately begin to think in terms of going to transplant. And that was a whole algorithm on matching, finding a donor that matched, and usually that was only family members and the like. And that of course, it has expanded dramatically over the years. And the other evolution is in, and I believe it was really 1999 or 2000, I was the PI, the principal investigator at Duke, of a protocol called the IRIS study. And that looked at what was standard at that time, short of transplant, with a drug called ibrutinib. No, that's not right, it was imatinib. This was an international study, I think he was well over 1,000, somewhere in the neighborhood of 1,200 patients total. Not here, but we were part of that study. Now, when we started the paradigm for chronic myeloid leukemia was that you would be the wet blanket, you would suppress the counts. And gradually, if you didn't go to transplant, people would start to change, and then become an acute leukemia, and basically go downhill and die. What happened with the imatinib is it was felt that the same thing would happen, it would just be delayed. What turned out was that this became a spectacular drug. So the evolution, beginning with the IRIS study, and really, for the last 20 years, has been refinement in the treatment of chronic myeloid leukemia to the point that now if someone comes in, either they will begin with either imatinib, or one of the other similar drugs called tyrosine kinase inhibitors. You would expect the blood and bone marrow to go back to normal, and in the best of worlds, that chromosome would disappear as well. And so now, the most recent evolution of that -- and this is a group that I've been involved with, different from the cooperative group, it's more of a smaller cooperative group of people who treat primarily CML -- you can now in some patients, not all, actually get to the point where you can stop the drug and observe people over time. That never happened before, and never happened with another leukemia before, and unless they went to transplant. So that's been the evolution from way back. And now my young lady who I mentioned, didn't benefit, she still was transplanted. So she was having some degree of difficulty with graft-versus-host disease, very mild but there. But she lived long enough because of the transplant, but then if she came in today, she would go a whole different path. That's the kind of evolution that you see, which to me is very spectacular. Unfortunately, Joe Sokol who became one of my mentors, he came here from Roswell Park in Buffalo, he died before imatinib came along and all that happened. Because he had literally spent his life's work trying to use immunotherapy to treat CML. And it worked some, but not not enough. And then a spectacular drug and set of drugs came along. And that's really been part of a paradigm with

some other diseases too, not just CML and not just blood cancers, with almost all. You look at renal cell, you look at lung cancer, and there are oral drugs now that often will benefit those people. Just a fantastic evolution of clinical practice, of science, and of patient care. It really sort of fulfills all of those things.

JO 31:04
As you've seen these treatments get better and new treatments emerge, it sounds like Duke, and you in particular, have been at the center of that push. And you've been doing a lot of that research. And is Duke a leader in this field, and is that something that you tried to develop intentionally at Duke?

JM 31:47
Certainly, intentionally, at Duke. Because most of the time, these don't necessarily arise at Duke. Like imatinib came from a gentleman who is at Dana-Farber. And he recognized the potential, it was proven, and then the IRIS trial was really a registration trial, and one that, fortunately, we were part of that. And we really tried to foster that kind of relationship. I think the other thing, I've been fortunate to do a lot of that. And yet, if you look, it's been many, many people at Duke, and elsewhere, who've been responsible for that, or the evolution. And I think we've been fortunate to have good partners through cooperative groups. I mentioned the Southeastern group that actually stopped, I believe, in the mid-'80s. We became a member, we being Duke, of the CALGB, which is Cancer and Acute Leukemia Group B, which was a very large cooperative group, mainly in the northeast. The southeastern group was a very nice group of people in the south and the like. And we ended up in CALGB and we have all these people from Boston and New York yelling at one another. So we thought we had sort of fallen into the pit [laughs]. But these were fantastic people. And we became an integral part of that. And I actually was the PI on two major acute leukemia protocols. CALGB being again, is Cancer and Leukemia Group B, there was an A, but not for us. And you know, that was one of those was in 1990, and then 1992, and I have major publications from those. And I became the head of those protocols, in addition to all the people from New York and Boston. And so that was part of what I enjoyed too, is interacting with them. And those in a way changed some of the ways that acute leukemia, AML particularly, acute myeloid leukemia, was treated. And so to me, that was very satisfying. And I had a lot of people who helped with that. I mean it, dozens of people who contributed patients, and all over the span of that cooperative group. So I think Duke has always been good at fostering the clinical research and of course if you look at others, look at Bart Haynes who is now heavily invested in vaccine studies here, Wendell Ross, who I mentioned, was one of the world's experts on another type of blood disease called PNH or paroxysmal nocturnal hemoglobinuria. And it's been fantastic to be able to work with people like that all along. But those are fun things. Of course, evolution of the treatment of chronic myeloid leukemia is really a major success story. I had a little part of that, not a major part. By being on that. And, I've been on the NCCN, the National Cancer Center Network, I forget how many institutions are in this. But it's been ongoing for about 20 years. And I've been part of the CML and AML and some of the groups that really produce paradigms of how you treat those, and I'm still on the CML, but not the others. And Duke's been a part of that for maybe 20 years, I'm not sure. But that sort of brought something else there, we're part of a major group of institutions who do that. And for each one of those we would get together, now we get together distantly, but we used to have

meetings together. And those were very intellectually fantastic. And [we'd] basically produce guidelines for any particular disease, there's huge expansion now. But I was fortunate to be part of some of those, not all.

JO 37:16
I think I'm getting the picture that a given advance requires a lot of coordination between institutions and between different steps and stages.

JM 37:32
Right, and I think one of the main evolutions over the last several years, and several becomes probably 10 or 15, is that our division was usually hematology and oncology. And then there's actually hematology and blood, which was sickle cell disease and other things, but not malignant necessarily. And I think we've evolved to the point now that my division, the one that I'm part of, is hematologic malignancies and cell therapy. Well the cell therapy becomes transplant, and others, and that's been a major evolution. And basically Nelson Chao came here from Stanford as the head of that, pretty close to 20 years ago, either 18 or 20, I forget. But he's built a really great group who do mainly transplants. But I and my colleagues were people who we would see patients, and then if we felt that transplant would be appropriate, we would do that referral. Now we've come under one roof. So that's all part of evolution. And we look at space, we were all in the Cancer Institute, which was opened I think seven or eight years ago. Now the physical facility for that will be over at the North pavilion, which is across the street. And I always say it's near a major medical center [laughs]. But it's really moved there. And in the next few months all the clinical activity will move there. So that's really a major evolution from South with the rear for examining rooms and a few Barca loungers [laughs].

JO 39:42
One thing that I'm interested in as you're thinking back on your time at Duke is are there particular people or particular roles that you think are underappreciated, or people doing work that's been supportive of what you do that you think maybe get overlooked?

JM 40:13
You know for me personally, I'd almost do the opposite. Because I have had a very successful time at Duke working with people across lines, you know, those lines to me are people who are in the lab, and who aren't clinicians. And I've been very successful. And that's always been a fun part too, working with people in labs and bringing things to the clinic, and the like, and when appropriate, having my patients be part of their evolution of their science. And I think Duke, really when I first came here, and over most years really has had a very good appreciation of clinical medicine, I think. And when I say that, basically, Duke was a little bit different from, say, Johns Hopkins, which was much more, it's very research oriented, but I became a professor here, full professor in the '90s. Now that probably would not have been possible at Hopkins and a lot of other academic institutions. But it was part of the appreciation of clinical medicine, but also clinical research, and sort of all that together. And now, I count that as being very fortunate for me. When I first came on staff, as I said, we were all sort of in one small group. I became part in the late '80s, the group called the DIM, of the Division of Internal Medicine. And this actually was sort of a group within a group, it was sort of a multi-specialty practice within the

Department of Medicine. And there were two of us who were from hematology oncology, dermatology, each discipline actually had physicians who were in that group. And we were kind of a high-powered group of internists. And some of those are now in the hospital administration and the like. But what sort of gradually made that difficult, was basically insurance and how it was done, and this happened in the late '80s and early '90s. But I think there still is a real appreciation for people who hands-on take care of people, take care of patients, and yet in many academic institutions that's not as appreciated. And I think it's always at risk. Most people in a medical center know who they would go to see if they got sick. And that's very valuable instant information. And I still use people for referral that had been part of my group or groups, going back even into the '70s, '80s, '90s. Of course, we're all getting older and retiring.

JO 43:46
So you would say, in general, the attitude towards patient care at Duke is maybe different than some other academic medical centers?

JM 43:58
I think it is. I think it certainly has been in the past. And it's always difficult, because so much depends on insurance, in some ways, depends who can come to see you and the like. So we've been fortunate to maintain lines of patient care. If you go back way before I came to Duke, back in the '30s, the '30s and '40s, there was a group of clinicians basically, who became really the referral physicians for virtually all of North Carolina, Southern Virginia, going out even into West Virginia. And those were lines of communication that really remained. Even to a degree even now. Although not nearly as much as before, but someone who was sick, you know, Tazewell, Virginia, they'd come straight to Duke. And a lot of it obviously is competition. When I first came on staff, if you stayed in Durham and you went to the coast, I think there were two oncologists between us and the Atlantic Ocean. Now there are tons. And a lot of that is training and students, like I did, have come into hematology oncology. Which didn't happen before because if you go back to the '60s, '70s, basically people said, "Well, you can't really treat those diseases, why bother?" And I think that's one of the successes of training, of an academic institution, we've been fortunate to be able to do that as well, a great deal.

JO 46:12
So the lines of care that you were talking about, that's basically kind of a network of local physicians who might have connections to specialists at Duke.

JM 46:27
To Duke or even to other institutions. I think so much occurs where you really train. I trained at Hopkins, I still can send people there. But, other medical centers in North Carolina, very good. UNC is very good, East Carolina, Bowman Gray, all very good institutions. And not all are academic. I mean, Charlotte has very excellent medicine, and we all sort of become a referral network. But it's not always a rigid network. If someone at one place is better than someone at another, you can send them there as a rule. Sometimes that's channeled by insurance. And that gets more and more, there's a huge competition right now, which, I still am old school and don't think we should advertise. But that obviously is very archaic [laughs].

JO 47:36
I'm curious about that, what do you mean by thinking that you shouldn't advertise?

JM 47:42
Oh, I think that our charge is to take care of people, regardless. Not to try to make all the money we possibly can by hauling tons of people in. And again, that's a little bit archaic. And you maintain your referral networks by your expertise, and by the way you treat people. And I do think that's important. It certainly has been, and I think remains that way.

JO 48:24
Okay, well, this is kind of a fun question. So I'm interested in the sort of way that people in your field talk to each other, and what kinds of terminology, and lingo, and sort of creative sayings they use. And so for an example I read something where you refer to "ibs, abs, zols, and virs."

JM 48:56
Ibs, abs, zols, and virs.

JO 49:04
Are there other examples of that kind of lingo that if you weren't in hematologic oncology, you wouldn't understand what it meant?

JM 49:13
Well, I think most people are pretty, most physicians are fairly good at language and, frankly, academic things. And teaching is good enough now that it's unusual. And that's sort of a little tongue-in-cheek thing. "Ibs" are with the specific drug I told you about with chronic myeloid leukemia is a tyrosine kinase inhibitor, and it's an "ib" so it ends with "ib." So that's a imatinib, and there are dozens of them now. "Ab" is an antibody and probably the one that first came was retuxan, retuximab, but anything that ends in "ab", you know, sort of in your mind, that's an antibody. And it also has to do with how it's given. Many of the "ibs" are given by mouth, almost all of the antibodies are given by vein or under the skin. And the thing that made "zols", which are anti-fungals, really come around was oral drugs which treated viral things like herpes zoster, and things like that. And then "virs" mostly started with AIDS. Because if you look, many of the drugs that are used and which have made HIV and AIDS a chronic disease, basically are "virs" and so it's just a tongue-in-cheek way of doing that. But it's also a way of remembering [laughs].

JO 51:08
It's practical. Are there other nicknames that you throw out there a lot with your colleagues?

JM 51:17
In an academic institution, you're supposed to use generics. That's the intellectual way of doing things. Now, obviously, we all use trade names for drugs. And I think the ability if you don't know something to look it up, is just fantastic now. I mean, what you can do with this device and with my iPhone, or whatever other phone you have, it's really spectacular. I mean, we used to run to the library, and run through the card catalog and try to find something, try to find an article and then copy it. Now, literally, I can put it in my phone, have it in front of me in five seconds,

which is absolutely spectacular. And that's obviously an evolution with Steve Jobs and many other people, not us [laughs]. But just the ability to do that is really mind-boggling. And it's it's not only in medicine, that's almost in anything, that the information that's at your fingertips is really almost mind-boggling.

JO 52:41
So given that you've seen so many changes in this field, and in your day-to-day experience of treating cancers, what do you think is in the future of this profession? Somebody who's coming behind you, in your footsteps, what do you think their experience is going to be like? And what do you tell that person when you're training that person, what advice do you give them?

JM 53:17
Whether it's training in medical school or college, one of the things I did was I often had undergraduates come and round with me in my clinic or on the ward. Which always was fun, because I could show them things they'd never seen before immediately. That was always a lot of intellectual fun, but also important in terms of giving people a basis for trying to make a decision and what they should do. I think that people coming up now, we've said this many times, is that when some of the electronic medical records came around, and you know, old people like me, we'd have to work at it to use them. Epic is a good example at Duke, because Epic is the electronic system at Duke, and many other academic institutions use it. And yet, when people come out of college now, even high school, my 14 year old grandson would be able to tie right into that far better than I could. It's really that just that power of information is really amazing. Coincident with that the volume of information is mind-boggling. And a lot of difficulty is in looking at the pantheon of things that you can do in medicine, is how do you decide what's best for you? And sometimes that's exactly right as you go along, and sometimes it's not. Sometimes that's advice that you get, and sometimes not. I always had really good mentors or people who would answer questions and say, "Well, maybe you should try something else or do this." But I think that's difficult. I would encourage anybody to go into medicine, who has a real interest, but you have to really want to. It's not a halfway thing. In order to properly do what you should and bring yourself and bring your capacity to it, I mean, you have to really want to. And I would almost use that as a, not necessarily a grade, I would use that more as a, you know, winnowing thing if you could. Because if you come into medicine and are not that, you could be very unhappy. Because one, you can get lost in all that's here. I think the other thing is to always look at your colleagues as being your best support, and work with great colleagues. And basically, I've been able to do that, not only teachers, but people at the desk next to you, in the examining room next to you. And I think it's important to foster being able to do that, and be able to do it honestly. And I always tell people when you're on the phone and calling radiology or something, or anybody, the most powerful thing you can say is "I need your help." "This is Dr. Joe Moore, and I have a patient but I really need your help with this." It just puts you on a totally different plane. Rather than, "I've got to have this right now, and you're going to give it to me." You say you need the help, and it puts you on a different plane. Intellectually, and respect-wise. It's basically respecting a person, and I think having respect for everybody, whether it's -- I always knew the janitor almost as well, as some of my colleagues, always speak to them. And I had a young lady some years ago who came here from another city I won't name. And she was an intern, we will be walking down the hall. And she said, "You know the janitors?" I said, "Yep,

would that happen where you came from?" She said, "No way." And I said, "Well, yeah, I'm sad about that." Because you miss a part of the people who are around you who are working with you, and who really are important to what you do. And that's true. Whether it's a janitor, whether it's an X-ray technician, or the like, or someone in the lab who's drawing your blood, or drawing blood for one of your patients. You know, it all goes back to respect and how you treat people.

JO 58:39
Very well put.

JM 58:41
Yeah.

JO 58:43
Well, before we conclude today, is there anything else that you want to make sure to include in the archival record?

JM 58:53
I actually do, because one of the interesting things -- it's always interesting in terms of evolution, we sort of touched on it last time. I mentioned Jim Valvano, and the V Foundation, and that all came about very interestingly because I can remember, I've had basketball tickets for a long time, like 40 years [laughs]. And always enjoyed it, but obviously I'm too short to play very much. And Valvano was a great coach. And he always drove us nuts when he would beat Duke. But he came back from preparations from the Barcelona Olympics. When he left coaching, he became a commentator for ESPN and was a great commentator. And so he was preparing, and that was the one with all of the new pros, and it was a fantastic group. But he was there for ESPN, not as a coach. He returned to this area of preparation, this would have been probably April '84 or '85, I'd have to look. But he had developed bone pain, and he'd been seen at a hospital in Raleigh, and had a biopsy of an area in the bone and found a cancer. I received a phone call out of the blue one Saturday afternoon by one of the sportscasters -- you get your referrals in all sorts of different ways -- one of the sportscasters in Raleigh, and said that Jim Valvano has been found to have this and would you would you call his wife and talk to her. And what evolved from that is I called her the same day. And Pam was a wonderful lady and still very much around. And he was going to Memorial Sloan Kettering to be seen. The way it evolved is he came back and basically saw me in my clinic and I treated him for really about a year until he died. And he had a type of cancer, we always say that it was called a cancer of unknown primary. So we didn't know where it came from. And I've been asked many times, if this occurred now would you be able to pinpoint where it came from? I said, unequivocally. So we've evolved to the point with X-rays and [inaudible] that I think we could do that, unequivocally. I might be wrong. But what happened with that is he knew more people than in the universe. And when he died, really based at ESPN, they have been our best, our being the V Foundation for Cancer Research, have been our best supporters. And really just underpinnings for a long, long time, for the whole evolution. So we've developed very slowly and very, in a hopefully careful manner, to have a cancer research foundation, based on funds and monies that were -- originally the main thing was a golf tournament in Raleigh with a lot of his friends, he was a golfer. So you know, there was a big golf tournament, they brought a lot of celebrities in, and so that and other smaller

venues were part of our original fundraising. To date, we're well into $220 million and more. And we have a fantastic major board, which then it was very small. The board is across the board with industry, and again with a huge support from ESPN. And the evolution was with that board, but also with a scientific advisory board. And we get proposals for proposals for research from each of the comprehensive cancer centers that are established under National Institutes of Health, NIH, and NCI, National Cancer Institute. And then the scientific advisory board takes those and basically evaluates them. If I'm evaluating someone from Duke, I can't and we don't have any nepotism, because we recuse ourselves with anything that's related to us as an institution. Mike Kastan, who is head of the Cancer Institute. is a member of that board now. And basically we try to fund things that are going to make a difference in terms of the things we talked about. Some of our people have done extraordinarily well, made some discoveries that are important, and I think we have tried to be very focused and very careful in the money, in the way we've given away funds. Duke has benefited some for that, certainly. UNC has, very definitely. NC State, to a degree has. And really all over the country, you can name an incredible medical center in the country, and we've funded something in almost every one over time. Bob Bast was the head of the Cancer Center at Duke when Jim was there and when he died. So he and I became the first scientific board, just the two of us. He and I both had been on the main board of the foundation since the beginning. So we were founding members of both boards. And that's been, I went to my wife, Alice when this all came around, I said, "I'm pretty busy and I don't know." And she said, "Well, what you really should do is take some time, take a few months in a year, see how it goes. And I think that was 27 years ago." Yeah, she gives me good advice as a rule. And we have great friends from the board and from that, and both intellectually and personally, it's been an incredible evolution so far, for the better. You can go to jimmyv.org and take a look at some of the things we've done. And we have fundraisers all over the country, our biggest fundraiser has been the V Foundation Napa Wine Celebration. And this year, we had to do it virtually. So our funds weren't quite as good as they have been. But it did come off, and it came off better than I think any of us expected. And we've been evolving a similar thing with Virginia wine, although that's much smaller, but it's grown a great deal. In Loudoun County, which is a very wealthy county and near DC. So that's been kind of fun. I mentioned to you, the gentlemen I took care of from Bahrain, he was a psychiatrist. And as I mentioned, he was trained at AUB, American University of Beirut, and then Wash U. here in St. Louis, and was a wonderful guy, and unfortunately died after about 12 years of Hodgkin's disease. But things like that, some from South America, but most of my patients have come from a big circle around Durham. Draw a circle of a couple of hundred miles, and that's our real referral area. But I really love my patients, and most of them I get along with really well, and they're fun. And everybody's different. Everybody has something that's unique to them. And for me, being able to get to understand that and get with it, is a lot of the joy of clinical medicine. And I've been extraordinarily, I think, fortunate, one to be at Duke, second, to be here for a long time. 45 years. And I miss being in the clinic, but that's okay. For right now [laughs]. Anything else that you had mentioned, or that you had thought about that?

JO 01:09:26
I want to make sure that I understand how the V Foundation started. Whose idea was it originally?

JM 01:09:37
The V Foundation originally was a group from ESPN.

JO 01:09:43
Okay, and they approached you.

JM 01:09:46
Jim was one of their major commentators. And so he had a group of commentators and executives. Now right now, one of our major board members is Jimmy Pitaro, who's the CEO or the President CEO, I always forget, of ESPN. And that has gone back. And there were others in corporate America that he knew. And so it was really, once it sort of got off the ground, we brought in people who had been associated with Jim, his family. Nick Valvano has been a major contributor, he actually was sort of the operations person for the Foundation for a long time, he lives in Cary. And we get together with him periodically. And so it really was an amalgam of those people, but also, originally with the golf tournament, was many of the people that Jim knew just personally. And the golf tournament itself came around with that. The Napa wine came, because the daughter of the controller of ESPN, was a good friend of Jim's. And he's a wonderful guy, still is. And she is. And she was in the West Coast and very tied into Silicon Valley and the like, and so she was sort of the Midas to have that fundraiser as well. And there's been a lot of people like that have dedicated a huge amount of time and effort and expertise, and not just a couple, it's a lot. But that's grown tremendously. It started with friends and colleagues and evolved from there.

JO 01:12:16
Okay, I think I have a picture of how that got started. I think we've covered a lot of ground and this will be a good record to have in the archives there at Duke for people who are interested in some of the work that's happened at Duke during your career, in your areas of interest. And so thanks again for spending the time talking with me.

JM 01:12:49
I've enjoyed it. And if you find that there's something you need more, just call me.