

Pioneer Perfusionist Interview: Diane Clark

Mark Kurusz: Well, good morning. My name is Mark Kurusz. Today is February 1st, 2012, and we're going to interview Diane Clark. Diane has graciously consented to be interviewed for AmSECT. And without further ado, we'll begin the interview. Well, good morning, Diane.

Diane Clark: Good morning, Mark.

Mark Kurusz: It's great to see you again.

Diane Clark: It's wonderful to see you.

Mark Kurusz: I want to thank you for agreeing to be interviewed as one of the Pioneer Perfusionists. One of the first questions we'd like to address is just how you got into perfusion. What were the circumstances, Diane, that got you into our field?

Diane Clark: It was a happy accident. I was in respiratory therapy, a Respiratory Therapy technician, on the evening shift, and was delivering a carbogen tank. Remember those old 95%, 5%?

Mark Kurusz: Yes.

Diane Clark: One of those huge ones, is that an H cylinder...?

Mark Kurusz: Yes.

Diane Clark: ...to surgery. And this big, chubby man [Charles Reed] sauntered up to me and said, "How would you like to be a pump tech?"

Mark Kurusz: Is that right?

Diane Clark: And I thought he was talking about some kind of plumber. And so, I asked him, "What is a pump tech?" And he told me what it was, and that they were starting a school. And I explained to him that I was on duty, so I couldn't discuss it any further at the time, and I made an appointment with him to come to his office and talk about it the next day. Well, I did that. And then he immediately showed me into Dr. Cooley's office, which was a little closet of a thing, at the time. And Dr. Cooley had some questions about my background. One of the questions he had was, "Do you have a degree?" I said, "Yes." And he said, "What is it?" I said, "A Bachelor of Science." And he said, "What in?" And I said, "Theology." And he looked over at Charlie, and he said, "Charlie, we've always needed a dial-a-prayer on our pump team. Let's recruit her." So...

Mark Kurusz: Wonderful.

Diane Clark: ...I entered the first class of Texas Heart Institute School of Perfusion.

Mark Kurusz: Is that right?

Diane Clark: The next day.

Mark Kurusz: And what year was this, Diane?

Diane Clark: The end of 1971.

Mark Kurusz: Really? And this was at St. Luke's Hospital?

Diane Clark: St. Luke's, which, at the time, was joined with Texas Children's Hospital.

Mark Kurusz: Okay. Had the Texas Heart Institute been founded yet, in 1971?

Diane Clark: Yes, it had.

Mark Kurusz: Okay. And how long did you practice perfusion, Diane?

Diane Clark: I had practiced perfusion from 1972 until 2011, with a five-year break when I went to, what I sometimes call, the dark side. I was a hospital administrator from 1981 to 1986.

Mark Kurusz: Right, I remember that. Well, that was in Birmingham, Alabama, right?

Diane Clark: Yes.

Mark Kurusz: Tell us a little bit about what the first perfusion training program period was like at St. Luke's. How long was it, and how many were in your class, and really, how was the training conducted?

Diane Clark: On-the-job, to be quite blunt. And then, between cases, or after cases, we would get together in a small conference room, and Charlie would espouse his wisdom about perfusion. And I did a lot of reading on my own. And every time I did a case, supervised, of course, I was tested during the case.

Mark Kurusz: Sure. What sort of resources did you use? Did they have a medical library there at St. Luke's? What sort of books were available back in the early seventies?

Diane Clark: Very few books back in the early 1970s, and I was a frequent customer of Majors Bookstore...

Mark Kurusz: Okay.

Diane Clark: ...on Main Street, one block over from St. Luke's.

Mark Kurusz: Sure. And how long before you were able to do a solo case, were you considered trained?

Diane Clark: I can't say that on camera.

Mark Kurusz: Okay. So, it may have been a fairly short period, depending on the caseload.

Diane Clark: Actually, yes.

Mark Kurusz: Okay. Very good. So, you started at St. Luke's in Houston, Texas. That was really the center of the universe for cardiac surgery. I distinctly remember, in the mid-70s, I once calculated the number of open-heart procedures done in the United States. And one-seventh of all cardiac procedures were done in Harris County in the mid-1970s, which was a tremendous number of cases. What was a typical day like for you? You obviously did more than one case, typically?

Diane Clark: Yes. Over the years, from the early 1970s, on, through about 1980, the caseload increased each year, and each day, but the number of operating rooms also increased. When I first got into perfusion, the majority of what we were doing was cardiac valves and congenital cases. Dr. Cooley, I think, was very wise in having the forethought about what coronary artery bypass would do to the field of cardiac surgery. When I first started, the day would consist of about six cases. And as I said, mostly valves and congenital. And when I left, there were days that we did more than 30 cases.

Mark Kurusz: Goodness. And that was with a team of how many people? How many perfusionists, Diane?

Diane Clark: I think, when...on the days, we did 30 cases, we had a team of around 10 to 12.

Mark Kurusz: Okay. Were there other activities that the pump team at Texas Heart, in those early days, got involved with? Say, ventricular assist or cell salvage? That may have been before they really came on the scene. But what did you spend most of your time doing as a staff perfusionist?

Diane Clark: Running cases and teaching classes.

Mark Kurusz: Okay. So, you were exposed to a lot of the folks who are still in the field. Some may have retired, who came through the Texas Heart program. That was probably the largest program at its time, wasn't it?

Diane Clark: It was. We had a friendly rivalry with Cleveland Clinic, but it was very large.

Mark Kurusz: Sure. So, you were at St. Luke's. How many surgeons did you work with? You mentioned Dr. Cooley, obviously. Were there any other surgeons that you remember working with, in those...

Diane Clark: I certainly can't name them all, except I know I worked with Cooley, Hallman, Reul, Sandiford, who is now dead, David Ott, and actually, many others. Jim Livesay was starting his residency at the time that I left.

Mark Kurusz: Okay.

Diane Clark: Bud Frazier. Many surgeons' names, I, at least, recognize.

Mark Kurusz: Sure. Among those that you just named, do any of those surgeons stand out as particularly impacting your career, or making an impression on you, as you continued to work in perfusion over the years?

Diane Clark: Obviously, Dr. Cooley.

Mark Kurusz: Sure.

Diane Clark: He was always extremely supportive of the writing of the book, of the [perfusion training] program. Any resources we needed to teach perfusion, he found for us. He was very supportive. I don't know if you knew this, but his bachelor's degree was in English.

Mark Kurusz: I did not know that.

Diane Clark: And he had the skill of being able to dictate, in my opinion, a publish-ready paper, when he needed to dictate something. So, his command of the English language was brilliant. And he was even supportive to the point that he would help us edit the manuscripts.

Mark Kurusz: That is really amazing, for a surgeon who was very, very busy, clinically, that he would take time to critique the perfusionists' writings is really, very admirable, in my mind. You mentioned the book. And we clearly want to know more about how the book evolved. I remember, in my early years, the only real book that had been used was somewhat dated. It was the Galletti and Brecher textbook on extracorporeal circulation. What prompted the publication of "Cardiopulmonary Perfusion", and can you describe for us how that evolved?

Diane Clark: Quite simply, it was Charlie's idea, or Dr. Cooley's idea. But Charlie was the driving force in the writing of the book. You need to remember that, at this time, there were very few books, and there was no such thing as a computer. So, what we used was little microcassette recorders, and our...we called them secretaries at the time. Our secretary...now they're called administrative assistants...Kathy Atkinson, nicknamed "Cut and Shoot", from Cut and Shoot, Texas...

Mark Kurusz: Right.

Diane Clark: ...would type the manuscripts. And we would edit them. We worked on it a chapter at a time. And proofread, and proofread, edited, and proofread. And then they were published by Carlo Triolo's company [Universal Printing], one chapter at a time, and then eventually became a book.

Mark Kurusz: Sure. One of the things that I remember about that book that was so useful was all the wonderful drawings. There was a fellow named Timothy Hengst, I believe, who not only drew the anatomy and some of those spectacular illustrations, but also the equipment that was used. Can you tell us a little bit more about how he got involved in the project?

Diane Clark: We had a wonderful Medical Illustrations department. Again, Dr. Cooley providing anything and everything we needed. And the medical illustrators, Tim Hengst and Barbara Hyams were...they were that department. And so, we were able to call upon them, make many appointments with them, and they would come into the surgical suite, or we would show them exactly what we needed drawn about the equipment.

Mark Kurusz: Wonderful. And how long did it physically take, timewise, to complete the entire book? All the chapters, et cetera, et cetera. Was this a month, several months? Or, what...did it span one or two years, Diane?

Diane Clark: It spanned approximately six months.

Mark Kurusz: Oh, my goodness. Six months?

Diane Clark: Yes.

Mark Kurusz: That's extraordinary. When did you find time to dictate the chapters and edit what had been typed?

Diane Clark: In the evenings.

Mark Kurusz: That's amazing.

Diane Clark: Whatever time there was, that's when I worked on it.

Mark Kurusz: Well, you must have been very proud to see it finally in print. I know that one of my treasured books in my library is an autographed copy by both you and Charlie. I think it was introduced at one of the AmSECT meetings, very early on. And later, I guess, Texas Medical Products began distributing it. Is that right?

Diane Clark: Yes. They, and other people. I think, the [William] Harvey Corporation. That was their name at the time. And they distributed it, too.

Mark Kurusz: Great. Well, we're going to leave the background area, unless there's something else you wanted to add, any anecdotes from your background that may be of interest to the viewers of this interview and move into what I have titled career highlights. Practicing as long as you did, obviously, you saw many technological, as well as technique changes in the field. Are there any innovations during that era that stand out in your mind as being particularly important?

Diane Clark: Yes. And I made note of several of them. The changes from bubblers to membranes. The introduction of blood filtration of all types, especially in the arterial line, and pre-bypass filtration. Myocardial protection, in the form of cardioplegia, of course, was a big change. And the use of centrifugal pumps, versus roller pumps, for the arterial pump head, was a major change.

Mark Kurusz: Sure. Well, that's very interesting, very interesting. In your time at Texas Heart, I imagine that institution was obviously a high-profile place, doing a large volume of surgeries, a large volume of cardiopulmonary bypass cases. Did you have any opportunity to interface with sales reps? Or, I guess the broader question, Diane, is, what was your view of the cardiopulmonary industry in those early years?

Diane Clark: That they helped us. I didn't interface with them very much, except that some of the companies would send their representatives, their brand-new representatives, for many training courses. And in that way, I would interface with them, to teach them what was important to the user about their equipment.

Mark Kurusz: Sure. Well, I remember the dome that was a glassed-in area of the operating rooms where some visitors could look down on the surgery. Were sales reps ever allowed into the operating room, proper?

Diane Clark: At that time, we were not strict about forbidding sales reps to come into the operating room. I would say, if Charlie said they could come in, they could come in. If Dr. Cooley said they could come in, they could come in. But the operating room was not always filled with sales reps. It's not that we were bombarded with sales reps.

Mark Kurusz: Okay. Well, I know, because Texas Heart had a school of perfusion, you obviously were involved, once you were trained, to mentor, as well as teach students. How many classes came in during a given year? I believe it was a six-month course at one time, but then that expanded. Is that right?

Diane Clark: That's correct. The six-month course expanded to a year. Frankly, I don't remember when. But even at that, we had a new class each six months. And so, when it expanded to a year, we called the newbies, juniors, and the older ones, seniors.

Mark Kurusz: Sure. And the students, while they were in school, obviously, were supervised by the trained staff. Are there any thoughts you might have at this juncture, on the attrition rate?

Did every student make it through, or were there some that failed to meet the standards and washed out, so to speak?

Diane Clark: At one point, we had about a 25% attrition rate.

Mark Kurusz: Is that right?

Diane Clark: And the whole time I was there, we kept struggling, as we are now, according to the letters in PerfList, to find... How do you choose a perfect perfusion student? And we still didn't have the answers. And it sounds like we still are asking that question.

Mark Kurusz: Very good observation. Before we move on to more about the school, tell me how often you were on call, how many times the perfusionists had to work in the middle of the night. How many were on call at any given time?

Diane Clark: Frankly, I don't remember that much about call at Texas Heart Institute. I don't even remember if we had it a week at a time, or a day at a time.

Mark Kurusz: Okay.

Diane Clark: But I do remember being called in sometimes, in the middle of the night. And it was tough to go to work the next day, especially if it was a pediatric case.

Mark Kurusz: Sure.

Diane Clark: Then, over the years, I have been on call as much as 90% of the time, when I was in one town, alone in Alabama. And I've been on call a third of the time. And then, the last position I had, I was fortunate enough to be part-time and to have no call whatsoever.

Mark Kurusz: Wonderful. That's a good feeling, isn't it?

Diane Clark: It is.

Mark Kurusz: Well, during your years at Texas Heart, obviously, Dr. Cooley and some of the other surgeons did some very innovative procedures. Certainly, the implantation of the artificial heart stands out as one of the most important cases, probably of all times. Are there any other cases, or if you remember much about the artificial heart case in 1969...Well, that was before your time, wasn't it?

Diane Clark: That preceded me.

Mark Kurusz: But there was an artificial heart put in, I believe, in 1981, in a Dutch patient. Tell us about any memorable cases, Diane.

Diane Clark: That case transpired when I was an administrative resident, and worked in the perfusion department only part-time, in the evenings. So, I was not part of that case, as a perfusionist. I was only part of that case to have warned the CEO of the hospital at the time that it was going to happen, and it was going to happen quite suddenly. And then, my mentor and I, in administration, got a phone call, and said that the case was underway at the time.

Mark Kurusz: Goodness. Well, I'm sure it attracted a lot of the press. There was a lot of news coverage of that case at the time, as I remember. Tell us a little bit...how you approached an individual case. Or in your case, six cases a day. I assume the schedule was posted the evening before? How did pump team's cases get assigned? And once you were assigned one, or two, or three patients, how did you prepare for a case, Diane?

Diane Clark: At THI, you were assigned a specific room. And you did whatever cases were assigned to that room. And if the schedule changed during the day, and they transferred a case from one room to another, you were still assigned to that room. There were certainly breaks given by our cohorts, but we were assigned to that room. And the way we approached it and prepared for it is, we set it up, we had a checklist, and we conducted the cases. Most of the time, once the students were oriented, we would be supervising the student, or teaching the student, in the setup and the conduct.

Mark Kurusz: I know that one of the other stellar figures, certainly, at Texas Heart in those days was Dr. Arthur Keats. Could you describe briefly how the pump team interfaced with the anesthesiologists at Texas Heart?

Diane Clark: We were owned by the anesthesiologists, to be quite frank. They were the people that we asked the permission of to administer anything, and to conduct major changes in how we were operating the heart-lung machine. Of course, we would interface with the surgeons for things like how fast to pump, and how fast to turn the sucker pumps up. But for the minute-to-minute conduction of the case, we worked arm-in-arm with the anesthesiologists. And that was a shock for many of our students, as they went out into the real world, because that wasn't the case outside Texas Heart Institute, as I understand it.

Mark Kurusz: Yes. So, a slightly different aspect of teamwork prevailed at Texas Heart because of this close relationship that was, I guess, mandated between the perfusionist and the anesthesiologist. Who drew blood samples? Were you allowed to draw blood samples? And obviously, those results were shared with the anesthesiologist.

Diane Clark: Oh, yes. Hands-on for the equipment. We drew our blood samples, and then shared the results with the anesthesiologist. And in my last job at Bryan-College Station, I did the same thing. Draw and share the results with the anesthesiologist.

Mark Kurusz: Sure.

Diane Clark: And worked hand-in-hand with the anesthesiologist about the conduct of the case.

Mark Kurusz: Wonderful. Now, one of the things that obviously stands out in everybody's mind is the development of the American Board [of Cardiovascular Perfusion], which, as everybody knows, was initially an AmSECT initiative. But about 1975, a separate board was established to administer the certification exam. I know that, at one point, you were not only a director, but you were the Executive Director of the board. Could you tell us a little bit about those early years of the American Board, and any memories that stand out about conducting the exam, how the exam was created, that sort of thing, Diane?

Diane Clark: Well, the creation of the exam actually preceded me, and I think the person who headed that job up was Jim Dearing, who's not with us anymore. It surprised me, when the American Board was formed, how political, actually, certification seemed to be. I always approached it...I was assigned to check the credentials of people applying for the exam. And there's no politics in that, whatsoever. You check them, and if they're there, they're there. But there were people who would call up, who didn't make the deadlines and wanted exceptions made for them. And once you draw the line, you just have to toe the line.

Mark Kurusz: Sure. The first exams were just written exams.

Diane Clark: Correct.

Mark Kurusz: And then, the oral exam came into being, I think, it was 1976 or 1977.

Diane Clark: I think.

Mark Kurusz: Were you ever involved in the oral exam, either as a scenario writer, or as an examiner of candidates?

Diane Clark: Yes. Several times, [I was] involved as an examiner. And I think the whole board cooperated in what questions we would be asking, and what scenarios. The examiners themselves were given guidelines, and some leeway in how they treated the questions and the scenarios.

Mark Kurusz: Yes. I think that many of us who were involved with the board in those years kind of rue the day that the oral exams went by the wayside. As you know, it's all written now. And I think it was always, at least, expressed, or perceived as a trial by fire, to be questioned by two certified perfusionists. I remember, distinctly, one of the instructions oral examiners were given is, you're going to try to find out whether this person really knows what they're doing when they're running a heart-lung machine. So, as you said, the questions could go off in one direction or another, but I think it was a very worthwhile procedure. Do you agree with that?

Diane Clark: I agree completely. And I was sorry to see the oral exams go. I actually had to take an oral exam myself, because when I was in hospital administration, I lost my certification. And then, after reentering perfusion, I took the written and oral exams to become certified again. So, I know what it's like to be an oral examinee, also.

Mark Kurusz: Well, I think it's fair to say that the people examining you were probably terrified, Diane.

Diane Clark: I don't think so.

Mark Kurusz: No?

Diane Clark: No. I think they may have been intimidated, or wanting...Maybe one of them wanted to prove something? I'm not sure. But to me, it was just an oral exam. I don't even think I gave them the right answers, but at least I had rationale behind my answer.

Mark Kurusz: And I think that's what counts. And you were successful, obviously, getting through. One of the things that's off-camera, and I'm delighted to see these, is you do have some material...In particular, there's a framed photograph of the original American Board members. Is there a chance that you would be willing to have these duplicated and shared with AmSECT for sort of an archival depository, at some point down the road?

Diane Clark: Certainly.

Mark Kurusz: Well, at the end of this interview, what we'll do is, maybe, focus the camera on what you've collected. But one thing in particular stands out. There's a beautiful color drawing of what looks like an artificial heart. Tell us a little bit about that artificial heart drawing, Diane.

Diane Clark: That is the artificial heart that was implanted in the Dutch patient.

Mark Kurusz: Okay.

Diane Clark: And everyone who had anything to do with that case was sent one of those, and some other memorabilia and participated in a memorial.

Mark Kurusz: Sure. But that's a wonderful...Certainly, the idea of an artificial heart, back in those years, was really extraordinary. But today, 2012, artificial hearts are becoming more and more common, aren't they?

Diane Clark: Yes.

Mark Kurusz: I'd like now to shift, Diane, if we could, to the last section, which I've titled "Perspectives, Philosophies and Reflections." And the first question I'd like to put to you is, what do you consider personal and professional attributes that contribute most to a person potentially becoming a good perfusionist?

Diane Clark: I wrote down the words, "smart, deft, a communicator, calm, cooperative, and a team player."

Mark Kurusz: Very important.

Diane Clark: And by, "team player," I mean, not only with our perfusion colleagues, I mean with the whole surgical team. Because we operate as part of the whole surgical team. And many of us, the only interface we would have with our colleagues is when we would hand off a case to them, or work on a call schedule with them. Basically, we work alone. Except at the Texas Heart Institute.

Mark Kurusz: Sure. That's quite true. I think that you mentioned graduates were somewhat surprised that there wasn't as close an interaction in the real world with the anesthesiologist, as there was at Texas Heart. And certainly, at Texas Heart, there were often two people per case, but in the real world, quite often, it's a solo situation, isn't it?

Diane Clark: Correct. And therefore, if something goes wrong, you have to rely on your teammates, who are not expert perfusionists, to help you.

Mark Kurusz: Yes.

Diane Clark: And to have built a trusting relationship with that teammate is very, very important, and sometimes lifesaving.

Mark Kurusz: Sure. In your later work, outside of Texas Heart, did you tend to work with consistent team members, whether it be the nursing team, anesthesiologist?...Cardiac surgeon, obviously, was fairly consistent, but...Or was it a revolving cast of support personnel you would have to work with during a given day?

Diane Clark: I would say, every place that I have worked, except for Las Vegas, the team members were consistent. In Las Vegas, everything rotated, which did not make for a good work environment, in my opinion, for anybody.

Mark Kurusz: Sure. This next question, Diane, is very broad. It may be a bit difficult to answer, but maybe not. What does it mean to you to have been a perfusionist? Obviously, this was the major part of your working career. As you sit here today and think back, what did it mean?

Diane Clark: The first word that came to my mind was "fortunate." I think that I've just been extremely fortunate. As I said, it was a happy accident that I entered the field of perfusion. It turned out to be perfectly matched to me. It was personally satisfying all of the time. And I can't think of very many fields that you could work in, that you worked along with such outstanding, giving, intelligent, kind, and motivated people. That's what it means to me.

Mark Kurusz: Wonderfully expressed. I think that's so good to hear, Diane. I think that, if pressed, many of the retired perfusionists would echo those sentiments. Obviously, any career as long as the one you've had, has had its ups and downs. What did you enjoy the most about

being a perfusionist? Was it simply getting a patient weaned off the pump after a difficult case? Or, what gave you the most enjoyment at the end of the day?

Diane Clark: Very selfishly, the immediate feedback of a case. There's nothing benevolent about it. It was just a nice, selfish feeling to have a successful case, or to overcome a slight challenge. It just feels good.

Mark Kurusz: Sure. In any of your work situations, did the hospital setting encourage, or the surgeon encourage the perfusion team to meet with the patients ahead of time, or even as a follow-up? Or was it strictly in the operating room, providing perfusion services, Diane?

Diane Clark: In every case, it was in the operating room, providing services.

Mark Kurusz: Sure. Have you ever had the occasion... say, when a neighbor, or a relative of a relative was coming for surgery, that you were requested to provide perfusion services for that patient?

Diane Clark: No, fortunately.

Mark Kurusz: Okay. As you think back... We've talked about some of the extraordinary surgical innovations that took place at Texas Heart. Are there any memories, either at Texas Heart, afterwards, or in your professional activities, that stand out as being particularly memorable, Diane? I want to interject at this point, that obviously, the American Board exam had to have been a great source of satisfaction. That this exam that began with a very modest number of people being grandfathered, became nationally recognized as, really, the foot in the door to become a hospital employee. But I don't want to put words in your mouth. What may stand out, either professionally, or in the OR, as a particularly memorable event?

Diane Clark: I would say, two things. One, participation in the American Board's activities, as you described. And the other, the authoring of the book that we called, "The Red Rag."

Mark Kurusz: Sure. I wasn't going to call it that, but it certainly was referred to as that. And I mean, over the years, I found it amazing that surgical residents would go to that book, because the drawings and the descriptions, the drugs, it was all succinct, it was all under one cover. It was just a terrific resource for everybody in the field who was involved with open-heart surgery. I think that's fair to say, so...

Diane Clark: Thank you.

Mark Kurusz: ...we want to thank you. You and Charlie, for having the fortitude to produce it. And once again, the fact that it was produced in six months, I find staggering. That is really an accomplishment. Would you permit AmSECT, obviously, to archive this interview? We'll certainly provide you with an edited copy for your own library, but I think that, in years to come, the perfusionists of today will be able to look back, and hopefully take some appreciation

from all the trials and tribulations the pioneers went through. But we'd very much like to do that, Diane.

Diane Clark: Well, I'm honored, and yes.

Mark Kurusz: Before we turn off the camera, do you have any closing thoughts? Any words of wisdom for today's new graduates, coming into the field? Any closing thoughts before we conclude this wonderful interview?

Diane Clark: Good luck. I hope that the field of perfusion is as challenging and exciting for you as it has been for me. And I still think that I have been very, very fortunate to have been in the field.

Mark Kurusz: Wonderful. Well, thank you so much, Diane. It's been a great pleasure. [brief pause] Diane, we're back on camera. You've got some photographs and artifacts from your collection. Can you tell us about these, and show them to the folks viewing this video?

Diane Clark: Well, the first one here, is "Pioneers in Cardiopulmonary Perfusion." And it's a publication that was sponsored at the time by a company named Shiley. It includes several of my mentors, and people older than I, I have to say. Richard Beauchamp, Ed Berger, Jeri Dobbs, LeRoy Ferris, Angelo Iatridis, and Bennett Mitchell, who's responsible for the term perfusionist...

Mark Kurusz: Right.

Diane Clark: Charles Reed, my mentor. Jerry Richmond, a very, very fine individual, Ray Stofer, who started the school at Stanford. And I treasure this. And therefore, I'm really honored to be a part of this [current] Pioneers in Perfusion endeavor.

Mark Kurusz: Well, that's a real keepsake, isn't it? I well remember that. I think it was sponsored by Shiley in 1982, which is 30 years ago. It's hard to believe, isn't it?

Diane Clark: Wow. Yes.

Mark Kurusz: What else do you have there, Diane, that you might share with us?

Diane Clark: I have a photograph of the artificial heart that was implanted in the Dutch patient in... Was it 1981?

Mark Kurusz: I believe it was 1981.

Diane Clark: 1981.

Mark Kurusz: Wonderful. I think, either that heart, or one of the earlier hearts is now in the Smithsonian Institution, encased in plastic. Was this the so-called Akutsu heart?

Diane Clark: Yes...

Mark Kurusz: Yes. Dr. Akutsu was an early artificial heart researcher, who worked with Dr. Cooley to build that pump, didn't he?

Diane Clark: ...yes, in what we called the research lab. And we did several bovine trials of those.

Mark Kurusz: Wonderful. What else do you have, Diane?

Diane Clark: This is a little gathering that we had in Dr. Cooley's office, of the 20,000th perfusion, or open-heart case at the Texas Heart Institute.

Mark Kurusz: Wonderful. And who are the individuals in that picture, Diane?

Diane Clark: We have Charles Reed, Diane Clark, Dr. Cooley, **Suzanne Dolan**, Vicky Clifford, and Kathy "Cut and Shoot" Atkinson...

Mark Kurusz: Yes?

Diane Clark: Her name's Claudia. She was a 3:00 to 11:00 supervisor. And I'm sorry, I can't recall her last name. And **Diane Hilliard**.

Mark Kurusz: Wonderful. What other photographs might you have there, Diane?

Diane Clark: This is one of me giving a plaque, a memorial plaque, to the little boy who was the 30,000th case at the Texas Heart Institute. At the time, it was not acceptable...I don't know if there were rules against it, or laws against it, but it was not acceptable for a physician to advertise. And therefore, Dr. Cooley talked me into going on TV, on camera, and presenting this to the actual patient. Of course, with the patient's mother's permission, presenting this to the patient.

Mark Kurusz: Yes. Wonderful. Well, that's a real keepsake, as well. And I noticed this... A framed picture, there, was...tell us about that, Diane.

Diane Clark: I'm probably the proudest of this. This is the original American Board of Cardiovascular Perfusion.

Mark Kurusz: So, these are the members of the original American Board?

Diane Clark: ...of Cardiovascular Perfusion, when we separated from AmSECT, in order to purely pursue our objective.

Mark Kurusz: Yes. And could you name the individuals?

Diane Clark: Yes. And I will reflect that I didn't even think about it at the time, but now, I look back at this picture, and what other females do you see? None.

Mark Kurusz: Except for you, Diane.

Diane Clark: Yes. Okay. They are... Charles Reed, not with us anymore. James Dearing, not with us anymore. Jeri Dobbs, still going strong. Calvin Scott...

Mark Kurusz: Yes.

Diane Clark: ...another pioneer, me, LeRoy Ferries, another pioneer, Larry Shelton, and Michael Burgess.

Mark Kurusz: Wonderful. Those were the exciting days, as you said, when AmSECT relinquished duties for the exam. And that was the core group that, by golly, put on this exam, and look to what it's grown to now. There's nearly 4,000 certified perfusionists in the United States.

Diane Clark: Wow.

Mark Kurusz: Well, Diane, that's been wonderful. We'd like to, again, thank you for sharing your time this morning, sharing these photos. I'm sure, in years to come, people will look back and just say, "Boy, we owe a lot to the pioneers." Thank you very much, Diane.

Diane Clark: Thank you. I'm grateful.