Duke Surgery Chief Resident Oral History Project

Dr. James Meza

Interview by Justin Barr, 8 May 2020

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Justin Barr: Good afternoon. This is Dr. Jim Meza coming to participate in the chief resident oral history project. Thanks so much for engaging with this. I really appreciate it. It's the 8th of May and we're at Duke hospital. Dr. Meza, do you want to start a little bit about where you grew up, where you went to school, how you decided to become a doctor?

Dr. James Meza: Sure. I was born in Colorado Springs, Colorado on May 14th, 1986. My dad had just taken his first job as a pediatric anesthesiologist at a small private hospital in Colorado Springs, as he had finished his fellowship in pediatric anesthesia at Denver Children's Hospital. We were there for a year and a half, and then my parents decided to move back to the Detroit area, because that's where my grandparents were, so that I would be able to get to know them.

We moved back in mid-1987. By Halloween 1988, we moved into the house that I grew up in -- my parents had been building it. By that point, I had about a six-month-old younger brother. That's the house that I grew up in, that my parents still live in to this day. I grew up in the suburbs of Detroit in Bloomfield Hills, which is about 45 minutes northwest of downtown Detroit.

I attended Catholic school all the way through ninth grade and then switched to a private independent prep school called Detroit Country Day School for high school, which really worked out well for me in a lot of ways. It not only got me out of my shell doing different things but also really nurtured my interest in science. I'd always been interested in science. I am someone who has known that I wanted to be a doctor since I was eight years old.

With my dad being a physician, I just thought it was a very cool, interesting thing to do, to take care of people, to be involved in their life in very substantial ways. Of course, I wanted to be an anesthesiologist back then. Then I ended up getting accepted to Princeton University and went there for undergraduate. I majored in molecular biology and got a broad-based education but then focused in molecular biology. I enjoyed science. I was required to do independent investigation while I was there with junior papers each semester. Then there was a senior thesis, that was

about 18 months of work. I did it in bacterial genetics and transcriptional regulation in E coli.

Science was great, but I did not want to do basic science for the sake of science. I needed more of an application. When I was there, I started translating or being an interpreter for a pediatrics clinic in the town of Princeton and had really enjoyed that.

Dr. Barr: What language were you translating?

Dr. Meza: Spanish. My dad's family is Mexican, my grandfather is Mexican. He was around quite a bit when I was growing up, so I learned Spanish while I was growing up. Then I knew what I wanted to do after undergrad. I applied to medical school, interviewed all over, and actually ended up getting wait-listed at Duke even though it was my number one choice. Then I got into the University of Michigan, where my dad actually went to medical school. He did his undergrad and medical school there.

Once that happened, it was a no brainer. That really has meant a lot to him and I, that we went to the same place for medical school, and I loved medical school. I actually had more fun in medical school, given that Princeton was a really rigorous place -- and not just academically, but in every aspect. It was a big challenge, but it was an incredible experience. Then medical school is where I really felt like I found what I wanted to do.

During undergrad, I developed an interest in ophthalmology of all things. My younger brother has retinitis pigmentosa as well as my grandfather. It skipped me, being X-linked, and thank God or else I wouldn't be doing what I'm doing now. I spent a couple summers doing research on ophthalmology in undergrad, but then once I got to medical school, I found that ophthalmology was not the path that I wanted to take. Then I was all the way open.

Dr. Barr: What was your clerkship experience like?

Dr. Meza: I started to get interested in either emergency medicine or surgery. The emergency medicine thing faded very quickly. I just felt like there was very little direction within that field. I didn't ever feel like they made anybody better. Then I started to look at surgery. The idea of surgery seemed very interesting. I thought a little bit about anesthesia, and again I didn't like that you didn't really develop a relationship with a patient.

I found that I started to like the idea of an operation. I liked taking care of sick patients. I found that I like big operations. I got interested in neurosurgery and pursued that for about six months as a second-year medical student. I didn't have the drive to do that. It just didn't grab me that much.

Then I became interested in pediatric surgery and transplant surgery and neither of those really grabbed me. We ended up having a young faculty member, who had

done his cardiothoracic surgery fellowship at the University of Washington, come on staff who was very engaged with the medical students. Dr. Rishi Reddy.

He is a general thoracic surgeon still at the University of Michigan. He was very involved with the medical students and introduced me to cardiothoracic surgery and said, "If anybody's interested, come into my operating room." I emailed him. The day that I was shadowing him, the cardiothoracic surgery fellows had a visiting professor of some sort. I was his first assist as a second-year medical student, and we did a VATS pleurectomy, we did a wedge resection, and maybe it was a decortication was our third case. I got to put in port sites as a second-year medical student. I got to make incisions, and from then on, I was hooked. That was it.

I was going to be a surgeon and cardiothoracic surgery just had grabbed me. I thought these were sick patients, these were big operations. I'd always found the heart interesting. I found pulmonary physiology interesting. It seemed like this is it, this is the direction.

Dr. Barr: What did your dad say? Here he is a pediatric anesthesiologist, and his son wants to go on the other side of the curtain into surgery?

Dr. Meza: He was always very supportive. When I was applying into surgery residencies, he said, "I just want you to know what you're getting into."

Dr. Barr: [laughs]

Dr. Meza: He's always been nothing but supportive. He thinks it's great. When I ended up matching, he said you've always had a surgeon's personality.

It was great to have his support and my mom's support. My mother is a neonatal ICU nurse as well, so pediatrics runs in the family. My mentor, when he heard about my interests and I said, "Transplant didn't really do it for me. General pediatric surgery didn't do it really for me." He said, "Why don't you look at congenital heart surgery?"

Dr. Barr: This is still in medical school?

Dr. Meza: This is still in medical school.

Dr. Barr: Your mentor is Dr. Reddy?

Dr. Meza: Yes, and then when I was a third-year medical student on my pediatrics rotation, I spent a month on the pediatric cardiology service, which I really enjoyed. The first operation I scrubbed in congenital heart surgery was a heart transplant in a six-week-old that I had been taking care of. It was the most amazing thing I'd ever seen. Right then and there it's, this is what I have to do with my life.

Dr. Barr: How did you shape the rest of your medical school career to fit in that trajectory?

Dr. Meza: I had my surgery rotation right after- it was January and February of 2011. My first month was at one of the private hospitals, just outside of Ann Arbor in Ypsilanti. It was bread and butter of surgery, and I just threw myself into it and just really enjoyed it. Got to see everything there from Whipple, distal pancs, thyroid surgery, emergency ex-laps. I took a lot of call. I told the residents and the attendings that I want to be a surgeon. I just really threw myself into it.

I remember a couple of days when we had bad snowstorms in the middle of January in Michigan. They were short-staffed on nurses or whatever. I got to step up a level, and I was doing almost more like a sub-I level and just really enjoyed it. Then I had general thoracic surgery at the university hospital in February, which I loved. Particularly lung surgery. They do the lung transplants at Michigan. I scrubbed a bunch of lung transplants, really enjoyed them.

I have a particular memory of one of the fellows, who had been in the army, had been a Green Beret actually. We had to do an emergency paraesophageal hernia repair on a Friday night. He and I did most of the case together. He was letting me make an incision. He was taking me through opening the chest, and these were really fundamental experiences that really solidified that this is the direction that I wanted to go.

Dr. Barr: Michigan has a terrific surgery program. What made you decide to look elsewhere for your residency training?

Dr. Meza: I wanted a different experience. I wanted to see how things were done elsewhere. I wanted better weather. I think it was mostly just I wanted to go somewhere I had never experienced before.

Interviewer: Did you consider I-6 programs at all?

Dr. Meza: I did. There were very few. I think there were 12 overall when I was applying to residency. They were one spot mostly, and there were only a couple that were suitable for people who wanted to go into a big-time academic type of practice. I knew when I was applying for my surgical residency, I wanted to do academics. I wanted dedicated research time, and I wanted a residency that would prepare me well for not only cardiothoracic surgery but also congenital heart surgery.

I even had one institution that I interviewed at say to me, “this is not the place for you. We are not equipped to handle those desires.” That was something I appreciated. I gravitated toward programs that had strong relationships between cardiothoracic surgery and the general surgery programs because there was definitely some hostility to applicants who were either dual applying or that was their primary interest.

The idea being, "Why should we even train someone who's not going to stay in our field?" I heard that several times, even a little bit at Michigan. That's not the

experience that I wanted. I wanted to go to a place that was used to training cardiothoracic surgeons, and Duke ended up being high on the list of those places.

Interviewer: What was Duke's reputation at the time when you were applying?

Dr. Meza: As a?

Interviewer: As a training environment?

Dr. Meza: Incredibly rigorous but top-notch surgical program. When I matched, several of my mentors said, "You're going to work really hard." I said, "Great, I want to go to the hardest place I can. I want the best training. I want to be challenged in a way that I've never been challenged before."

Interviewer: What year did you start and who was in your intern class?

Dr. Meza: I started in 2012, and my intern class consisted of Linda Youngworth, Ehsan Benrashid, Adam Shoffner, Patrick Upchurch, Zhifei Sun, and Jina Kim.

Interviewer: A little different than the cohort with whom you're graduating.

Dr. Meza: Yes.

Interviewer: What was intern year like at Duke surgery in 2012?

Dr. Meza: It was old-school. It was a challenge. I felt like I didn't have a name for a year. I was the intern. My chief class was the class of all women that graduated. They were hard on us. It was a vintage experience. It was very different from how things are right now.

Interviewer: What are some of the differences between your experience and the current intern experience?

Dr. Meza: I think the rigor, the knowing your place to a very extreme extent, the not having a name. That's something that I've obviously remembered and tried to change. The lack of patience with junior residents was very different.

You did not operate as an intern, hardly at all. I may have done, I think I logged 75 cases as an intern. I probably missed some, just being intern-year and everything. Maybe the max number of cases I did as an intern was a hundred cases, maybe. I would say probably not even. I think it was probably 80 max.

Interviewer: Compared to today?

Dr. Meza: I know they have to get 250 and in the first two years, and I know many of them are getting many more. The APP help was zero. The blue services were one service. There was one intern on it. I remember that was a particular crucible to go through. The blue attendings were very different in terms of demeanor and the

people who were there. That was August of my intern year, and that was, wow. Kevin Shah was my fellow, and he and I both have PTSD from that month.

Interviewer: [laughs] Any good stories from intern year?

Dr. Meza: Oh, I have good stories from my intern year. I think the best story that I have is, well, I know it just was a collection. There were four of us who had major, either life things or had major incidents happen that really pulled us together and really shaped our first year. I remember early on, Patrick Upchurch getting perforated appendicitis and having such a bad ileus that he ended up on TPN, and my classmates and I would go sit with him. He was admitted on 2300 and we were watching the London 2012 Olympics with him.

Interviewer: Did they make him work on TPN?

Dr. Meza: No. I remember him walking around the hospital. We got him scrubs so he didn't have to wear a gown. I remember him walking with his IV pole and his TPN on 2300. I remember also that month, Linda Youngworth, a family member of hers got quite ill and she had to depart very suddenly, and I remember losing two out of my four days off during my intern year experience on blue.

Interviewer: In her interview, by the way, she brings it up and is very grateful to everyone in her class. She still remembers the outreach that you guys gave her.

Dr. Meza: Oh, yes. It was just, of course, there was no thought of anything, but it was a long, tough month with only two days off. [laughs]. I remember it was a very hot summer. I remember walking into the hospital before five, around five o'clock in the morning, and it being 85 degrees. Because I lived walking distance at one of those apartments. Then I remember it being the same temperature at nine o'clock at night, walking home. These things are just burned into my head.

I remember also my intern year, one of our prelims had a very severe incident when she was delivering a child and ended up in our SICU for a time.

Then, when I was just starting at Durham Regional in November of 2012, I was the night intern and there was a cardiac arrest at Specialty Select, the rehab unit just off of the surgical ward.

Me being the good intern that I thought I was, I walked over to help, and when I turned the corner to that ward, there was a nurse directing me down, like I was an airliner on a runway, saying where the patient was. I walked in and I was the first MD to arrive, which was quite an experience as just starting fifth-month intern. I started it, and then within about two minutes or so, one of the ICU physicians arrived. I just started helping out. It was a very small room, cramped room.

We coded the patient for 25 minutes, and we were on our last shock that we all had agreed upon. When the person who was manning the defibrillator hit the button to

shock, a large flame erupted over the patient. Then the bedding caught fire as well, which just ignited panic in the room. I remember elbows in my back and I thought, "I got to grab a blanket and get this fire out." I felt like I'm was going to be knocked over if I don't get out of the room, and people panicked.

The fire alarm went off, the sprinkler went off. People were running away from the room. Between the bedding being on fire and the sprinkler going off, it created a lot of heavy smoke. The patient was dead already, we knew that. Because of the heavy, heavy smoke that was coming out, the ICU physician and I realized we needed to get the rest of the patients off of that ward.

We started going into every room and pulling these patients out and directing the remaining nursing staff. I remember some of the nursing staff from the surgical ward coming to help out, and one of them running in with a fire extinguisher -- we just said it's too late for that. We ended up, in probably less than 20 minutes, pulling around twentyish patients, many of them vented, out on to the floors of the surgical unit, just out into the hallway.

The fire department took probably 20, 30 minutes to get there. There were nurses standing next to these patients hand bagging many of them, I remember. I have asthma, and I remember coughing quite a bit by the end of this, because we just had little masks over our face similar to what we're wearing around the hospital now. I just remember starting to cough quite a bit to where the ICU physician sent three of us down to the ER because basically, we were just weren't doing well, I guess.

By that point, they had started to bring some of those vented patients down to the ER and brought some of them to the ICUs as well. The ER started to treat it as almost a mass casualty event. I remember getting asked questions about medical history and allergies and they wrote it out on a piece of paper and paperclipped it to my scrubs that I was wearing.

They put me on 100% oxygen. They put me on albuterol, continuous. I remember the ER physician who I have seen since, when I was a senior resident there, told me that if I started to de-sat, they were just going to intubate me. I was like, "Okay." One of the things I remember saying was, "You have to call my senior resident," of course.

Interviewer: Who was your SAR at that time?

Dr. Meza: Ryan Turley. Ryan Turley comes in half an hour later, and I'm on the face mask and everything. They had given me some whopping dose of steroids, 100mg of methylprednisolone or something like that as well. I'm all jittery and everything. Ryan Turley in his great East Texas accent says to me, "Jim, what the hell you do here?" I'm trying to tell him and he just took over with everything. He took the intern pager, and he called one of the other interns and they arranged coverage for me for the next night. They just figured it out.

Three and a half hours later, they asked me, "Are you okay"? I said, "Yes. I don't think I need to come in. I can leave here and everything." Ryan wouldn't let me leave. He wanted me to wait till after rush hour to drive home. He said, "Why don't you just sit in the little residence area up there?" I said, "I've had a huge amount of albuterol and steroids. I am way too jittery. I can't sit still." I ended up rounding with them, just to walk around and stuff, and then I ended up going home. That was the day of the election in 2012.

I remember going and voting that day. I remember watching all the coverage, because I couldn't sleep and everything. I ended up taking one night off, then I went back to work the night after. I remember Dr. Pappas called, he was the interim chair at that point. Danny Jacobs had left. He announced that he was leaving in August and he was gone by October or something like that. Then I remember Dr. Pappas calling me. I remember Kyla Bennett was the admin chief at that point, and Kyla Bennett had graciously started some rumors that I started the fire there. I wasn't real thrilled about that.

Interviewer: Rumors that still persists.

Dr. Meza: Yes, they do.

Interviewer: Thanks to Dr. Bennett, but you survived?

Dr. Meza: I did.

Interviewer: Good.

Dr. Meza: I have a heck of a story from it.

Interviewer: Yes. I heard it made the news.

Dr. Meza: It did make the news.

Interviewer: Were you named in those news stories?

Dr. Meza: No. I was one of several Duke employees who were injured or something like that.

Interviewer: It didn't mention you heroically rushing in to save the other patients?

Dr. Meza: No.

Interviewer: Of course not.

Dr. Meza: I did have to give a statement to police. I remember that.

Interviewer: Really traumatizing event intern year.

Dr. Meza: It was quite an experience.

Interviewer: Fortunately not repeated.

Dr. Meza: Yes.

Interviewer: You finally finished intern year and got to be a JAR.

Dr. Meza: Yes.

Interviewer: Some people say that JAR year is the hardest year of residency.

Dr. Meza: I would agree wholeheartedly with that.

Interviewer: Some people say intern year is the hardest year of residency. Why do you feel the JAR year is so challenging?

Dr. Meza: You have a whole new set of responsibilities. I feel most of the attendings or senior residents don't care about who you are as an intern, and then you're actually in the program as a JAR. Then it's a whole another year of "prove it." There's a lot of responsibilities. There's some very tough rotations.

I tell the rising interns in the last several years, I tell them, anything that an intern can't do that needs to get done, flows downhill to a JAR. You do a lot of different things, and there's some really rigorous rotations -2222 of course. That's the real crucible of being a Duke surgery resident.

Interviewer: How was the VA experience when you went through it as a JAR?

Dr. Meza: Oh my God, probably the worst month of residency.

Interviewer: Why do you say that?

Dr. Meza: We didn't have any of the APPs to help out. It was highly dependent on who your chief residents were. If they were motivated to help you or not, or even fulfill their own responsibilities.

Interviewer: Who were your chief residents at the VA?

Dr. Meza: Assad Shah was the general surgery chief and I think it was Giorgio Zanotti was the vascular resident. You were just in charge of everything there. It was the first time you'd ever made an operative schedule. The number of patients that you had to keep track of in terms of their workups, and in terms of their treatments, running the clinic was incredibly difficult. It was the first time we're really dealing with something like Q3 call. You did some operating there.

Dr. Seigler was still going, was still operating, and was still running the multidisciplinary conference. It was always a great experience when he pulled out a

folded up piece of paper from his white coat pocket and asked you how Mr. Wilson was doing. You had never received sign out or never heard of Mr. Wilson, and you're scrambling to answer him.

Interviewer: Did he ever ask you how far away the patient lives?

Dr. Meza: Oh, yes. I learned North Carolina geography from Dr. Seigler at the VA as a JAR.

Interviewer: I used to, next to every MDC patient, I'd write down their zip code, the city, how many miles away they lived.

Dr. Meza: I learned that. I have passed that down to other general surgery JARs, that you better know where the patient lives.

Interviewer: Does he still run MDC clinic, Seigler?

Dr. Meza: No. He doesn't come around very much anymore.

Interviewer: It's too bad. Then you escaped the clinical world and went into research. You were still interested in cardiac surgery?

Dr. Meza: Yes.

Interviewer: Still interested in pediatric cardiac surgery?

Dr. Meza: Yes.

Interviewer: How were you able to shape your research experience to facilitate that career trajectory?

Dr. Meza: There was very little guidance to the junior residents for picking your lab when I was going into the lab. I did not really want to have a basic science experience, given my experience in my undergraduate time. I had seen that some residents have been very productive going through the clinical research pathway through the DCRI, the clinical research training program there. I became interested in that.

I ended up kind of developing a unfocused research plan working with Mani Daneshmand, Chetan Patel, and then with Matt Roe being in charge, the cardiologist in charge of the clinical research training program. He ended up being a very good mentor. I started that and really I had designs on building an ECMO database and had some questions that I wanted to answer, but things took a turn when I finished my JAR year on June 30th.

Then several days later, I left for my first vacation since before starting intern year. My intern year I had two weeks off September. Then I didn't have a vacation until October of my JAR year, so it was a long stretch. Then I had a two-week vacation

planed, then while I was away, one of my congenital heart surgery mentors here, Dr. Jake Jaquiss – he's now at Children's Medical Center of Dallas -- forwarded to me the call for applications for the John W. Kirklin/David Ashburn Fellowship, which is run through the Congenital Heart Surgeons' Society. He said to me, "If you're truly interested in a career in congenital heart surgery, you need to apply for this." I had just finished up a couple of really tough years and didn't have the most confidence in the world.

I said to him, "I'm I even competitive for this?" He said, "Well, you know, the Wayne Gretzky quote, "You miss 100% of the shots you don't take." I took it really seriously. I put together an application I was very proud of, sent that in late July, early August, as I was putting a plan together for research with the DCRI and starting classes up from that master's program. Then I didn't hear anything until the first week of October. I think it was October 10, probably something like that.

I heard back from the Congenital Heart Surgeons' Society and they had said that there was going to be an interview and things like that. I was like, "If I can get an interview, I guess I'll be happy." Then they called me up and they said, "We want you to be our guy." I was really surprised and taken aback, and I said, "How long can I have before I need to tell you?" They said, "Tonight." I was like, "Oh, okay."

They said, "No, will give you till the end of the week." I said, "Yes. I just need to talk to my program and everything." I said, "I'm really interested." But I was off-cycle for it. I would have to extend my research time by a year to be able to go. I called up Dr. Migaly and I spoke with Dr. Kirk, and they were nothing but supportive. They said, "Yes. Go represent Duke well, and you will, of course, have a spot when you come back."

That really changed the trajectory of my first year of research. I contributed to some projects. I was lucky to have a couple of good co-residents to work with. Brian Gulack was a year ahead of me at the DCRI and had me involved in a couple of projects. It was good to work on those things. I continued with the classes, but it really shifted my focus to learning the basics of data analysis in clinical research and statistical methods. Then also reading about congenital heart surgery in a really rigorous fashion. I bought a couple of textbooks, read those. I read every paper that the Congenital Heart Surgeons' Society has ever published. Then, in the spring, I really started the process to go up there, which was a big process.

Interviewer: Where was it located?

Dr. Meza: In Toronto.

Interviewer: Are there differences when you had to go across the international border?

Dr. Meza: I did apply for a work permit. Even just figuring out how to live there was a big deal. I was, I want to say, the seventh or eighth CHSS fellow. Every fellow had

done it a little bit different. Every fellow had had really substantial, massive success in this fellowship. It was just a real no brainer for me to go up there.

Interviewer: No pressure either, huh?

Dr. Meza: Right.

Interviewer: Did they pay you for salary support during this time?

Dr. Meza: They paid my salary and everything, yes. Living expenses and everything like that was all me. Then I was paid in Canada, so I ended up taking probably a quarter to a third pay cut going up there, which was okay. I was able to live up there.

Interviewer: What was your experience like up there?

Dr. Meza: It was probably the best job I've ever had, other than being a surgeon. It was everything and more than I could have asked for. Honestly, it was a life-changing experience. The mentorship was incredible. My primary mentor was Dr. Brian McCrindle, who's a cardiologist. He's a pediatric cardiologist and a Professor of Pediatrics. As well, he is a very well-trained investigator in clinical research. He has been involved with Congenital Heart Surgeons' Society really since he started on faculty at the Hospital for Sick Children.

The Hospital for Sick Children is the busiest hospital in Canada for congenital heart surgery and probably one of the top three institutions in North America, along with Boston Children's Hospital and the Children's Hospital in Philadelphia. They're a historic hospital in the field. He was one of my primary mentors along with Dr. Christopher Calderon. He was the chief of surgery at the Hospital for Sick Children.

Interviewer: What's their incentive to take this random guy from Duke, invest hundreds of man-hours and thousands of dollars of resources to train you?

Dr. Meza: The purpose of the fellowship is to identify up and coming surgical residents who have a passion and basically a commitment to going into congenital heart surgery.

Interviewer: This is only for people in surgery? People who want to go into pediatric cardiology are not --

Dr. Meza: Since it's run through the Congenital Heart Surgeons' Society, it's only for surgical residents. They look to identify the most promising residents of the application cycle. They feel that it's very important to have surgeons who are part of the investigative teams, asking questions, and designing the studies for these children.

Congenital heart defects are the most common birth defect in children. Several of them are among the most expensive or most expensive birth defects that we care

for. The surgical perspective, considering that half of children who are born with them require an operation, is critical.

To have a cadre of well-trained surgeons who can not only ask these questions but even perform the analysis and understand all levels from the clinical question to the research question, to designing a study, to then actually executing it from a programming standpoint -- it's a resource that the field wants to have and feels is very important.

Interviewer: What were some of the key projects or the highlights that came out of your two years of work there?

Dr. Meza: One of my major interests has always been in hypoplastic left heart syndrome and other complex malformations that require staged surgical management. The Congenital Heart Surgeons' Society data center is structured around cohorts of children with specific congenital heart diseases. We were primarily investigating -- there were 4 active cohorts enrolling patients -- but we had 10 while I was there, as there were several historic cohorts as well.

So I was interested primarily in the cohort of hypoplastic left heart syndrome and its related malformations, but we were also investigating atrial ventricular septal defect and anomalies of the coronary arteries as well as tricuspid atresia. My primary projects were asking about what is the optimal timing in a second stage operation after the Norwood operation for hypoplastic left heart syndrome. I worked on a project with echocardiographic markers of ventricular balance in atrial ventricular septal defect, and then I began a project to develop a continuously updated mortality estimate after the Norwood operation as well.

Then I also pursued a master's degree from the University of Toronto that was paid for through the Congenital Heart Surgeons' Society while I was there.

Interviewer: What skills do you feel like you got out of this fellowship that you didn't have before you entered?

Dr. Meza: I received a really robust education in survival analysis and advanced survival analysis, and programming as well. I can do all my own analyses. Then, I was a fellow in the division of cardiovascular surgery there. I was going to other clinical conferences. I was not clinically active. I did not operate while I was there. That was one of the best things - I was completely, 100% research. That was a highlight, and then going to these clinical conferences, being immersed at a top, world-leading institution for congenital heart disease was an incredible experience.

Going to all of their clinical conferences, their M&M, their heart failure, and heart transplant listing conferences, those sorts of things. Then, just the resources that I had available to me. I had a master's level statistician sitting next to me. I had two research nurses who abstracted the data. The structure of this was that the participating institutions sent the operative notes, the histories and physicals, and

then we extracted all our own data. When I needed specific data for a specific project that we didn't have, I designed a data abstraction strategy with our research nurses.

Then we had a couple of administrative support people as well. We would follow up every year these children from a quality of life standpoint, a clinical standpoint, and so I had 10-year data on some of these children. Some of them who had started enrolling in the late 1980s, we had nearly 30-year data from. It was a dream come true for someone like me.

Interviewer: Pretty remarkable. Then you had to come back down to earth to Duke Surgery.

Dr. Meza: I was ready to operate again.

Interviewer: What was it like to just jump into a class where you knew them because they were a year behind you, but it's not the same as going through intern year with a group of people where you really bond?

Dr. Meza: Our class is a big mix. Once Dr. Kirk had started, he started right at the end of my JAR year, I was one of the first to start to move around classes and to extend my research time. Then I think Jeff Sun ended up extending his time. Then he dropped into my class. I know there were a couple of people who were in the class that I dropped into who then extended their time and fell back a year. I had already been very close friends with a couple of members of the class I was dropping into. During my research time, I became very close with David Ranney and Tunde Yerokun. Dave and I had actually been in medical school together. We were a year apart. We knew each other, we weren't close friends, but we became good friends when he came here and joined Duke Surgery. Then during research time, we became very close. Then, I'd actually known Tunde before as well. He was roommates with my best friend from high school when they were at Stanford together.

Interviewer: Fascinating. Small world.

Dr. Meza: Then I had obviously known Alice. I knew her when she was a sub-I and then when she was an intern and I was a JAR. When I was an intern, I remember when Hanghang was a JAR when she was on call. We were quite a mix of different classes.

Interviewer: What was SAR-1 year like, and were you guys going to Raleigh at that point in time?

Dr. Meza: We were. SAR-1 year for me, I started back on July 1st. I didn't even start back early in June because I was finishing. I defended my master's thesis, something like less than a week before coming back. I had moved back here, and I was going back and forth from Toronto. I ended up flying back two or three times between Durham and Toronto in the last month. I had just wanted to try and hit the

ground running as much as I could. I remember practicing FLS during that time to try at least do something with my hands. Since I had been away in Toronto, I hadn't even been taking 2222. I had been totally away from the clinical world, but I was ready.

By that point, I really missed operating, I missed taking care of patients. I love research, and I see it being part of my career from now on, but I was ready to care for patients again. I came back onto the endocrine rotation, which I think was a good one to come back onto. Then I went to Raleigh the second month. That was an experience. It was a great experience. I really enjoyed it. I think I did the most amount of cases of any month that month. I did 75 cases, but I just said, "I'm doing everything. I'm coming in in the middle of the night, I'm doing everything." I really enjoyed SAR-1 year.

The exponential growth in your surgical skill that you see and in your ability to manage a service, it's just so gratifying to see that rapid growth. I'm guessing you can relate.

Interviewer: Yes.

Dr. Meza: You do great rotations. I remember the Durham regional was a challenge with how busy it was, but also I particularly enjoyed working with Dr. [Ellen] Dillavou. I think she challenged me in a way that no attending had really challenged me, but I appreciated it. I appreciated how much she invested in me, and how she didn't just demand competence. She demanded excellence, and she demanded dedication. That really resonated with me. It was rigorous, but that's what I wanted. That was a particularly enjoyable year.

Interviewer: How was SAR-2 year?

Dr. Meza: SAR-2 year, the improvement became more linear, and it really became about how can I do as many cases as I can. I felt it was a very rigorous year. I felt that it was a year that I had to invest myself to really go from, "I can do this," to someone who's good at what I'm doing. It felt more like I needed to get the reps. It wasn't like that exponential growth and it was fun. It was more of like, "I need to dedicate and I need to practice." I did just a massive number of cases that year.

Interviewer: You at an abnormal number of months on vascular surgery that year?

Dr. Meza: I did. I had three full months of vascular surgery at the university hospital and a month at the VA.

Interviewer: It worked out well for someone going into cardiac surgery, but how did you end up with so much vascular?

Dr. Meza: A couple of my classmates had little interest in vascular and only wanted to do a month. I knew that I wanted to do things that were relevant to my education. I

remember I did two in a row with that q2 call. It was exhausting, but I did a ton of cases and became very comfortable taking care of those patients. I got to know several of us faculty very well.

I did my two months of pediatrics. I really enjoyed those months as well. I think I just tried to do as much as I could. I just really enjoy taking care of children. I enjoyed the fine technical work, especially in neonatal and infant surgery.

Interviewer: Then, chief year, what's chief year been like for you?

Dr. Meza: Chief year has been an interesting mix. I've done a lot of hepatobiliary, and mainly that was because of, one, Dr. [Peter] Allen joined the faculty and I heard of his reputation, and then I got to work with him for a week when I was a SAR-2. I think either Linda or Ehsan was on vacation and I got moved from Dr. Thacker’s service on to the Pappas / Allen / Blazer service for a week.

Interviewer: Good trade.

Dr. Meza: It was. I was particularly impressed with Dr. Allen, and I have always liked Dr. [Trey] Blazer, and Dr. [Ted] Pappas is well known as a great resident experience, and so I sought as much time as I can on their service, and that was time well spent. I think Dr. Allen is one of the surgeons along with Dr. Dillavou within the program who have profoundly affected how I care for patients, how I approach operations, how I execute operations, my technical skill, and even just from a mentorship -- from how I see myself as a surgeon.

I was able to have a month on the congenital heart surgery service with doctors Turek, Lodge, and Andersen. Dr. Turek started really right when I started back from the lab, and he and I have gotten to know each other well. He's been an invaluable mentor to me.

Interviewer: You're talking a little bit before about the projects you're working on with him. Do you want us to say that for the record?

Dr. Meza: He has been an incredible research mentor to me, incredibly supportive of me starting a congenital heart surgery outcomes research group, and we're really looking to build Duke into almost the CHSS data center south. Our goal, and I hope in the next three years to accomplish it, is to build an outcomes research operation on the level of Boston or Toronto or Philadelphia. That's the goal that we have set for ourselves.

Interviewer: Is that more challenging since we don't have a dedicated children's hospital like those other centers?

Dr. Meza: Yes, I think it is.

Interviewer: How are you overcoming that obstacle?

Dr. Meza: One, having great mentorship, and Dr. Turek is very good at working within the children's hospital, in the children's heart center, by connecting me with the people that I need. I've worked with Dr. Kirk, and he has connected me with resources that I have needed as well, and then finding other residents. That's essential to have, motivated residents to work with, and to build a group around a common idea.

To build a portfolio of success to then start to apply for funding and take it from a mom and pop shop of just a bunch of us doing some work to then a funded group that has statistical support, that has logistical support, and that's really where we are right now, is taking it to that next level. He runs the translational and basic science portion of it as well. He is an invaluable mentor to me.

Interviewer: Your chief year has also been interrupted by COVID-19; how has that virus and that pandemic affected your chief year? You took an early leadership role since you happened to be admin chief and then extended that term reorganizing the residency to respond to this unprecedented pandemic.

Dr. Meza: COVID-19 was a transformative event. It was something I had been following just out of interest of what was going on in China in January and February, and then once things started to look serious in March, I started to talk in more detail with Dr. Kirk, meeting with him every morning, with Dr. [Cynthia] Shortell, with Dr. [John] Migaly, and starting to think about what could this look like. The early days were some of the most stressful of residency. The only level of stress that I can even compare it to was something that I've lived, is probably 9/11.

I was 15 when 9/11 happened. I was a sophomore in high school, that feeling of not knowing what's next. We don't know what's going to happen next, not knowing how bad things were going to be, that feeling of the unknown, and that things were out of control and you didn't know what to do, and there was a real feeling of nobody knew. We'll see how history judges the response, but I had a real feeling of no one's coming to help us. I had a feeling of if I don't take ownership of this residency and start to push hard to make changes to protect not only our residents but our patients as well, that I would be failing in my role.

There was a lot of paralysis. There was a lot of people thinking, and there was a lot of almost magical thinking of, "Oh, it's not going to be that bad." As just an approach to life and to surgery, I feel like my approach is prepare for the worst and hope for the best. When it became obvious that major metropolitan areas were seeing uncontrolled spread, that physicians were getting sick, that hospitals were getting overwhelmed, I began to push very hard to make changes to protect our residency, to be able to protect our patients.

Interviewer: Can you describe for the record a little bit about the platoon system that you implemented? Then other hospitals have come up with similar systems for the residents. Were you in communication with residents elsewhere or is this de novo?

Dr. Meza: I was not in communication with them elsewhere, no. This was an original idea of mine because I felt that I had two directives, both from myself and then from Drs. Migaly and Shortell who I was primarily working with this. We need to be able to provide excellent patient care, we need to be able to work with the attendings, and if residents weren't needed in the hospital, we did not want to have them. Shortly after we designed this, the stay at home order went into effect. We anticipated that was going to happen. Just from our position being a major medical center, we had advanced notice of this sort of thing. We knew that there were discussions.

The platoon system came about as a way to meet all three of these goals. That was a way to meet them as well as to protect the residents. I knew that there would be resistance from some of the residents and from some of the attendings as well, but that's expected anytime you want to make a change, that's the greatest way to make people angry. This was a substantial change, I don't think there's ever been anything enacted like this in our residency ever.

That's why we brought the research residents back as well, because there are resources that we could use. Especially in comparison to the junior residents, they have a little bit more experience so that we could continue to provide operative coverage, because things hadn't started to wind down quite yet, and then over the first couple of weeks of that, the operative volume really wound down.

Interviewer: Just for the record, what is the platoon system?

Dr. Meza: What we ended up doing was consolidating the services. There were two versions: in March and in April. We designed it in mid to late March and enacted it on March 21st. Because we had 11 full days in March. We had it rotating every three days, which we found was very quick. We consolidated the surgical oncology services into one, that we had under a chief or a fellow, and then we had a chief level resident on ACS and on trauma, since those were the two services that were going to continue to run as the general and surgical oncology volume started to wind down. There were chiefs rounding on those. They were either SAR-2, chiefs or fellows.

Then there was a SAR-1 rounding on the pediatric surgery service. There was a JAR who would take 2222 and 7704. We made it old school. They were covering both the hospital inpatients consults and the ER for consults and traumas. Then there was an intern assigned to each. That was the day group. The night group was basically the same thing as we had before. Then there was a group that was at home, in reserve if people started to get sick.

We wanted to maintain a reserve if people ended up exposed, people ended up coming down with the virus or something else like that. At least as of now, I'm very proud that none of our residents have been diagnosed with COVID-19. When I rolled out the schedule, I told the residents that it's possible that this is an overreaction, that we may have no patients in the hospital with this disease, that no residents may get sick or no residents may need to take time off, but that it's highly unlikely, and that if

that happened and this was an overreaction, then I would consider it an unqualified success.

We've had to deal with some residents going out for exposure or testing, but as of now, no one has gotten it, which I'm very proud of. For the most part, it was very well received by the residents. There was a little bit of unease with the amount of change. There was some growing pains. I think the faculty had the hardest time adjusting.

Interviewer: Any specific feedback that they provided?

Dr. Meza: We knew that rotating every three days was going to be tough, but we almost wanted to go through it as a dry run in March because we knew things were going to get worse in April, and then we switched it to an every six-day rotation in April that we've continued into the first half of May.[1] That was the main thing, and then we really settled into it in April, especially as things became more serious in the state with the number of cases, as the number of cases of the hospital increased, as the number of cases in the emergency department increased, as there have been more patients in the intensive care units as well.

I knew that I wouldn't be able to come up with a perfect solution, but Dr. Migaly and Shortell were very supportive of this. They seem to be very happy with it.

Interviewer: What was it like to be a leader during this time? It happened by chance, but it seemed to work out pretty well for everybody.

Dr. Meza: Well, I viewed it as an opportunity. I viewed it as: this is my chance to show how much I've learned. This is my chance to be tested in how well can I deal with this. It was a lot of work at the beginning. It was so much work. I was lucky that I was on Dr. Mantyh's service and he wasn't very clinically busy at this time and I wasn't caring directly for very many patients. Of note, Adam Shoffner was my co-resident on the gold service, and I had such heavy administrative responsibilities. I asked him to care for my patients, and he happily did. I was essentially 100% administrative for two and a half, probably three weeks.

It was designing and implementing strategies, and then it was: what problems are going to come up, what issues are going to happen. How are we going to need to work with the other surgical services, cardiothoracic surgery, urology, plastics. how are we going to work together when we have their residents rotating on our service, or what are we going to do when residents get sick? How are we going to make sure that residents get trained in what they need to get trained for? Then making sure that all the attendings have the resident coverage. I worked a lot with the division chiefs, Dr. Allen, Dr. Agarwal, Dr. Rice, and Dr. Shortell.

It would just be, what's next? What's next? What's next? Even when I started to have time out of the hospital, it was still call after call, and then working with the

[1] Editor note: residents returned to their normal schedule on 15 May 2020.

senior residents at Duke Raleigh and Duke Regional. I know you and I worked together, it was calling you guys just about every day, it was figuring out how are we going to do that.

It was just, "What's the next problem? How are we going to solve it?" Making sure that everybody was getting what they needed from the attendings down to the interns. It was, how do I keep the trains moving? How does everybody get to where they need to get to? It was just total dedication to making all that work. It was checking in with interns and making sure that they're doing okay. It was walking into the bunker; it was walking through the operating rooms. It was all of those things.

Interviewer: It seems to have come off quite well in terms of result.

In addition to the COVID response, your chief class is known, at least among the junior residents, of having been proactive in trying to solve some of the challenges that our residency has faced. Can you describe that process, some of the difficulties or deficiencies that you guys took on, how you set about working with people to fix them, and then some of the progress you guys have made?

Dr. Meza: I think the goals of our class were to restore a little bit of the old school values of ownership that we all started with, not bring back everything from when we started. It was a very different program back then, but that feeling of responsibility, we wanted to really highlight and to model that well. We also wanted to be very responsive to the rest of the residency. We wanted the residents to feel comfortable with coming to us with questions and concerns while also feeling like they needed to solve things and that patient care was something that needed to be done with real ownership. But we needed to model that as well, that we were going to take ownership of the residency, and we were going to be responsive, and we were going to be seen on the wards, and we would produce results.

I think one of the major projects that we wanted to take on was working with the trauma and acute care surgery service, as there have been some major issues with that service in terms of organization, relating to residents, attending responsiveness. Those are big issues. We didn't want to come across as nasty or entitled or vindictive, because none of this was personal problems with attendings or anything like that, but there were just things that were causing real problems with the delivery of care and with the resident experience on those rotations. I think we solicited a lot of feedback from the residents. We just said, "We want to hear from you," and we just said, "Send us the emails. Stop us in the hall, tell us what we need to know." This was talking to Dr. Kirk, this was talking to Dr. Shortell, this was talking to Dr. Agarwal, developing specific areas and policies to implement how can we make this better.

That was the major one. We have tried to be proactive in dealing with problems within the residency, as chief residents, as owning the residency. That if there were problems with specific residents, that we were going to talk to them. They weren't just going to go to Migaly to get in trouble. We tried to model that behavior. We tried

to be, for example, available to the residents at other sites, if there were issues at other sites, the chief resident wants to know this. I hope that was something that came across.

Interviewer: There's one JAR who left in the middle of the year and one JAR is not continuing on after this, were you guys involved in that at all?

Dr. Meza: The one that left in the middle of the year, no, we were not. That, honestly, makes me very sad. I had real appreciation and real respect for that individual. I'd worked with her many months before, like four or five, and had nothing but respect for her. The one who will not be continuing on -- that is someone who we tried to work with, and that is someone, especially, that I met with several times and tried to put some real time and effort and tried to help that individual. Then it became obvious that surgery was not going to be the right path for that individual.

We did not make that decision. While this was something that we were talking to Dr. Migaly about, that decision was made above our level, which is appropriate.

Interviewer: You clearly had a good time and good experience at Duke Surgery for the most part over the last eight years, but no program is perfect. If you had a magic wand, is there something you would touch and fix?

Dr. Meza: No program is perfect, and knowing what I know now-- Wow, that's a tough question. This is a very rigorous program. I tell applicants directly that this program is not for everybody.

You have to want to be challenged here. If I could wave a magic wand and change something, it would be two things. I would like to continue, at an even greater level, our academic pursuits, especially in terms of faculty mentorship.

Then I think there has started to become an almost private practice-like model with some of the faculty here, who are not involved academically, who have very little if any desire to teach residents. I don't think those are the people who should be here. If I could wave a magic wand, they would be placed in a different role in this institution because I think there's a lot of faculty who are very dedicated to teaching. As a resident, when you have an attending who basically just wants you to do their work for them, or even doesn't do that, who just all you do is stand there during those operations or you don't even have any amount of autonomy in managing their patients and learning from them and them guiding you or their focus is on making their lives easier or making lives easier at the attending level as opposed to the rigors of an academic program, I would love to wave a magic wand and make that better.

It's a very small minority, but it's a minority that unfortunately affects the residency in a fairly substantial way.

Interviewer: Where are you going from here?

Dr. Meza: I will be continuing at Duke, which I am very happy about, in the cardiothoracic surgery fellowship, which is been a goal for a long time for me. I'm very much looking forward to it. I am very much looking forward to working with that faculty, learning from them and learning cardiothoracic surgery -- again, another rigorous program. I'm very happy to be staying in the Durham area. Then after these three years, we'll see where my final year of congenital heart surgery fellowship is.

Interviewer: And you anticipate a career in academia?

Dr. Meza: Yes, in academic congenital heart surgery.

Interviewer: That's great. Well, if the past is prologue, you're going to have quite a successful career with that, sir.

Dr. Meza: Thank you.

Interviewer: Is there anything else you want to put on the record about yourself or Duke Surgery or your time here?

Dr. Meza: Yes, there's I think, another person who I didn't get to mention who has played a role for me at Duke before I even got here, who actually I interviewed with, and that is Dr. Betty Tong. She has been as good a mentor as I could ask for, someone who has also undoubtedly shaped who I am as a surgeon and as a person to this point. I just want the record to reflect the esteem that I have for her, the respect that I have for her, and the gratitude that I have to her.

Interviewer: That's terrific. Thank you very much. I really appreciate your time.

Dr. Meza: My absolute pleasure.

[01:15:24] [END OF AUDIO]