Justin Hentges
All of Us
Oral History

The All of Us Research Program is an ambitious effort to gather health data from one million or more people living in the United States to accelerate research that may improve health. All of Us is working with participants across the country, collecting many types of information over time, and building a database that many researchers can use. This new model could shape how people do research in the future. All of Us will share lessons about what works well with other research programs around the world. The program is supported and overseen by the National Institutes of Health (NIH) and is the result of NIH's Precision Medicine Initiative Working Group of the Advisory Committee to the Director, which concluded its work in 2015.

Condon: It is Monday, September 11, 2023. And I'm joined by Justin Hentges, the current CFO [Chief Financial Officer] of the All of Us Research Program. Today, I'm going to conduct an interview to explore the origins of the All of Us and document it as part of an oral history for the Office of NIH History and Stetten Museum. I should note at this point that while I do collaborate with the Office of NIH History, I'm also the director of management for the All of Us Research Program. Justin, how are you doing today?

Hentges: I'm doing well. Aaron, how are you?

Condon: I'm not bad at all, thanks, ready to wind down and get through the fiscal year. Thank you very much for joining me today. Do you have any questions or anything before we begin with the questions?

Hentges: No.

Condon: Excellent. How did you learn about the Precision Medicine effort, and how did you become part of it?

Hentges: I learned about it while I was working in the Department of Health and Human Services, for the Office of the Assistant Secretary for Financial Resources (ASFR). This was probably sometime around 2015. I had heard conversations about a new program at the NIH that at the time was called the Precision Medicine Initiative. I became involved in the program when, in late 2016, I decided to leave the Office of the Secretary and ASFR and to come back to the NIH where I'd started my career. I was connected with Eric Dishman, who was the director of the program at the time. And so, I had a conversation or two with him. Then in January of 2017, I joined the program on detail and became a permanent employee with the program, I believe, in either June or July of 2017.

Condon: Can you tell me how the All of Us Research Program came to be?

Hentges: I can, to a to a small extent. I was not involved in the creation or setup of the program, the person really to talk to about that at this point that still is with the program is [Dr.] Steph [Stephanie] Devaney, because she was involved in it from the NIH Office of the Director perspective and then from the White House. I do know that Dr. [Francis] Collins wrote an article, I believe it was in 2009, after he became NIH Director, although it may have come out right before he was the NIH Director, I don't remember the exact timing. But in that he talked about the need for precision or personalized medicine and how we can use the advances in genetics and data science to better predict and help folks with diseases and with treatments, etc. So, I kind of knew about that and then knew that was something that Dr. Collins was interested in. I knew Steph was working on the project. Then it, as you know, became part of the President's State of the Union in 2015. All of a sudden, it was a topic of discussion downtown quite a bit. I was lucky enough to be able to get connected with Eric and to be able to come here.

Condon: Yeah, that sounds great. And your perspective is essential. Because the way we build these histories, we have to really get from different perspectives to understand the aggregate whole. It's great that you mentioned Steph, I will be talking with her. I think that your participation is just wonderful, because I do want your perspective here, because you've been a part of the program for a long time. But with that, can you tell me [about] your role during your earlier years with the All of Us Research Program?

Hentges: Sure. I started, like I said, on detail in 2017. My initial role was, I don't even know if we had a title for me when I started, but it was to come in and do long term budget modeling. One of the things that we thought about with this program is, as we added new data types, as we expanded the data that was available to researchers, as we thought about how to get to different types of researchers, how to engage with different types of participants, how to keep them enrolled, that that was going to take more sophisticated budget modeling than kind of traditional R01 programs at the NIH. My initial conversations with Eric were to come in and lead that type of work. I honestly think that there were maybe two days at the beginning where that was my job. Because we were such a small team at the time and there were so many other things that needed to happen, it was "Can you do this?" "Hey, do you have any experience with this?" "Could you actually add this on to your daily work?" Eventually I became the director of finance. Then, at some point, I became the Director of Finance and Operations, and then eventually I became the Chief Financial and Management Officer. And a lot of that beginning stuff was, you know, we get an email, and Eric or Gwynne [Gwynne Jenkins], or Steph, or I would look at it, we'd be like, somebody's got to do this, who's gonna do it, and it was just kind of whomever had some experience or had a relationship with somebody that could get the work done. And so, a lot of my job at the time with the pieces that kind of came in to me and then became, eventually the Office of Finance and Management, were around the administrative functions, and so interfacing with the Office of the Director, Executive Officer and their office and trying to build out that function, but more importantly, how do we work

with them to build up our team here? How do we get people hired? We were under a hiring freeze at the time. We had to work out strategies to work with the new administration on lifting that freeze for our program to be able to do the things that we needed to do. I did a lot of interfacing with our award making partners. When we started the program, we didn't make any of our own awards, we had to work with the National Heart, Lung, and Blood Institute, the National Center for Advancing Translational Sciences, our contracting office, [and] we had to work with the grants policy office. Then there was a lot of interest from the Hill [Congress on Capitol Hill]. And we didn't have a government relations shop. So, we had to work with, which was a really fruitful partnership, the OD Office of Legislation and Policy Analysis. But we needed somebody in All of Us that could keep track of that and understand that scope. And because of my previous work, Eric asked me to take some of that on. There was a lot of collaboration between Steph and me, and Eric and Gwynne—Gwynne was the original chief of staff—as well as the folks that were just coming on.

I mean, it was funny, because it used to be we'd have our team meeting, and there would be maybe 15-20 of us in a small conference room trying to figure out a strategy for these really large issues, and everybody kind of was there at the table and we were just figuring it out. So it was an interesting culture. It was very [interesting], especially with Eric's perspective of having been in tech, trying to bring in this startup culture, this platform-first culture, and more importantly, this participant-first culture. Eric would always say he, even though he had done research, he wasn't the Biomedical Research Scientist. He brought in a very participant perspective, a participant-first perspective, which probably is the reason I'm still with the program. It was so different that our participants were not subjects, they're not people that we're doing something to, they're the reason we're doing this. And that was just such a different perspective. And it was exciting. I remember when I started I kind of was thinking, oh, I've done all this stuff downtown and been involved in all these amazing things. Like, I'm excited to be a government employee who only works eight hours a day. And this program proved to be the exact wrong choice for that. Especially in the early years, it was a lot of work, but a lot of fun, too.

Condon: How many people are on the team meetings that you have now? You referenced that there was 20 people in the room when you used to have these meetings, and you have all hands meetings now, how many people are there?

Hentges: For the entire program, I think when I started it was 20 people roughly. I don't remember the exact number, right. And now I think we have between Feds and non-fed—you would know this number better than I do now. What 275, almost 300?

Condon: There abouts, yeah.

Hentges: Yeah. Which also is fascinating because I used to know every single number. I used to know all of our fed numbers. I used to know them all personally. I used to know all of our contracts; I used to know all of our budget. You know, I knew all of these numbers. One of the things that I have loved about this as we've grown is I

don't know them anymore. I mean, I know in general terms, but I don't have to know all the specifics, which has been just a really unique experience going from having to do all of it to delegating it and having to let go of it. For example, not worrying about our exact headcount right now.

Condon: You really did take it from startup to a larger mid-scale business. That's a great achievement. And you did mention Barack Obama, and he's mentioning the PMI at the State of the Union, you also mentioned support from the Hill. Can you tell us a little bit, or tell me a little bit rather, about how Congress came to support, or Obama came to support, the Precision Medicine Initiative?

Hentges: I wasn't really involved in any of that. From my vantage point, I do know that Dr. Collins made a concerted effort to talk to the Obama Administration, and then to the Hill about the reasons for this program, as well as the Cures Act in general. We have folks on our staff like Kate Blizinsky, who wrote part of the Cures Act, so obviously is a great person for you to talk to as well. I will just say, from my perspective, I think there was a sense of bipartisanship and commitment to the scientific endeavor, and then to the health of the American people that just came together for that act. We had Representative [Frederick] Upton as a major, major sponsor and supporter of the Cures Act and of the program. We had many other folks that were involved. I think part of the thing that I really appreciated was the way that it really was Congress in regular order, right, they had the debates and the discussions and all of that, coming together with a really important compromise that gave us a bill that allowed us to set up this program.

Condon: What is precision medicine? What does that mean to you?

Hentges: I could give you the standard answer that I give every single talk about the right treatment for the right person at the right time. To me, it goes back to Eric's original focus and the focus of the PMI Working Group and all the conversations we've had about putting people first and putting our participants first. And really to stop treating people as statistics. It's kind of the irony of this program that to have precision or personalized medicine, something that can help you as an individual, we need to actually have a ton of data, and do the statistics on that data, right? Do the analysis to find out the different variants and the differences between folks. But to me, it means that when we get down to treatment, and we get down to having discussions with a patient, it's not about the statistics, it's about them as an individual. I think in some ways, it brings some humanity back into science, where we really consider that there are people at the end of this journey, right, and there are people that have not had answers to why they feel the way they do or the diseases they may have, or have tried multiple treatments that have never worked. The goal is to make sure that those folks have the best care possible that treats them as people. So, I guess that's what it means to me.

Condon: Okay, around the time that you joined officially, around 2017, somewhere between that and 2016, the name changed from the PMI to the All of Us research program. Do you remember how and why that was changed?

Hentges: By the time I had gotten to the program, it was called All of Us. I believe, if I'm remembering right, that in the spring/summer of 2016, that was when the name was changed. Maybe not officially, but that was when the discussions happened. My understanding of that is, I mean, quite frankly, PMI sounds like all of the other programs that have happened before. It's a government acronym. It's kind of clinical sounding. I think All of Us really got to the heart of what this program was about it, it was about all of the folks living in the country being able to join this program, contribute to scientific discovery and eventually contribute to better health for their communities. I think that, in particular, the focus on diversity and ensuring that we were working with communities who had been either underrepresented previously in medical research, or quite frankly, communities that had been harmed, whether it had been through unethical research practices, or even just, stigmatizing research, that we really wanted to work with them and build back trust. I think PMI sounded like the old stuff. Again, this is my perception of what I understand the conversations were; I wasn't involved in the conversations, but I think that really spoke to more of the mission of the program versus kind of that dry clinical name.

Condon: Yeah, I understand. I will say that diversity seems to be really a hallmark of our organization, which is wonderful. Listening to your account, inclusivity has always been paramount. When you were working with the program announcement and you were looking within the communities, how did you determine how to involve different types of diversity? How do you target these communities to reach out to engage participants, and to also gain research partners?

Hentges: I think the biggest thing…well, so I have a couple of things. One is anybody who's in the United States, at least at this age, or at this stage, right, 18 years or older, that can provide consent for themselves is able to join the program. The good thing about this is that participants have a choice of how they participate in the program. Like I'm a participant, I've self-identified as one, I choose to participate fully meaning [that] whenever there's a survey, a new survey, whenever there's an email about something I am all in, I'm doing it. For other folks that's not tenable, right, they don't have the time, or the bandwidth to do that. I think that's important to note because it is a little different than some other research programs where you really do have to do almost all of the steps to continue to be involved.

But as we looked at diversity, one of the things [that is] our plan, or our goal, is to have more than 45% or almost 50% of our cohort be from communities of color. Then overall, our goal is to have 75% be what we call underrepresented in biomedical research. That includes communities of color, but it also includes LGBTQ+ communities and includes rural communities and includes folks with less education, and includes folks that are below the poverty line, and includes older folks. We are working on including pediatric participants as well. We've defined diversity very broadly. I think that's really important because we as people are diverse broadly and given the nature of our country and the diversity in our country, we have a really unique role that we can play in human history. Because there are not a lot of countries like ours that have the diversity, and the different backgrounds, the different urban [and] rural [backgrounds], just all of that; we have a unique setup of folks here.

When you get all of that data together, that can lead to some pretty interesting discoveries that not only help Americans and folks living in this country but also help the rest of the world.

It's really hard. Let me also say this, it's really hard because we do have a history in this country of performing medical research without consent, performing stigmatizing research, performing research that is harmful to communities. One of the things I've really appreciated about this program is when we talk about enrolling participants, we also spend a lot of time on the consent form, we want folks to have an understanding of what they're agreeing to, and why they're a part of this program. We spend a lot of time talking with communities and community organizations about their hopes and their fears for this program, and for medical research overall. That takes time, and it takes resources. I think both of which are very valuable for us, [and] I think it's valuable for us to put our investments into that time, into that building community building trust, because that's how we right some of these wrongs. We may never be able to right all of them, but I think we can start to right some of them through this program.

Condon: I want to draw attention now to one of the goals of the program that's been around since its inception. And originally, it was to enroll one million participants in four years. That changed, I think around 2017, that changed to a 10 year goal for enrolling one million participants. Can you tell us why that goal changed?

Hentges: Well, so a couple of things. One is: from since I've started, it had always been roughly five years. The Cures Act provides a 10-year authorized appropriation. But from my memory of it, we had always talked about enrolling in roughly five years. Now, when we started talking about that, I don't think we had any idea what we were talking about. I say that in the nicest possible way. I think we had all the best intentions, but this is hard work. And especially because we want to work with communities that, rightly, some of them have a negative view of medical research, and we have to then sit and have conversations. I think we really put in the work and have been putting in the work to develop those relationships, so that we can be with participants over multiple decades. This is a longitudinal study, meaning if the program gets my data once, it's valuable, but it's even more valuable when we do reassessment, when folks fill out an additional survey, etc,, etc. The longer that participants are providing data, the more valuable that data becomes, because folks can track the cohort over time. To do that, we really wanted to spend time making sure that folks could enroll and could be comfortable enrolling.

I will say that many programs like ours, which there's not one exactly like ours, but other large cohorts usually take 10 plus years to enroll participants before they start letting data out. For us, what we did is we started national enrollment across the 50 states and D.C. and the territories in 2018. In 2019, we started providing aggregate data first through our public data browser and then in 2020, our researcher workbench. And so all of that was happening at the same time, which means resources were going not just to enrollment but also to getting the data in, getting the data processed, and getting the data available to researchers. Then at the same time, we had an international pandemic [the likes of which] hadn’t been seen in over 100 years. Right. And [with] that, rightly, we paused all our in-person enrollment activities for a couple of months, I don't remember the exact length of that. Then as we restarted enrollment, we were very conscientious about what we're doing

with our communities. We didn't want to go from having 10 people coming in to a site every day to zero people back to 10. At every site, we wanted to make sure that folks were comfortable that they understood that we were taking their health and safety and the safety of our frontline workers very seriously. So that put a big pause in our numbers. At the same time, if I remember right, we just passed 500,000 people that have consented and provided their basic biosample or their basic parts of the program. And so, we're about halfway right now to the million. But I think with that we're halfway with folks that we're going to be able to contact and so [the process] is in the beginning. I mean, I was naive in the beginning. I remember talking about this and thinking, well, people will just sign up, this is easy, we're gonna get to 20 million, right? It's a lot harder, because we're asking folks to give their time, their data, their, you know, biosamples. We're asking them to hang out with us for decades. Right? That's a relationship that takes time. Yeah.

Condon: That's incredibly important. So actually you just touched on this and it's going to lead us into the next question. Another goal of the program, one that does not get quite as much attention as enrolling one million participants, is the sharing of data to research institutions. I personally love this. And I try to highlight it anytime I'm talking with colleagues across the agency or describing what I do to those who don't work at NIH. Essentially, this provides availability of data the All of Us collects, that enables researchers to skip participant recruitments for their own studies, which is amazing. If you're in the research field, you have to know that that cuts down considerably on cost and time, and a lot of things. Can you tell me, how did the data sharing element begin?

Hentges: This is another piece, I think, that was at the very beginning when the precision medicine working group of the Advisory Committee to the Director, this is one of the pieces that they talked about. As you're going to build this large data set, there are a couple of different options. One option is kind of the traditional: you have a bunch of different data centers; researchers go to those data centers, download the data, do their work on the machine, publish a paper. That works. To some extent, it works with smaller data sets, right? It works if you have 1,000 lines of data, that may be something that's tenable. If you have millions of lines of data, that's going to be a little bit more difficult to do that download onto your individual machine. The other piece of this is that by taking that data in to your machine, it also makes it harder for other people to replicate what you've done, right? It's harder just to do that type of science.

Quite frankly, it may not be as safe or secure as the environment we have. We really looked at it as what we call a “passport model” where we have a cloud-based system where researchers come to us first through their institution, the institution signs an agreement with us where they abide by our rules and all of the laws and regulations of the government but also our own program rules, including things about holding their researchers accountable for stigmatizing research and not doing stigmatizing research, etc. Then the researcher joins; they agreed to all of this; they go through training; they take some time to understand what we're trying to do with the program. Then when they create their workspace, they can [access data for the] science within the general area that they're studying, [and] let science take them where it goes. We are not approving project by project. We're approving a researcher to do research within a general area and to let science kind of take them. I think that allows for a lot more interdisciplinary work, the way our research or workbenches are set up is that if you and I are both approved researchers, I can share my research workspace with you, you can share yours with me,

and we can get on the phone and talk about it, run the analyses, we can check on each other's work. We can say, “Hey, how's this going?” We can do all of that more collaborative team science that I think everyone had been talking about and had been happening in labs. That just didn't happen when you downloaded data.

The other piece is we know who has access; we have approved what we call data use and research agreements with approved institutions. We then have the researcher that we know who's accessing the data; we have all kinds of security controls on that data, including that our researchers must provide a public facing description of the research they're trying to do. That gives the public a view of what kind of research is happening within the database. I think all of that just provides for a more secure location for researchers to do their work but also for our participants to know how their data is being used. I think that's where you get to cost savings. You get to cost savings because you now don't have to have the big computer system at XYZ university to do the data crunching; you can just come in, you use our cloud-based system, you do the computer crunching through that, you do the number crunching through that, and then you as a scientist get to do the analysis and focus on that piece and what do those numbers mean. I think what's going to democratize, for lack of a better word, the research enterprise in general is that we have researchers now that are from kind of non-traditional organizations. We have the big research universities involved, but we also have researchers from other non-for-profit medical or academic institutions, including some high schools, that are really using this to explore and to look at different aspects of research that we may not have if we follow the more traditional model.

Condon: Okay. Are you familiar with any of the larger or more exciting research projects? If so, can you name one for us and tell us a little bit about it?

Hentges: Just to make it real clear, I am not a scientist, so any of my scientific discussions are in the very lay sense of it, but there's a couple of different projects in the Workbench that I know about. We have a group of folks that are looking at the intersectionality of rural folks. And so, as rural folks are getting care, how is their race or ethnicity? How is their sexual orientation? How is their gender identity? How is their income level, their education level? How is all of that playing along with them living in a rural area? And so, I think you can make some assumptions about how you think that might be going, but we now, because of the numbers that we have, we actually have the ability to do that research and figure out if you're a queer person growing up in northern Wisconsin, how is that going to impact your potential healthcare options compared to a straight person in that same situation? That I think can be really interesting, not only from an individual standpoint, from also from a public health standpoint, which I think is fascinating.

Also, one of the other things we're doing is we're doing what's called long read whole genome sequencing. This is where you take a view of the genome that's longer than the traditional view of sequencing. We're working on that all with participants who have self-identified as African American or Black, and that's really important because we don't have that information on African American and Black individuals. Most of genomic sequencing in general has been done on folks from European backgrounds, from White backgrounds, and especially these new novel ways of doing sequencing have predominantly been all White folk. And so having this type of data is going to allow us to see the small differences in the genomes. The number of our genomes are almost all the

same, but it will allow us to see some of the small differences and variants, etc., that exist between people from different ancestries. There's one case that I thought was just amazing: my boss, Josh Denny, did a study a number of years ago in his lab on a disease. It took him like two and a half years and 40 people and like $3 million to do this analysis that found this specific genomic variant. Josh asked somebody working in his lab now to basically replicate the results using the [All of Us] researcher workbench, and that was really cool. Because this person was, at the time, an undergrad and had no coding training, had to learn that while he was doing this, and it took him basically, by himself, a couple of weeks to recreate this study. The thing is that when he recreated the study with the data from our program, because of the diversity of the data, it actually gave more information about the variant that was causing this particular condition between those of European ancestry, those of African ancestry, etc. You could actually see, if somebody presents with this, these might be the things you need to look at, right? I just think there's a lot of excitement around the speed at which we can do things, the more ease we can do things and the questions we can answer that we just really haven't been able to. That's my science talk for the day.

Condon: Privacy is always an issue, always a concern, rather, when gathering and storing participant data. What are the main ethical considerations of health care providers having access to data that could be considered clinically actionable when providing treatment on related matters?

Hentges: I'm not going to be able to answer the specific question because that is well outside my area of expertise. I can pretend to talk about science; I can't talk about the ethical issues around health care providers having access to data. What I can say is that we are a research study, and we take the security and privacy of our participant data very seriously. When I give talks about this, I usually talk about the gifts that our participants are giving us because it really is a gift. It's a gift that they're bestowing on us, and they're expecting us to keep it safe. I think that's really important. And it’s one of the things that I think is [important]—besides the reason the institutions have to agree to our terms of use, the researchers have to take training, they have to agree to our terms of use including our privacy statement, which does not allow them to try to identify, or re-identify, participants. We make sure that any participant identifying information is removed, for example, if a participant logs into their portal, their account, that is not at all tied to their health information. We put a firewall there.

The other thing is participants in this program, and getting into the clinically actionable piece, participants in this program have the choice to receive information back from us. In particular, when you're talking about genetic information, that's incredibly important because some participants want to get that information back. If there's a potential variant that could be clinically actionable, they want to know because they want to go talk to a health care provider. Other participants say, “I don't want to know it. I'm giving this to research.” That's fine; it’s the person's choice, so either is fine. If a participant does choose to get genetic information back, and if there's a variant that could be actionable, they have access to a genetic counseling resource that we provide. And so, the genetic counseling resource can talk to them about what their report means, and how to have that conversation with their provider. If they choose to have that conversation with their provider. Now if they do go to their provider and have that conversation, the provider can't use our results as a clinical result because of the

structure of the FDA approval. But the participant could talk to the provider and say, “Hey, I got this research result back and how do I get a clinical test taken to figure it out?” I think that's important.

I think the other piece is just, in general, that with HIPAA and all of the laws that we have, participants, not only for All of Us, but in general, patients have access to their information, and they should be able to see what their doctor says about them in the notes. They should be able to see what the diagnoses are, they should be able to see what was being charged for. I think all of that is very good. We are a research program, so that's somewhat outside of our purview, but where we can, we want to share information back with participants, if they choose to get it. And I think that's the biggest thing: they have a choice on if they want to get it or not.

Condon: Right. And yet, I'm going to ask you another question, that might be a little bit abrupt, but your perspective is important here because it gets to just a general culture in your organization. That is, how should health care providers address inconsistencies of medical histories and data provided by All of Us, especially concerning potentially sensitive, personal issues?

Hentges: I'm glad you're asking that. At almost six o'clock PM Eastern time, I will fall back on my general perspective here. I think, for me, one of the values that I have loved about this program is that our participants are our partners. Because of that, they deserve the respect and dignity of anybody. If you were to get into a situation where a participant has results through our program, I would hope that a provider would treat those results with the same respect that they would from any other program or any other lab, and have a conversation with their patient because that participant is their patient, right? I know that in the healthcare space, having those conversations can be difficult, just because of the time that's needed for those conversations. But I hope that what we can do, one of the maybe tangential benefits of this program, is giving folks that want to receive information, giving it back to them. It enables them to go into their doctor's office and maybe have a more equal conversation with their doctor and really being able to say, I just want to know more about what this means. I want to know more about what this drug will do or how this treatment will interact. I think that the one thing is right, this is a research study; doctors don't receive this information back unless participants want to give it to them. That is entirely on the participant. We don't share information back with the enrollment centers on what participants have responded to in their surveys or what their DNA says or anything, but that is all about the participant making those choices. I think it gives the participant another tool to have some really sensitive discussions around their health with their physician.

Condon: Okay. All right. Well, thank you very much, Justin. That concludes my list of questions for you today. Is there anything that you would like to share about your experience at All of Us, or the program at large?

Hentges: I would just say it's been fascinating because when I started, I expected to be in the program for about two years because that had been my general job trajectory of doing something and then moving on, doing something and then moving on. I will say that I was probably one of the skeptics that started in the program,

[thinking], okay, is this thing really going to work? Like, are we really going to do this, is it really going to bring benefit? I am very glad to have been able to be here for six and a half years and to have been proven wrong every time I have been skeptical about what this program can do. I really think that when you, when we 10/20/30 years from now, when we look back at all of the things that have been happening in the world, I think we're going to look back on this program and say this was something that helped a lot of people and continues to help people. I'm really excited to continue to be a part of it. I'm really happy, Aaron, that you're doing this because it's something I think everyone who has been here since roughly the beginning has said, “Oh, we got to do this thing. We got to do that.” Then we just get busy. So, I'm glad you're doing it, and I look forward to seeing what everybody else says about the beginnings of this because it seems like it was yesterday in some ways, and it seems like it was a million years ago. So, thank you.

Condon: Thank you. This has been very productive. Thank you so much. I will talk to you soon.