

# Andreas Cangellaris Interview

Departing Vice Chancellor for Academic Affairs and Provost for the University of Illinois Urbana-Champaign

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## **SPEAKERS**

Bethany Anderson, Andreas Cangellaris, Sammi Merritt

### **Bethany Anderson 00:12**

My name is Bethany Anderson, and I am the Natural and Applied Sciences Archivist in the University of Illinois Archives. And I'm here today on September 26, 2022, with Dr. Andreas Cangellaris, who is the departing Vice Chancellor for Academic Affairs and Provost for the University of Illinois at Urbana Champaign. And prior to that, he was the Dean of the Grainger College of Engineering, and the department head of Electrical and Computer Engineering.

### **Andreas Cangellaris 01:30**

That is all correct.

### **Bethany Anderson 01:32**

Great. Well, thank you so much for talking with me today, I really appreciate it.

### **Andreas Cangellaris 01:36**

Thank you for the opportunity.

### **Bethany Anderson 01:39**

Well, so as we had mentioned before, we wanted to talk to you about your work on SHIELD and capture your experience during the pandemic and just make sure we have documentation of that.

### **Andreas Cangellaris 01:42**

Sure.

### **Bethany Anderson 01:45**

So yeah. So, the first question I was going to ask you is, do you remember the first time you heard about the emergence of COVID-19?

### **Andreas Cangellaris 02:04**

Very well. I remember that very well. It was sometime in February when we were hearing a lot of things happening in New York. That time you may remember, watching the state of Washington and the state of New York and then you know, it was becoming clear that whatever this was coming to the United States of America, and we were - some people on campus, were worried as you can imagine. And my

wife comes home and says, "I have COVID." I said, "Helen, how do you know?" she says "I know I have COVID. I have COVID; your students from China, they brought it over to me, to us, and I have COVID." So that was the first experience: I had my wife complaining that she had COVID. But the most important thing is when things started happening in Illinois - that's now in March - and by that time, we were already - and I want to emphasize this - we were already addressing campus concerns. There was in fact the senate meeting that, I remember that meeting very well, was at the Spurlock Museum auditorium and we brought in Dr. Vaid, Awais Vaid, from the Champaign Public District - Public Health District - and he was he was helping me answer the questions that the faculty had about what's going on and how we were taking care of our classrooms and what's going to happen, and this and that. Then, we're getting - so I don't remember the exact date, but it was ahead of - the weekend ahead of the meeting that the Board of Trustees had on campus. So, there was a meeting of the Board that we were going to have on campus, and I was with a colleague, the Vice Provost for Undergraduate Education, Kevin Pitts at that time, in the office over the weekend. He's a physicist and an engineer. And we started playing with numbers and we're saying, you know, based on what we hear happening, perhaps in September, how quickly will it be before we have significant cases escalating beyond control. And we did a few numbers, and it was worrisome because these things grow exponentially, as you know. And at the same time two colleagues in - both of them computational biochemists and biophysicists - were looking into it in a more detailed way. Nigel Goldenfeld, Professor Goldenfeld was one of them, and he sent me a message the same Saturday night, says "Andreas, I need to show you something." And he sends me this three-pager that was a much more detailed calculation of what we were doing with Professor Pitts and says, "we need to talk to the governor and have the governor lock down the state of Illinois." So, I said "okay, Nigel, I will let the powers that be know; I cannot call up the governor - President Killeen can call up the governor." So, we shared the information with President Killeen, and there was, you know, reluctance for people to do anything at that time; reluctance, but this is where we determined that something needs to happen. And so finally, President Killeen - him also being a scientist - he looked at the analysis, he was convinced that there was something we needed to talk to the governor about, so right after the Senate - the Board of Trustees Meeting, I went with then Dean King Li of the Carle Illinois College of Medicine, we went to a meeting that the governor called at the Thompson Center, which is the governor's office in Chicago, and he had invited people from the major hospitals in Chicago, Rush, UIC Health, U Chicago and Northwestern, Advocate, and a variety of other hospitals. There were all those in the room. Nigel says "just don't go there in person. You're crazy. Everybody is, is - you're going to get COVID if you go to Chicago," but I went because I wanted to be there in person to make the case that this is what the numbers show. And it was surprising to me, even though the governor's people were being very attentive, the ones that were present - and Nigel was via Zoom connecting - the ones who became very interested in the numbers we had, were people at the hospitals because they were becoming - they were quickly becoming overwhelmed. There were cases going in, they were running out of room, they were running out of ICUs, and they knew that this, this is bad news, and they don't know what to do. And to make a long story short, I think - and this is my personal assessment - when the governor's people saw the leaders of the hospitals paying so much attention to these numbers created by Urbana-Champaign, and being so eager to follow up with this, because some of the things that our people here could do were pretty amazing. They could anticipate the number of people who would end up in ICU, they could anticipate the beds that would be needed. And so essentially, they could provide the hospitals with a forecast of what would be or how their capacity is going to be penalized as this thing continues without locking down the state. And I think

that's what convinced - in my opinion, this is all my opinion - by observing the room and trying and having - having, what do you call that - having an effect on you - no, I would - so funny, King Li, the Dean, he told me "just don't touch anything; have a pen; every door we need to open, find a way to open it without using your fingers." And maybe you know you've had a lot of the - what do you call this?

**Sammi Merritt 09:25**

Hand sanitizer?

**Andreas Cangellaris 09:26**

Sanitizer; hand sanitizer - and he was getting some every once in a while, because nothing was sanitized. Anyway, so that was what led to locking down the state.

**Bethany Anderson 09:41**

That's interesting to hear about the impacts that the University had very early on the state at that point, yeah.

**Andreas Cangellaris 09:46**

And it was, you know, again, I want to give credit where credit is due. If it was not - because the health care providers were so worried and it was their reactions, and their stress, and they were asking the governor for support, and resources, and ventilators and everything else and the governor realized - and we were showing him the curves, and poor Nigel, a very peaceful, kind person, was on screen, trying, very calmly, to say there is no other option, but locking us down if you don't want many, many people to die. That's what you need. That's what happened.

**Bethany Anderson 10:33**

Well, going back to March of 2020.

**Andreas Cangellaris 10:38**

Yes.

**Bethany Anderson 10:38**

Can you think back then, to your last day on campus before going into lockdown? So, this would have been around March 17 of 2020.

**Andreas Cangellaris 10:48**

Yes, that's correct.

**Bethany Anderson 10:50**

So, can you think about how you felt at that point, and how those around you were feeling?

**Andreas Cangellaris 10:55**

Yeah, so everybody was panicking, not because of anything else, but because of what was happening in Europe. Everybody was observing that, and unfortunately, the way the government was dealing with that was very frustrating, and I think that was contributing. Instead of, maybe the White House was

trying to calm people down, I do not know, I was not part of the discussions there. But in my mind, their approach or their attitude was making people feel frustrated because they would see people dying in your watch, the State of Washington. So, you cannot hide from death. So, I know that people were getting very worried that, you know, we are Illinois, we have a major metropolitan area, and that's all it takes. And I say this because, you know, the airport was still functional for a while, as you know. And so, until they were going to close down the airports, there was a significant influx of people. Then of course there are so many highways across Illinois, as well as railways. So, the number of people that come in and out of the state of Illinois is significant. So, there were all these concerns and I believe people, because they are aware of how centrally located the state is, were very worried. On campus, people were worried for obvious reasons, because we are such a dense community and you know young people are young people - as they should be - and so there was significant concern, I believe, significant concern. Some people were trying to be more optimistic than others, but I think everybody - in my opinion, everybody was worried. My number one worry was - I'll be honest with you - all of you, some of you are very young, you know very well that, you know, people who come to college, especially the undergraduates, they are in the forming years of their personality, who they are, and any disruptions in their social life has a significant impact on who they become. So, my number one concern at that time was: okay, this is going to happen; how do we find a way to minimize the time that we keep the students away from campus? That was my first, my number one priority at that time was exactly that. And it's, you know, it sounded like an impossible task at that time, because of lack of availability of lab testing and all of that. But that was my first thought in March. And actually, I remember I called the Chancellor and I said, "Chancellor, we need to find a way - we're sending them home, we need to find a way to support them while they're trying to learn online. But we need to find a way to bring them back for Fall of 2020."

**Bethany Anderson** 10:55

Yeah.

**Andreas Cangellaris** 11:52

And he says, "do you think it can be done?" and I said - I answered "yes." But I was not certain.

**Bethany Anderson** 14:13

Yeah, there was just so much uncertainty that time, but yeah, just being able to interact with people; it's so crucial.

**Andreas Cangellaris** 14:19

It's so important for young people.

**Bethany Anderson** 14:20

Yeah. Yep.

**Andreas Cangellaris** 14:20

I mean, that's how your personality gets formed.

**Bethany Anderson** 14:23

Yeah.

**Andreas Cangellaris 14:23**

Right. It's not, you know, being at home behind the screen? No. And we saw the mental stress that - not only the fear, and the financial challenge, and you know, disease, but that you know, social distancing - these things are not good for human beings. So, that was really what we took away from this.

**Bethany Anderson 14:48**

So, speaking of social distancing, did you work from home at any time during 2020? And if so, did it change your work responsibilities?

**Andreas Cangellaris 14:58**

Okay, so I'll be very truthful. The first couple of months, I worked from home. I just was going crazy. So, I realized that nobody was in Swanlund [Administration Building]. I was the only person there. I was the only person there - the plants were dying because nobody was attending to them. So, before the semester was over, I started being there. And I stayed there throughout the pandemic. I just couldn't work from home.

**Bethany Anderson 15:42**

Yeah, it was really rough, to work from home, for sure, and be on Zoom constantly.

**Andreas Cangellaris 15:49**

Zoom was part of it, but at least I was in my - I felt more peace in my office than at home. Even though the meetings were via Zoom, there was no one in the office until we had the testing on campus, and then some people were willing to come back. But I was the only one. It's funny; it's kind of funny.

**Bethany Anderson 16:15**

Yeah, it must've been very peaceful.

**Andreas Cangellaris 16:17**

The safest place on campus, nobody was there.

**Bethany Anderson 16:23**

Right. Now I'm going to switch to talking a bit about some things you started talking about in terms of the University's impact during the pandemic, so I wondered if you could talk about the SHIELD team -

**Andreas Cangellaris 16:35**

Yes.

**Bethany Anderson 16:37**

- that was doing essential work in quarantine conditions during those early months of the pandemic. From your role in this, what strategies and technologies did you adopt to help make working remotely more effective on campus?

**Andreas Cangellaris 16:45**

Okay, so let me tell you what happened. I'm sure you didn't talk to all the right people, but here's what happened. Okay, and you need to appreciate this because it's very important. So, I called up Susan Martinis, the Vice Chancellor of Research, and I said, "Susan, I need a bunch of chemists to work with us to come up with a rapid, low-cost test." And I had some people in mind, and she had the same people in mind. And I said, "this is what I'm doing," she goes, "even if they do that, how are you going to be testing thousands and thousands of people frequently?" And I said, "well, let's have the test first, and we'll figure it out, we'll pull it together." I mean, you know, management is much easier once we have the necessary ingredients.

**Bethany Anderson 16:54**

Yeah.

**Andreas Cangellaris 17:06**

So, I call up a person on the list, he never says no, he always, he knows - like me - that moments of desperation are the most creative moments for humankind. And he lives by it. And I - this is Professor Marty Burke. And I said Marty - actually I called him late at night.; he was at home with his kids and his wife. I said "Marty, this is Andreas." "I'm having dinner," I said "okay, once you're done, give me a call." He called me up and I said "Marty, we need to bring the students back in August to campus." And he says, "You mean you're going to be testing everybody?" I said "yeah, I need to be testing everybody and I need to be able to afford it." He says, "so you need a low-cost, rapid test?" I said "yeah." He said "okay, I know who to talk to." And he - and I said that I need somebody to be the person in charge, somebody who's going to be the expert, because I'm not an expert, who is going to deal with all of that: organize the team and make sure that we execute, and we put together a plan. He said "well, I'll do it." "Are you sure? Talk to your wife." - He had young kids. "Talk to Christina and let me know." So, he called me up an hour later, he said "Andreas, we have to do it, right?" I said yeah, he said "okay, I'll do it." Just overnight, he agreed to do it, and so that's how things started. And you know, names like SHIELD and all these nice terms, he was the one who was coming up with this. I guess he was reading all these science fiction stories or things for his young boys. And he was coming up, SHIELD this, all that and so - but he was really the person that put together the science team. And of course, the science team involved the chemists who developed the test, the modeling people who were essentially trying to estimate how frequently we should be testing, and how do you deal with spikes; all of those things needed very careful management. And then of course, the labs - they were going to be doing, you know, tens of thousands of tests per week, and we went to Vet Med - the Veterinary Diagnostic Lab and that's what they do, and we converted that space into a COVID-19 testing space. So, we should love our animals because - it's good that we - we didn't have a facility at all. And then you needed to manage this with a digital ecosystem, and the Safer Illinois app was actually not developed then. We were developing an Illinois app which was driven by a desire to utilize a digital interface that would allow people on campus to think about things that they would like to change and put together teams to go about changing them. That was really the whole idea of the Illinois app, which of course requires lots of data and other things that need to be used and of course, in an academic environment, anytime we talk about people's data there is revolution. And we - people were really pushing back on the Illinois app, and they were accusing me of wanting to sell my students' data to the private sector for money.

I've heard many things, but you know, the good thing is we were advancing the technology. And when COVID-19 hit, that technology was redirected to the Safer Illinois app very quickly. So, I think it was late April when I talked to Marty about needing a test; by the end of May, they already demonstrated the system, and in June they were ready to use the system, use the - we had the returning athletes back and the idea was to use the returning athletes as well as our graduate researchers, because the research stopped during COVID. They were - some of this research needed to be done in-person, and so we were planning to use them and the athletes, as – if you wish - the original cohort to see how this thing will work out and test it, perfect it, improve it, and eventually getting ready for August of 2020. So that's how SHIELD came to be. The handful of people on this campus that made - and then of course, Mike DeLorenzo, who is now Vice Chancellor of Administration, who is an amazing program manager, he organized the entire ecosystem together with our people from events that organized and trained all the testers and put together all the information. I just want you to know you should be very proud that you are part of the University of Illinois because it's amazing.

**Bethany Anderson** 23:42

Yeah, it's an amazing collaborative effort, for sure.

**Andreas Cangellaris** 23:46

Something amazing will happen. Anyway.

**Bethany Anderson** 23:47

Yeah. So, thinking about the saliva test: what was the reasoning for choosing a saliva-based over a nasal swab test?

**Andreas Cangellaris** 23:57

Yes. So, first of all, at that time, the amount of time it takes for doing the nasal swab test - at that time; now things have improved significantly, right - so don't think of the tests that are available today. So, when I went yesterday, Saturday to convenient care for my COVID and flu tests, I did it myself with a nose swab and didn't have to put it all the way to the back of my nose, and it was very quick. But back then, I don't know if you remember them, those swabs were very long, and someone else had to do it; they had to put it in. And the amount of time it took for that to be processed was significant. And the cost of each one of them was prohibitive. The saliva test, which was first demonstrated, actually, there were two tests, there's one at Rutgers and one at Brown University that were very quick. And they were not as accurate initially as we would like them to be, but very quickly Paul Hergenrother and his team came up with a very accurate test. So, it's the quickness, the fact that you could do it on your own, you did not have someone else to be part of it because that complicates things, needing to have a nurse to do this for you. This is one of the reasons why we went with a saliva test. It was very successful and allowed us - you know, there were similar iterations of what we did, the robotics that was being used in order to process the tubes very quickly, so we were able to have turnaround times within 24 hours. If you were around campus at that time, you may remember that sometimes it would take longer than 24 hours. So, we had to make significant tweaks and changes to the equipment and the robotics but eventually everything was perfected. So that's the reason why we went with saliva tests.

**Bethany Anderson** 26:15

Okay, yeah, that's helpful to know. Yeah, just thinking about the other tests that are out there and uniqueness of what we developed here.

**Andreas Cangellaris 26:22**

And you know, you should not compare them with what it is today, because today the technologies have advanced. We have vaccines. It's a totally different time. But back then, those tests were very expensive, very demanding in terms of having pressure to do it.

**Bethany Anderson 26:39**

Yeah, for sure. So, thinking now about the public outreach component of all of this. The COVID-19 briefing series began on June 5, 2020 and continued through January of 2022.

**Andreas Cangellaris 26:41**

That's right.

**Bethany Anderson 26:42**

So, could you discuss a bit about your involvement in that series and how it developed?

**Andreas Cangellaris 27:03**

Yes, sure. So, as you know very well there was significant misinformation at that time. Just to go back - there was significant misinformation and mistrust, and our hope was that if we as a University started talking about some of these things, having some of the experts be the ones contributing to the discussion, at least we're going to have an independent, apolitical way of talking about the progression of COVID, the concerns, how you deal with it, why we wanted to bring the students back. I will tell you, why we were bringing the students back was something that people did not appreciate. I remember vividly when we made the announcement that the students were going to be coming back. Our neighbors, my neighbors, were really mad at me. They never told me anything, but they became very rude to my wife to the point where she left; she left and said, "I cannot deal with that." And I said, "why don't they talk to me about it?" She said, "I do not know." So, she left, she went to her son and daughter in California, and she stayed with them for two months. Until, you know, we were back into October and people were a little more comfortable. It was very difficult. Bringing the students back was considered by everyone as the most irresponsible thing that the University did. Anyway, we did - we brought the students back, and we wanted to have this conversation. First of all, to find out that we don't have the answers to everything - and we did not have the answers to everything. You can remember, especially in the early going, some of the - some of the concerns, some of the mistakes that were made. We did not anticipate the non-linearity and the applicability of the human being. Students - young people are young people, as they should be, and discipline is something that is gained by not doing it the right way, practicing the right way, and eventually you find out, you make some mistakes, you suffer a little bit along the way, and we become disciplined. All of this is to say that we did not really - we were so focused on having the system in place, operating, that we did not - we did not take the time to bring in the human factor and prepare ourselves in conversations to address that; and point and say, "you know, we're making these predictions, but who knows how people are going to behave." You can go and look at some of those recorded materials and you'll see that none of us ever said that. We said it after the fact, of course. And I regret that. But this was organized by our Public Affairs Office. The



Chancellor was in most cases leading the conversation. And as I said, as much as possible we were trying to make sure the experts were the ones that were coming in, whether it was from CUPHD [Champaign-Urbana Public Health District] or from the University. They were the ones who were trying to deal with the questions that needed to be answered.

**Bethany Anderson 30:50**

For sure, yeah, we actually did an oral history interview with Julie Pryde from CUPHD; it was really interesting to hear her talk about the early relationship that the University and CUPHD had and that impact. Actually, I wondered if you could talk - you talked about that a bit - but I wonder if you could talk a bit about that relationship and who approached whom at that point.

**Andreas Cangellaris 31:16**

Yes, I will because actually this was very important. I was surprised to hear that the relationship that existed between the University and CUPHD is not typical of other communities. So, the relationship here has been very strong over the years. Just to give you an example: anytime there is a contagious disease on campus we rely on CUPHD to work with us to make sure we protect the community. They have been - when measles, several years ago - I don't believe anyone, maybe, maybe you would know [gestures to Bethany] - probably not. When measles popped up here, we relied on them to be the ones who go from door to door to everybody who may have been exposed and work with them to say, "hey you have to stay home, don't go to work;" and they did it very successfully. And also, we've worked with them very closely over the years, where we've had to deal with, you know, Unofficial [Saint Patrick's Day]. Many students do not behave properly those days, but, you know, they were very helpful in providing guidance, what to do, what not to do, as experts in public health. As I mentioned to you that the first meeting - the first senate meeting, where I wanted to make sure that the community in fact would be well informed about what was going to transpire, I brought them up. Julie Pryde found Awais Vaid, and he came, and he talked to the Senate about what to expect; what we expected to be happening very soon. Then he became a very frequent attendee at some of the senate meetings because another thing we did - which was, I think, very unique - the Faculty Center here, the Academic center, had very frequent meetings throughout the pandemic, during the pandemic, throughout the year - many, many - the frequency was, I think, three or four times the frequency during a regular year. Those meetings were meant for just information to be shared. These are public meetings, and that information is available, and people would come and I mean, through those meetings, we heard, you know, many of the challenges that faculty, and staff, and students were dealing with, so it was a good way for the campus to be hearing itself dealing with COVID and CUPHD, they were a big part of those meetings. Very strong relationship.

**Bethany Anderson 34:06**

Yeah. So, I wondered if you could, you know, thinking about that relationship that was with CUPHD, and so forth. Were there any other safety measures that were put in place to protect people on campus and perhaps recommendations that came from them as well?

**Andreas Cangellaris 34:24**

Yeah. We attended to most of the things that people were suggesting; and I will tell you, many of the things that people were suggesting, I'm not sure how valid they were. Eventually, lots of studies were

done by experts in modeling of high particles, moving air under different conditions, different density of air or temperature or pressure. But the most important thing was ventilation. From day one, actually, because we knew that, and there were very detailed studies about ventilation of spaces, and we had many experts in mechanical engineering who have been consultants for the aerospace industry and so on; right away, we practically replaced all filters in all classrooms we had, since ventilation means we have the state of the art - the best. So, we attended to that. Many of the rooms that did not have ventilation, or we could not improve the ventilation, we just took them out of circulation - they were not being used. And that was something that CUPHD was recommending from the start – I would say most of the [inaudible] were engineering faculty, were aware of this and they helped us move that quickly, very fast. The other thing that I want to also emphasize is the fact that we had many volunteers that engaged with us especially in the early going, when we were doing lots of contact tracing. Without the help of CUPHD to train them and work with them, it would not have been possible I believe. That contact tracing was led by CUPHD because they were the official ones who were supposed to do it. But then there were many volunteers on campus that were contributing to that. And then we - Student Affairs - developed additional resources, and CUPHD was in charge of providing significant guidance and training on how this contract tracing should be conducted.

**Bethany Anderson 37:00**

So, going back to SHIELD now, when SHIELD was first starting to be implemented, were there any problems that you encountered, whether they were expected or unexpected?

**Andreas Cangellaris 37:16**

I mentioned a little bit about the human factor. That was one of the ones we should have anticipated, but we didn't. The other thing was how difficult it was to be doing up to five or six or seven thousand tests a day. That was something that - it was not easy. But eventually we automated that, so the month of September was difficult because there were several hiccups. My dear colleague Marty Burke – there were two things, human factors, and the equipment. So, Marty will call me in the middle of the night and say, "You need to tell the students to stay in their rooms for the weekend - or for so many days - otherwise, the whole campus is going to get infected." I'd say "okay," and he'd say, "you have to do it right away; otherwise, kick them out!" I'd say, "we do the testing to bring them back!". But I'm saying that as an example of how committed everybody was to make this thing work, and, you know, you get these flares of, of things that don't work properly and all you can do is try again, innovation, find a way to do that, but it was very stressful. It was very stressful, and there were hiccups.

**Bethany Anderson 39:10**

That's quite a feat to have that many tests; the volume of tests at that time, too, just to think about it is like mind boggling. It's like I can't even imagine.

**Andreas Cangellaris 39:19**

Yeah, it was incredible. And, and then of course, you know, there was all the criticism. There were many, many people who said, give the students a year off - you save money, and you don't have to do all this testing, and they are safe, and everything's going to be fine. You know, this is a free country, everybody has a right to their opinion, but I think, based on what I saw with high school kids, keeping kids isolated would have been a significant mistake, I believe. I have not changed my mind about this. It

is not money that matters, it's wellbeing, especially mental wellbeing that matters. And I did not know - I mean, we learned a lot from this pandemic, I think; I learned so much. All the inequities that exist out there and how different cohorts are dealing with life. But sometimes it is not - we're not aware of it. We're busy with our lives, and we tend to not pay too much attention. The pandemic brought it to center stage. I think, as a nation, we're much better now attending to these things than we were before the pandemic - and let me follow that by saying I am not saying that it was a good thing, but at least we're attending to some of the deficiencies we have as a society.

**Bethany Anderson 41:11**

Yeah, for sure. So, when the vaccine became available, how did SHIELD incorporate it into its existing response plan?

**Andreas Cangellaris 41:19**

Yes, that was great news of course. And then right away, vaccination provided us with the opportunity to relax a little bit the constraints that were going along, with testing and masking and so on. Please understand that having to be respectful to the rights of everyone. Some people could not get vaccinated; some people had reasons not to get vaccinated. We coordinated to have this - have a different expectation of those who are vaccinated than those who were not able to get vaccinated for whatever reason. That created a complexity. Eventually we were able to deal with that complexity. Eventually, what happens is - as you can imagine, vaccination, together with essentially developing resistance because you have been infected - all that combined provides a much safer environment for people to not be as disciplined as they needed to be. So, we tried, because it's a university after all, to relax our strict rules. I think everybody saw that - some people were not happy about this, but I think overall it worked just fine. The other thing I will say is though, that you know, this virus is an amazing virus. It knows how to evolve, and it has; it can mutate very quickly, and now we're getting into the stage that every year together with our flu shot, we're going to get our COVID-19 shot; there's nothing we can do about it at this stage. Right. So, that's how we approached this. We tried to relax, although we had to follow the guidance of the state because we are a state university. Even though we have some flexibility; we could take what the state commands and make it a little stricter, but we cannot relax. So, when we felt that that was not enough for our community, we made things a little - more stricter than what the state wanted. But overall, I think overall we did a fair amount.

**Bethany Anderson 43:51**

For sure. It's been a bit of a roller coaster ride during this time: changing factors and the introduction of vaccines and different mandates regarding masks and things like that.

**Andreas Cangellaris 44:03**

So let me tell you - I remember - it's kind of funny. From 1993 to 2005 I travelled a lot to Asia. I was working with companies in Asia and universities. Anytime I would go there I would see the majority of people wearing a mask - I was wearing a mask, because I figured, they know something; they live here, right? So, I started wearing a mask. I say this because I became very comfortable wearing a mask anytime there was flu season in Asia, and then I would come back to the United States, and I would take the mask off except for when I was on a plane. Anytime I travelled and I was on a plane, and it was flu season, I would wear a mask. So, I do hope - even though I will say it and as I speak, I'm

out of breath - because I do hope people become more comfortable wearing a mask just to protect themselves during times where there is a chance of getting infected that is higher than normal.

**Bethany Anderson** 45:25

Yeah, for sure. I just have a few more questions, you've been very kind with your time so far. But I wanted to ask if you could now talk a bit more about how this whole time has impacted you. So, were there any projects or priorities that you yourself had to put on hold? During, especially, the early days of the pandemic?

**Andreas Cangellaris** 45:46

Yeah, there were a few.

**Bethany Anderson** 45:48

Yeah.

**Andreas Cangellaris** 45:49

First of all, like everyone else – everybody else - it was exhausting. I have never felt so exhausted in my life. It was exhausting. It was not just - it was primarily mental exhaustion. You're worrying about this, worrying about that. I mean, if you look at the job of "Vice Chancellor for Academic Affairs and Provost," nowhere does it say to "manage a pandemic on campus." It's not part of the job description. So, it is what it is, I'm not complaining. It was very, mentally - and you know, worrying about things and having to deal with parents, and they couldn't understand why we're doing all this testing, or they couldn't understand why we weren't doing more testing. It was all over the spectrum and everybody deserves an answer, right; you cannot dismiss them. Each and every one of them cares about something and so – it was - I have - my team in the provost's office, I could tell they were getting exhausted too, but they were very patient and that saved the day. Our public affairs people who helped us with developing questions, answers to questions, anticipating questions, and suggesting answers, made all the difference. But it was exhausting and because it was exhausting, you know, some things fall, and then we forget that they have fallen, to pick them up later. But one thing I was very eager to do as Provost was to rethink the way – who are the people we teach and how it is we reach them; what are the pathways that bring students to campus. Because we're so fixed on the traditional high school pathway, and there are students who, for whatever reason, they will not be on that pathway, and that does not mean that they cannot come to the University; it's just that when they are engaging with the University, they could be older, they could have different experiences in life. How do you account for all of this as you consider the students, whether they are 17 years old, or 27 years old, or 35 years old, right? This is something we're not accustomed to. We expect the students to look like undergraduates; they have to be very young and very green, right? No experiences in life. You see where I am going. I really want to change this - we need to change this. It will happen now, I believe, but the pandemic slowed it down by two years. I think that the good thing though, is that the pandemic reminded us how important it is to have these flexible pathways for people to engage with the University. It reminded us about the fact that the financial burden of engaging with universities, especially when you're young, is one of the burdens that we need to accept and say, well, maybe some people need to work first before they're able to get to the University - even when we're talking about the cost of higher education. And all those things, I do believe, even though I didn't have a chance to do it, I think we as a university can

do it. I know the Chancellor is focused on this and we're going to make some changes. That's the thing I regret the most: that I was not able to get it going while I was Provost.

**Bethany Anderson 49:07**

So, one thing I also wanted to ask you, thinking about plans that may have not been able to reach fruition, but also, the University has fundamentally changed during this time in a lot of ways. So, in reflecting on your time here at the University do you think the University of Illinois has changed forever, and do you think that these changes are good, or bad, or can it ever go back to some of the ways that it was before?

**Andreas Cangellaris 49:43**

Change is good. Universities need people - I will tell you – I am the first one to say it, although I'm sometimes very impatient. I believe we are not changing as fast as the times demand. The University needs to be positive about change because we're very responsible for educating, preparing citizens, preparing leaders, preparing lawyers, preparing physicians, preparing engineers, preparing teachers. These things are social science for heaven's sake, you have to be very careful about making abrupt change. But changes are needed. As I mentioned to you, who are our students, and how the students engage with us; this whole idea of lifelong learning, people changing careers because they have to, and because they want to, and us being there to help no matter where they are, how old they are. These are things that we're not able to do very well actually; we try to do them, and the students suffer because, you know, you get some older students here; they feel very uncomfortable because they are among young students, and even the professors do not know how to deal with them, right? It's very odd. We need to change. But there is another thing that I believe perhaps you're talking about and that is: people want to work remotely, right? So, I'll tell you that I do not know how a university community can work remotely. I find it very difficult. It is – again - it is these interactions and these collisions that happen unexpectedly, not intentionally. Because when you have a Zoom call, you have specific people you're going to be talking to; you decide who is going to be in the group that you're going to be talking with. But when you're on a university campus, you run into people who are totally different than you are and have totally different opinions; and sometimes they will get you really mad. Sometimes you're going to learn something from them that you did not expect; and I think that's the value of the University, and I hope as we rebound from this, we come back to the fact that universities are places for people to be together. I believe that's what's going to happen, I believe that people are going to become much more comfortable and say, well, I want to be around other people, especially when I'm learning; especially when I have questions to ask, especially when I have things to say and test; you want to have an audience. So that's my hope, my hope is that this will happen. I've talked to many students who are learning online because they have families and because they have work, and one of the things that all of them say is that they're very appreciative of having the opportunity to learn online, but having those - we have these group conversations that happen, those - they would love the opportunity to have them in-person, because then it is not a set of squares that are talking to each other, there are people actually in the room, and you can see so much about how someone is thinking or how they react to something even when they don't say anything when they are there with you in-person. So, the other thing that I would - perhaps you were talking about that - I do not know; if people are saying that people want to work from home.

**Bethany Anderson** 53:47

Well, it's a very broad question, but yeah, that's definitely one thing that a lot of people are talking about, they're like, "oh, I can clearly do my job from home; I can do it remotely." But yeah, like you're saying – at least from my own perspective, I think you just lose so much when you're not engaging with people in person, you lose a lot for sure.

**Andreas Cangellaris** 54:06

I'll tell you one thing that I hope will happen in the United States. So, when I came here from Greece in 1981, to the United States, I was shocked how many hours people were working here – I thought it was insane. I was shocked that stores were open until late at night. I thought there was something not right. And my sister was a graduate student here at Illinois and I said, "what's going on?" And she always said, "it's a different lifestyle." "It's not a healthy lifestyle." "Well, you know, that's how they like it here, and that's how it is." I sincerely hope that we will realize that free time is very important.

**Bethany Anderson** 55:03

Yes.

**Andreas Cangellaris** 55:04

And we rethink the work hours for everyone - not only the offices, but also stores. Why should stores be open 24/7? I think it's unhealthy. I know my opinion is a singular opinion, but I do believe the pandemic has created a reaction. I can tell you in Portugal they are moving to a four-day week. In the United Arab Emirates, four and a half days.

**Bethany Anderson** 55:38

Wow, yeah.

**Andreas Cangellaris** 55:40

Even Saudi Arabia is considering four and a half days weekly. And in those parts of the world, like in Greece, wherever; when things close down, they are closed. That's it, because people need time to -

**Bethany Anderson** 55:59

You need time away from the screen and from people sometimes too, right? Yeah.

**Andreas Cangellaris** 56:05

So that's what I hope will happen, that we get to the stage where we realize that we don't have to work 24/7. And I'll tell you, you are talking to a – I am a workaholic. I work 24/7, but I think it's wrong.

**Bethany Anderson** 56:20

Well, it's always good to learn lessons from oneself, as they say, right? Well, speaking of that, did you learn anything from this pandemic about yourself, or about your work, or about the University? What kind of lessons will you take from this?

**Andreas Cangellaris** 56:39

Yes - several things. Several things. No matter what the politicians say, we will not be prepared to deal with the next pandemic when it hits. It's one of those things that I find very surprising, because the United States of America was the most resourceful, richest nation, that had the largest number of deaths in the world. Unacceptable. If I were the president of the nation, I would resign. Unacceptable. It's totally - there is no excuse for it, no excuse. And I say this because look at what this University was able to do. It is not something that could not be done if the masses cooperated; if we were not resourceful how [inaudible] is making. So, I worry about this. I told myself one of the things before, you know Marty Burke and his team, I said, let's try to push again, or making sure that when it comes to public health, we use technology much more than it has been used in the past, which is zero. In this day and age, you can anticipate a pandemic and identify it and isolate it very quickly. But everybody, all of us, needs to be comfortable committing to doing it. I assume everyone has one of these devices right [holds up smartphone]? These things can be done today, but it requires a significant investment by the Federal Government in order to make this happen. The good thing is that there's a new agency in Washington called ARPA-H which is going to look into ways in which we can improve our response to health emergencies, among other things, and I do believe we're going to see at least some products of that, provided by the universities - not by health care providers. They do not know how to do it; we will teach them how to do it; the universities do the work. The second thing is, there is nothing more powerful and more resilient in dealing with some of this than a university. We're not the only ones who did it – many universities, all the universities in the nation looked after the wellbeing of the people in different ways. They did amazing work. Even the ones that did not do well; their environments were much safer than the environments around them, and the density of people was much higher. So, universities are a very special case. I was being reminded - I always believed in that, but now you see - moments of desperation are the most creative moments of humankind. There is no question about it. I'm not trying to ask you to make yourself feel desperate all the time to be creative. But we are able to deal with very difficult things as human beings. And the last thing, for us to be able to do that, we cannot afford to lose time. [inaudible] That's the thing that I stuck in my mind, that no matter what the circumstance, if there is a will, we will find a way to do it.

**Bethany Anderson** 1:00:26

Yeah. So, I've got two last questions, if you don't mind, and they're both related to your new position. I wondered if you could, as you're moving on to this new position at – is it Neom University?

**Andreas Cangellaris** 1:00:42

Neom; Neom University.

**Bethany Anderson** 1:01:45

Yes. So, in reflecting back at your time – you've had many different roles here at the University of Illinois - what is the one memory that you'll take with you, that you'll think of when you remember your time at UIUC? If you could pick one.

**Andreas Cangellaris** 1:01:01

There are a few, but this is one that I will never forget. Nick Holonyak, a very famous professor, passed last week, and he was my colleague when I was in Electric and Computer Engineering. At that time, the headquarters of the ECE department was Everitt laboratory, and every morning Nick would come over

to check his mail [inaudible] or he would read the New York Times, and then a few of us would get together before work and complain about things. Because complaining about things makes you feel good, you know how it is. And then he was – one day he came, and he says, “you can’t imagine what happened to me. I was walking over to pick up the New York Times, and I’m walking over here, and I run into this guy, his name was Joe White, he was introduced to me as Joe White, and I realized he was the new President of the University. And Joe says ‘hi, are you from the campus?’ He says, ‘yeah, I know the campus,’ and Joe White, the new University President says, ‘I’m looking for this place, can you help me find it?’ He says ‘yeah, I can help you find it,’ and he says, ‘who are you?’ ‘I’m Nick Holonyak - people know about me, just look me up.’” And I will never forget that; the campus is filled with amazing people, and you run into them, and sometimes you do not know who they are, but they are amazing. And it’s always good to ask somebody who you are and what you do because you never know who you’re with. I’ll never forget him saying “everybody, can you believe it? He didn’t know who I was!” The father of LED lights. The President of the University, he doesn’t know!

**Bethany Anderson** 1:03:09

Okay, no worries.

**Andreas Cangellaris** 1:03:12

I would – I spent 25 years on this campus, I’ve had an amazing time.

**Bethany Anderson** 1:03:20

So, what led to the decision to take this new role at Neom University?

**Andreas Cangellaris** 1:03:26

So - okay. There are many reasons. The first one is that, as I tell people, I’ve been here a Department Head, Dean, Provost. People know me, but as my wife tells me, she says “Andreas, people are sick and tired of you, the only reason why they don’t tell you is because you think about all of the more important people. So, they’re uncomfortable telling you, hey Andreas, we’ve had enough of you.” And I think she’s right, I mean, especially in a University, I mean, 15 years in the University, it’s too much. And I’m not going to change very much; people know what to expect. So that was one of the reasons I felt that I needed to move on. And basically, I was exhausted; this COVID pandemic, it was mentally draining. But the reason that - eventually I was planning to just retire, but Chancellor Jones said “Well, if you retire, you’ll die.” He told me “You cannot go from running at 150 miles an hour to zero; that means somebody hit you and you died.” I just needed to find something to do, and I have been following the Neom project from the early goal. It’s a very audacious project, but essentially what they are trying to do is they are trying to divert the kingdom away from the fossil fuel economy, A; and B, modernize it to become much more consistent with the rest of the world. And the reason why they want to do that is first of all, because it’s a dead end: they cannot keep sustaining themselves; their prosperity cannot depend on fossil fuels. Even if we have a hundred years’ worth of oil, eventually you’ll run out of it, and it’s over. What will happen in a hundred years? Seventy percent of their population are under the age of fifty and they need a future that is much more sustainable. That is really the reason I figured I can be - from the outside criticizing, there are things I don’t like about that part of the world, but that part of the world is very close to where I’m from. I remind everybody that the three major religions were born in the same place, and it’s right there, which says a lot about how closely connected those people are. So, I



told myself I'm going to do this; I'm going to go and build this new university and we're going to start it up. There's nothing there currently; it's going to be built totally running on renewable energy only.

**Bethany Anderson** 1:06:45

Wow.

**Andreas Cangellaris** 1:06:47

The only in the world. Think of a place the size of Belgium. Belgium has about 12 million people right now. They are going to have a community of about 9 million people that are going to be of the nationality 50% Saudis and 50% from the rest of the world, ideally, and the footprint of the built structure is going to be 5% of the whole land. Only 5% is going to be built. They call it linear living – “The Line” - you can go read about The Line, it's a very audacious project. But I just want you to remember that this linear living actually exists. If you go to communities that are built on the sides of mountains, they're built vertically, and they're very linear because they don't have very much depth. So, you walk along the edge of the mountain, up and down, that's how you get up. And you walk; you don't drive cars in these communities. In Italy, in the Amalfi Coast, there are many of these cities and you can see it's almost – you have to leave your car outside the community because you cannot drive around there. So, everybody walks, everybody rides a bike, everybody is healthier. And you run into one another; you don't have to worry about working remotely because you're right there; the schools are right there; the university, there is one right there; so, you don't have to worry about it. So, this is what they're trying to do; it's very ambitious, very audacious, very expensive. But I figure it is an opportunity to help them. So, I will be there soon, see what happens.

**Bethany Anderson** 1:08:37

Sounds very, very exciting. For sure.

**Andreas Cangellaris** 1:08:38

Yeah. They told me when they reached out, they said “look, you guys are doing so many amazing things at Illinois; you can grow food anywhere under any conditions” – which is true. There are people at ACES here that can grow food on Mars, which is what I told them. Go to Andrew Leakey, say “Professor Leakey, is it true that you can grow food on Mars?” and he will tell you “Yes, using minimum water; a minimum amount of water.” We know how to deal with energy, renewable energy; our campus is making significant progress. We are a very nice community. So as far as I am concerned many of the things that Illinois is doing need to be done at Neom. So that's why I'm there. I'm going to present – I'm going on a University of Illinois mission in the Kingdom of Saudi Arabia, and I know – I cannot imagine how much hate mail I have received because of the Kingdom.

**Bethany Anderson** 1:09:36

Oh goodness.

**Andreas Cangellaris** 1:09:38

I mean – I was - for my wife, it was not easy, she says “are you sure you want to do this?” But, talking to the young people there, the hope and excitement they have about opening up, being able to live

using what are going to be progressive laws like the west; it makes all the difference. So, I don't pay attention to them; most people who are.

**Bethany Anderson** 1:10:15

Well, it sounds like a very exciting opportunity, and I just want to say that we really appreciate your candidness and taking the time to talk to us. Is there anything you wanted to part with; any final words, so to speak?

**Andreas Cangellaris** 1:10:28

I just want you to know; please do that - when you talk to people - there are very few universities that are as good as the University of Illinois at Urbana-Champaign. Don't forget that. No matter when people tell you, "Hey, actually no, Harvard's a better one." Anyway, I just want you to know this is a very special place and those who are able to spend some time here benefit in ways that they only appreciate after – later in life, many years, when we see all the good things, like how they behave and what they do at Illinois.

**Bethany Anderson** 1:11:11

Yeah, it's a great place for sure. Yeah.

**Andreas Cangellaris** 1:11:14

Yeah. Excellent.

**Bethany Anderson** 1:11:15

Well, great.

**Andreas Cangellaris** 1:11:16

Thank you so much.