Dr. Rashid Bashir Interview

Dean of The Grainger College of Engineering, Grainger Distinguished Chair in Engineering and Professor of Bioengineering, University of Illinois at Urbana-Champaign

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SPEAKERS
Rashid Bashir, Paul Gilbert II

Paul Gilbert II 00:00
All right. So before we begin the interview, just a couple of housekeeping things. My name is Paul Gilbert the second, I'm a graduate student representing the University of Illinois Archives. And I'm joined today on zoom by:

Rashid Bashir 00:16
My name is Rahid Bashir. I'm currently the Dean of the Grainger College of Engineering and Professor of Bioengineering.

Paul Gilbert II 00:27
Today's date is January 6 2023. We are discussing Dr. Rashid Bashir's responses to the COVID-19 pandemic for inclusion in the University of Illinois COVID-19 Documentation Project. So, just as a baseline, could you briefly explain your duties as the Dean of the Grainger School of Engineering, as well as your responsibilities as a professor, such as: do you still teach regularly as part of your position, conduct research on your own time? Give us an outline of what your work time looks like in a more normal, pre-pandemic situation?

Rashid Bashir 01:23
Sure, so as a Dean of the Grainger College of Engineering, I oversee all aspects of our entire phenomenal College on our great campus. I oversee all education, research, outreach, diversity, all of the efforts for the whole college, we have 11,000 undergraduates and 6,000 graduate students all in the College of Engineering and 470 faculty, plus another 100 teaching, specialized faculty. I am still keeping a very active research program. I have postdocs, PhD students; so I am still keeping my own personal research group, still very active. I do not teach any regular classes. But I do sort of guest lectures, I would say one or two a semester in different courses. But my main time is spent with my administrative responsibilities to the college, most of my time. And then also I'm keeping, like I said, my research group active, very active.

Paul Gilbert II 02:29
Right, transitioning into COVID times. Do you remember the first time you first learned about this disease? What were some of the things going through your mind at that time?

Rashid Bashir 02:43
Yeah, absolutely. So it actually turns out my personal area of research is - you know, I'm in bioengineering - and my personal research is point of care diagnostics and biomedical disease detection and tissue engineering. So this certainly was very close to my own research area, and we can talk about what we did at that time, but I remember Yeah, starting to hear about this pandemic, or the spread of the disease way back in late January, early February, right, in the news of 2020. We have a lot of foreign students that come from all around the world in our college and on our campus, as you know, are students from all across the world, different countries, including China, and I do remember the general sort of, students coming around that time and then just the fact that the numbers of individuals just getting sick with cold symptoms was increasing in the spring. But the fact is that the numbers really got much higher, of course, around the country and around the world around February-March timeframe, especially when WHO [World Health Organization] also declared it as a pandemic a little bit after that. So, yeah, we remember a lot of discussion a lot of work and I can tell you how I got into this probably based on your next questions or now, as to when things really kicked up in terms of the work that we did - we all did together across the campus.

Paul Gilbert II 04:12
By all means, keep going.

Rashid Bashir 04:17
There was two things: first of all, from my own research group also, as soon as the sequence for SARS Cov-2 at that time, when that strain at that time was made public, my personal research group, we started right away to design the detection approaches. In this case using LAMP of course; the PCR kits became commercially available pretty soon after that, but we started the LAMP, a primer design, and we were able to actually start the work and then soon after, in sometime in mid to late spring, samples were - COVID-19 samples were also becoming available from vendors - the inactivated samples. And then of course, later we used the samples from campus also through an IRB [Institutional Review Borad]. So we developed the LAMP isothermal point of care test in just months after that, and then we also published a paper on that in PNAS [Proceedings of the National Academy of Sciences] later in the summer, on that work. So we got into it right away from a research perspective. Then, for me, a big turning point for a lot of this was a meeting at Carle. So I'm on the Carle Foundation Hospital's Quality Board, and there was a meeting - I actually was trying to look up the date just before our meeting, let me just check that - I think it was March 12, Thursday. If that's the right - I'm gonna click quickly; if you don't mind, just flip through the 2020 schedule on my calendar and make sure. So yes, that was March 12. There was a Carle board meeting. And I asked Dr. Jim Leonard, who is the CEO of Carle Foundation Hospitals in that meeting, I said, "What do you think we will all need?" And he said three things. Because I said, you know, what can we do just from a campus perspective, and from engineering? What can we do to support this effort or combat this pandemic? At the time, we knew that we were going to be shutting down soon, but we were still meeting in person at the time. So I asked, and he said three things. Dr. Jim Leonard said three things, he said: we need testing, we need ventilators, and we need PPP [sic; PPE, Personal Protective Equipment]. So I went back immediately. And actually, I really am so glad I went to that meeting, because I had a trip potentially that time. And I chose not to go, just because of the concerns that were already rising with flying and all - or just in general. But I'm so glad I went to the meeting, because that entire meeting, then Carle and the whole

board talked about the pandemic and what was happening at the time. As the numbers were really going up. So I went back immediately to my colleagues and our campus. In parallel at that time, then right around the time, of course, our provost also charged the whole team for getting the testing going. So that all happened in parallel. But then what I did, was I went back and I pulled the team together with, I talked to our Associate Dean for Research, Harley Johnson, and we pulled the team together with Professor Bill King as one of the leads for the ventilator. So our work on the ventilator started right after that, like that weekend; we got together that Friday and Saturday. Then Professor Bill King in Mechanical Science and Engineering lead that team but I was intimately involved and kind of co-led that effort with him. But it was a campus-wide team that was pulled together and Bill did a phenomenal job. The team we met every day in the morning; we used to meet at 7:30 or 7:00 sometimes - I have to check my schedule again - early morning, including faculty from physicians from Carle, Dr. Karen White, and Dr. Mark Johnson were extremely helpful. I think their names should be mentioned, the physicians at Carle working at the frontline. I can get their titles and positions also, if you like; I think Dr. Karen White was a director of the ICU and Dr. Mark Johnson had some leadership role in the emergency department at Carle. So they participated in all those meetings, and the team produced designs and prototypes of the ventilator within a week. We worked with Professor Matt Wheeler, who is in Vet Med, he helped us do some testing on animals - on pigs. I remember going through all of that process and visiting them in the lab with the pigs. That was the RapidVent project, essentially, which we were able to produce very quickly. We all decided at the time that for the greater good, we will just put the designs out in the open and not patent anything, or not really necessarily make any revenues off of it per se. But we wanted to do it responsibly so that people don't start 3D printing those designs in their garages per se and misuse, have some unintended consequences of that. So we did work with OTM, Office of Technology Management, and set up a process where the entire package for the RapidVent was given for free, but we were checking who it was that was asking, and just making sure it was an entity that makes sense to give it to; not just individuals, so-to-speak. I don't have the data, but you should find that out, I think the package for the designs were licensed by like 40-50 different entities across the US and across the world. Two commercial entities took that and actually got it through FDA approval. One was Foxconn Interconnect Technology, FIT, which is a Taiwanese company that has a site in the US, and we also have a partnership with them and Engineering. There was another company in India that also produced those, so there were at least two, maybe more. And again, you could check with Bill King - I think you should get some statement from him, because he co-led, technically led the project. I was supporting him, and working with him, and helping to pull the engineering resources behind that to make that all happen. So that was the RapidVent project; it was very exciting and certainly was produced. A couple of big companies took that design, and produced prototypes, and got it through FDA approval at that time. I can keep going, or if you have -

Paul Gilbert II 11:55
I was going to to cut in for a second. [recording paused]

Rashid Bashir 11:58
[recording resumes] Sorry.

Paul Gilbert II 12:01
We should be recording again.

Rashid Bashir 12:03
That's okay. No problem.

Paul Gilbert II 12:07
So I would greatly appreciate you sending us a list of your colleagues over at Carle that helped kickstart the the development, at the very least of the RapidVent ventilators.

Rashid Bashir 12:21
Absolutely. It's Dr. Karen Wade and Dr. Mark Johnson, I'll email you their names and their current titles might have changed in their positions, but they're still both at Carle, as far as I know, and they have been great colleagues. So that was the RapidVent, but they also were critical to helping - by the way - with SHIELD and the saliva testing. So, talking about that project: Marty Burke reached out to me also, because he knew that I was working in that area. And we had immediately also started to kind of talk about testing also, as that team got sort of launched, so to speak, but this is March. So March, April, we started to work on talking about the test - what it would look like, started to design the study. I have documentation from the time. I was actually the - led the effort for getting the IRB protocol. So I was the Co-PI and I can get you the copies of the protocol. I was just looking for that myself today. I believe in one protocol, it was me and Marty Burke, were the Co-PIs of that IRB. I remember that very well. That all happened pretty fast, thanks to our physicians at Carle. Karen White and Mark Johnson and the other administration at Carle, who really moved that IRB pretty quickly to review and we had it approved within a week, which was unprecedented, but you know, everybody put really the highest priority of it. And that was to collect the saliva samples from the Carle drive through. I remember so vividly working through that protocol, and then myself going over to that site and thanking and supporting the nurses and the techs that collected the samples, we bought pizza and took them to thank them. But that was over a week, we collected over 100 samples out of which nine were positive. And those were the samples that were used, to put the first study together, the first testing over in chemistry with Paul Hergenrother and his group. So we all supported that effort, and I was a Co-PI of that first IRB. I had a lot of relationships with Carle already - working with the testing; I had IRBs already with them on other studies, and I was working in this domain with the LAMP testing already, so this just really helped all facilitate that, I think, very quickly getting those samples. And again, Carle, really, they should be thanked for moving the process along and facilitating that. So this was at Mattis and - I think it's Kirby and Mattis, there's a drive thru site there, and that's where we collected the first set of samples. So myself and Professor Marty Burke, were the Co-PIs of that IRB, and then I continued supporting them and consulting with them and talking to them about the PCR test, and the rest of the SHIELD ecosystem, of course, and there was many things around the time that happened after that, in the sense that we also tried to collect samples from other sites. But I think the Carle site here was the main one, and then comparison - that study was to compare the NPs, the nasal pharyngeal swabs, which were being done at the time with the saliva samples. So the same person gave consent to also collect saliva samples; those were the first saliva samples that were used. And then the study was expanded after that. We had then, myself and Karen White, and Mark Johnson, had other IRBs, then subsequently in the summer, to continue the sample collection then from inpatients also. So we also then collected samples from inpatients at Carle, NP swab, and saliva. We used that - some of that - in our research paper for the LAMP study development - for the LAMP test development. I was certainly

very involved in that. And then later in the fall, I believe it was that fall of 2020, when we were trying to get the FDA approval for the saliva test - for the SHIELD saliva test- we needed to do - FDA came back and asked for some additional data in a short time crunch, and we were looking to really get the data, of course, and do the studies to submit the response back to FDA. So this is then discussions we had with Dr. Jay Walsh, who was helping with the effort, and Marty Burke and Susan Martinis, we were all on those calls. What we needed was then some more samples, clinical samples from Carle, similar clinical samples. Again, that's where then I contacted Dr. Karen White, and Carle and her were very supportive. We submitted an IRB - long story short, we were able to get their staff to help collect additional samples in a very short time to do the NP swabs, on students, on some students, of course with consent, and compare that to the saliva - to get the saliva samples and NP swabs, in that case on campus. But Carle - I think that was important because they were able to organize the staff to collect the NP swabs, you need to train staff to actually do the NP swabs, from the students that were already giving saliva. So we were able to also do that very quickly - get the samples, and I facilitated that with Dr. Karen White. And again, that data was used for that FDA response before we got the EUA [Emergency Use Authorization] for our test. So I think that was a phenomenal effort just from campus. So many people participated and I'm so glad to have been a part of that. The third thing I mentioned - before is the PPP - I think that's something that was important, because some of our faculty then stood up the effort working with Carle, with OSF, and internally here to develop and produce different kinds of PPP that were in shortage for a little while, at least. I think if you do some searches, you'll find some news releases of different faculty efforts around that time for development of the PPPs also. One thing I'll mention is I do think, you know, we should certainly be very thankful for the partnership from Carle, as I mentioned already, but also with OSF. We have already a major clinical partnership with OSF and engineering through the Jump ARCHES program, and we were able to leverage that partnership overall, and of course talk with OSF and this was from Susan Martinis' office in campus, but I was certainly involved in some of the discussions where an OSF physician helped us with with the Vet Med lab turning into a right human clinical diagnostic lab. You had to have a physician in charge for that CLIA [Clinical Laboratory Improvement Amendments] certified lab, and that was a physician from OSF. OSF as a clinical institution partner was also very instrumental in just helping our campus with that response for COVID-19.

Paul Gilbert II 20:28
Quick clarification for the record before we move on to the next question. OSF is short for OSF healthcare. Correct?

Rashid Bashir 20:38
That's right. That's the Order of St. Francis healthcare, OSF hospital system in Peoria. We have a partnership with them and Engineering. But yes, that's the OSF healthcare.

Paul Gilbert II 20:52
So we've danced around this a couple of times, but just because we're not sure who's going to necessarily be reviewing these in the future, it's good to explain the technologies involved in the abatement of this pandemic. Could you, in layman's terms, explain the difference between the LAMP testing versus PCR testing? What are the advantages of LAMP compared to PCR, which I think, at least at present, more people are familiar with? If maybe not fully understand.

Rashid Bashir 21:38
PCR stands for polymerase chain reaction. This is sort of the standard, the gold standard that is used in clinical labs for detection of nucleic acids, RNA and DNA for viruses, bacteria, all sorts of things. For COVID-19, there was a PCR kit that was available from QUIAGEN that was used right in our campus SHIELD test. So that's the standard - I would say the gold standard that is more the standard of practice. PCR requires temperature cycling, heating and cooling in an instrument, that's a big tabletop instrument, the size of, a big laser printer type, or a tabletop laser printer, it's about that size, a PCR machine. LAMP is what's called an isothermal amplification method where you don't have to do the temperature cycling. It works at one temperature and it stands for loop mediated amplification. So it's a different chemistry, it's a different enzyme; the enzymes and the LAMP test is also commercially available, but you design it for different pathogens, just like you do PCR tests. So the primers for - the primers are the molecules that are used to choose the target that you then are amplifying for detection and looking for that entity. So for LAMP, the commercial kit was not available. So we at that time then designed our own LAMP kit and soon after the commercial kit for LAMP also became available. But the point of that is that the isothermal part, the fact that you don't need the temperature cycling, allows the instrument to be much smaller. So we developed a - and we have papers on this and it was in the news - we developed essentially, a small - it's almost a palm-held, you can call it a handheld, that sits on your palm. Half the size of a toaster, essentially small device that uses a cell phone camera as the detection method and does the reaction within the small box. So essentially the instrument can - the size can reduce from a big tabletop printer down to the size of a quarter of a shoebox essentially. That's why LAMP is attractive because it could be made at a point of care or you could move this instrument around. We developed that and that's what the LAMP test is; and the LAMP instrument is.

Paul Gilbert II 24:29
So the long story short - sorry my cat keeps on getting in front the camera - is PCR's main disadvantage is that it requires specialized equipment that takes up space while LAMP could be potentially done on the move. You don't need a lab in order to do this; you can use something as simple as say, a cell phone camera as a reading device versus - at least from what Jay Walsh said - that PCR equipment can be very expensive and kind of clunky.

Rashid Bashir 25:08
Exactly, yeah, PCR instrument is like, between $40,000 to $80,000; $60,000, average, whereas the LAMP instrument, we can make it for just a few hundred dollars, maybe 200 to 400 max. So the LAMP instrument is cheaper overall and smaller. Because of that you could actually move the instrument around, take it wherever you want, potentially.

Paul Gilbert II 25:39
So following up on that, an article published on the University of Illinois website stated, and I'm quoting, "the researchers would like to refine their method to test up to five different viruses, viral strains and variants in a single test compatible with nasal swab and saliva mediums."

Rashid Bashir 25:58
Yes.

Paul Gilbert II 25:58
So does that mean that you're testing for five different viruses that are related to each other, or five different viruses that can be completely unrelated, such as testing for flu at the same time as COVID, at the same time as West Nile, etc, etc.

Rashid Bashir 26:19
That's exactly right. It can be both; it can be either-or, meaning that it depends on those primer molecules that you pick. You can pick the molecules to check for different strains of COVID, or you can pick molecules to be detecting or looking for completely different viruses. We actually have a project going on now, where we're doing RSV, flu A, B, and COVID-19. So that's exactly right. We also have another project for a different set of viruses from blood for five different viruses. So the answer to the question is yes to both: you can choose to pick what you want.

Paul Gilbert II 27:07
Circling back to the ventilator situation, by the sound of it, you guys really hit the ground running on that. You knew that you were in a race against time before everything shut down. But I'm still just in shock at getting a working prototype out within a week, what's the normal timeline for getting something like that prototyped? And do you think that the time crunch is what made things go so much faster? Or is this just something that you've done before?

Rashid Bashir 27:48
No, no; I think that time was something very special, where everyone just put in - there was just such a synergy, and everyone came together so quickly, and all of the pieces were lined up. I think producing something within - that fast was very unusual. It doesn't happen that fast, typically. But one of the technologies by the way, and I should mention a partner, Fast Radius was a company in Chicago, that Bill actually co-founded that actually helped us with producing the prototypes very quickly. So one of the technologies that was used was called additive manufacturing, where you can design a part on a computer with a CAD tool - with a design. Then you can turn that - you can go individually print each piece, each plastic part at a time, rather than mass producing it. So that additive manufacturing and prototyping allowed us to move really fast. The team came up with designs very quickly. There were many commercial products already out there, but the problem was the supply chain. No one had planned for this. We didn't plan, as a country, as a nation, as a world whatever, right? The point was that you couldn't produce it fast enough. I think what we did was we produced a prototype very quickly because we already had the knowledge base in the team. We knew what the designs looked like from the commercial devices and we brought in the engineers and the scientists to - very quickly, were able to get designs ready. This additive manufacturing technology allowed us to prototype it; so within that first week, we had done a couple of revs, actually, and then the very first full prototype was produced within a week. We produced parts very quickly and then pulled it together within a week and that first prototype actually worked. There was also a company in town called CTS, you will find their name in the press releases; we were able to bring them, it was co-founded by one of our faculty from Mechanical Engineering. So CTS then did - we were able to get them to do some of the testing. So in a way, all of the pieces came together, the design, all the partners, two companies were brought in very

quickly and they both agreed to help in this effort. It was just really amazing teamwork and synergy that happened to pull it all together.

Paul Gilbert II 30:38
I lost my breath, just trying to picture how much you got done so quickly.

Rashid Bashir 30:48
Yeah, people just dropped everything else that we're doing. I think it just proved the point that at times I think making something really urgent - a crisis is an opportunity. And a crisis brought everyone together, and everyone agreed immediately to just work on it. Usually you would go to a company and get them to do something, it will take many weeks for them to even get the contract going. All of those things delay - all the procedural things delay a lot of things that we do. But in this case, everybody just did everything immediately; said yes, we're going to drop everything and help you with this.

Paul Gilbert II 31:28
How did the school is shutting everything down affect your ability to perform research and develop the RapidVent even further as well as PPE and then the LAMP testing?

Rashid Bashir 31:48
Yeah, so this was another really important part where the fact is that we kept our research labs open for a long time. There was a short period of shutdown of everything in terms of labs, the labs were shut down for a short period. But then we were able to get the labs open. Again, we didn't force anybody, we didn't force our students or staff, whoever was willing to come in. Many, many people were willing to come in with masks and precautions, and continue the physical work that was needed. So that was also amazing, people were totally willing to come in and do the work at their own choice. For a short while, and again, you probably can get the dates right, the labs were shut off, everything was shut off. But then we just kept on working virtually for meetings, pull everybody together virtually. And then physically, whenever people needed to go get physical work done to actually go to the lab, build the prototype, or connect the part and test it, or go to the animal lab for the, you know, pig testing, or for, in my own lab, for example, for the LAMP testing, the students were ready to go back and they were working. In a way from that perspective, some of the work continued on. As a matter of fact, I think my personal lab was - later that fall - was the first lab when, the vaccinations became available, it was being given to - vaccinations first were given to people who were more close to the virus or might have a higher chance of exposure or something. But from a research perspective, then my students actually also got the vaccination early on, because we had the saliva samples in our lab, in HMTL, in the micro nanotechnology lab, the Holonyak Micronano Technology Lab, my own personal lab, so my students were actually handling the live virus - with the proper IRB, with all the proper approvals and protocols - they were also thankfully vaccinated. They were vaccinated before I was because they were actually working hands on in the lab. They chose to do so; they agreed, we always made sure we ask them. Our labs stayed open through the whole time, except for that short period in late spring for the mandatory shutdown. But then, by the early summer or end of spring, early summer, the labs were open.

Paul Gilbert II 34:22

Another quick clarification for the record because the person transcribing this is currently out sick. IRB is short for Internal Reviews Board, right?

Rashid Bashir 34:32
That's right. So whenever you think about getting a human sample or a study that involves humans, you have to get an IRB approval. You have to submit a protocol and that gets reviewed either by campus or by Carle or wherever you are doing the study.

Paul Gilbert II 34:54
So what was that transition, like? Those first couple of weeks where everything was shut down and the team had to work remotely.

Rashid Bashir 35:04
Yeah, it was surreal, because in many ways - I mean, it was just like, there was so much uncertainty right at the time. I mean, we didn't even know whether - like people were wiping Amazon boxes, right? We did not know how long the virus can survive, and how far can it be projected from - there was so much uncertainty. So I think we did, of course, make use of Zoom as much as possible for, the teaching and a lot of the meetings; administrative stuff and everything. But then, with precaution, the hands on work, the lab work, also continued,.I mean, some labs, the micro nanotechnology lab, the Materials Research Lab - the IGB [Institute for Genomic Biology], by the way, was really instrumental - and also some other labs, the IBRL [Integrated Bioprocessing Research Laboratory] was another lab on campus, which produced the media, and the VTM and other things that were on shortage. So yeah, many of the labs on campus actually, were open very quickly. And with the right precautions, people were coming in and doing the work that was needed: for COVID-19, like in response to COVID-19, but also other sort of overall research enterprises. I feel like it really kept on moving forward in the summer; and part of it was - I mean, a huge part of it was just our campus' coordination, the policies; all the careful work was done to ensure - this is even before the testing became available for the campus, right. And it was really that summer where all that was put in place. And then of course, fall 2020, is when we started testing on our campus, right, with the SHIELD testing. So that summer was just, I think, a pretty amazing summer in so many ways. We're just like, working day and night on Zoom and in person to move everything forward.

Paul Gilbert II 37:07
So I think this is a natural transition point. Considering all the waves and developments as part of the pandemic, the University has had to change or backslide multiple times in terms of which things they believe are safe to do, which things aren't safe to do at the moment. What do you think about - looking broadly speaking - about the University's responses and guidelines that they put in place during the pandemic? Have you generally agreed with the administration's decisions? Have you been more cautious? What do you think?

Rashid Bashir 38:01
It was, so I actually personally agreed with the Universities, I was part of many of those discussions; or the deans, the provost, would consult with the deans and we were very much involved in many of those decisions; providing some initial feedback and then implementing them across our college. So I

actually think that while there was a lot of communication, and I feel like, perhaps maybe a time, the students or faculty or staff thought that there was - that things might not have been as clear for a little bit, or that things might have changed a little bit, but I feel like we, as a campus - I think it was a phenomenal effort. I mean, we were seen as a national model for for how to do it, right? How to keep the community safe, and how to keep the infections down and how to keep the spread down. So I agreed, I think pretty much with all the policies, I don't think there was anything that I disagreed upon. If anything, at times, we - the fact that I think as a campus, we understood that different domains of work might need different - slightly different - some variations in the policy. So I think allowing for that local autonomy at times was actually very helpful. Because, like I said, in some labs, in some buildings, you have more safeguards in place to control access; in some buildings, you don't. In some areas of scholarship, you need the experimental work, which you couldn't still stop for a whole year. You had grants and you had people who are willing, and grad student who were willing and safely, then why not allow them and make sure that we - so I think that allowance of local autonomy while providing the broader guidelines and safety, I think it worked really well as a whole, across our entire campus. That's my view. Because we were able to keep our research enterprise open and going, we were able to adapt and learn on how to go - like that summer of 2020 and summer 2021 we did - working with campus, we also in our college, did a lot of training of our faculty how to teach online. You know, from May 20th - March 20, after spring break, students were not - they didn't come back. So we immediately switched to Zoom and online. But then we realized that obviously, we need to support our faculty, some faculty were already used to doing some things online, and some - most were not. So that summer, we had these teaching academies for faculty to allow them to maybe learn how to teach and how to engage with students; how to assess and test. That was all done that summer. That was also a campus effort that we also did some more additional things in our College of Engineering; we invested more money from our college in addition to the campus investments. So I think yeah, I'm really proud of how our campus responded, and how our faculty responded. Now, I understand there were still some concerns when we were coming back or some faculty, maybe who had some additional health issues or just concerns about getting COVID. So we were able to, I feel like, manage all in all very, very well. Perhaps things weren't as strict for some faculty. Perhaps things were still not strict enough for some faculty. But, you know, that's always - I believe those were the edges and the majority of our faculty and students, I think, benefited and did well through the whole process.

Paul Gilbert II 42:11
So I hate to spring this question on you, because we try to give people a heads up when we ask them, but this really was a bombshell dropped on us at the end of the workday yesterday.

Rashid Bashir 42:26
Okay.

Paul Gilbert II 42:26
The campus announced that they were no longer requiring students or staff to be vaccinated against COVID-19.

Rashid Bashir 42:34
Yesterday [laughs].

Paul Gilbert II 42:38
What did you say?

Rashid Bashir 42:38
Yeah, that was just announced, exactly. Yeah.

Paul Gilbert II 42:43
Based off of the communications that I've had with several of the epidemiologists behind the development of the SHIELD testing, I can only imagine how livid they are right now with the news. What was your reaction to receiving that email?

Rashid Bashir 43:05
So that's a great question. That was just yesterday. I think that given the increasing number of cases from some countries around the world, and given that we have people traveling all across the world, I'm concerned. But I am not as concerned to tell the truth, because I also feel like we are putting the - we're still making the - the testing infrastructure is still available. There are things that are still recommended. But I could have gone either way, in this case, in terms of voting for, you know, requiring some things versus recommending some things; or let's say not requiring versus requiring, it's a tough call to tell the truth. Because I feel like at this point in time, I personally think the decision is more or less fine. And if we see some changes, right, then we're gonna - we know now how to handle it. It's not like - we have now two or three years of really an excellent experience. So I feel like we can change, we can adapt quickly. So I think that's the approach I believe that the campus has taken and my sense of this is that so many more people are vaccinated, vaccinations are freely available, testing is available; we're recommending certain things. So if we keep a close eye and are ready to adapt and change, because we have the those infrastructure available to be pulled in immediately. We could immediately require things; we are ready to go. So that's why I feel like I think it's okay. Now, yeah, we could have said, well, like we did maybe a couple of semesters ago that anybody coming in, before you come in, you've got to test; or before you come in - we could have done those things, but the sense is that we're not above that threshold where that is to be required. And as you know, by the way, these decisions have to be in alignment with the public health recommendations and the state guidelines. So we can obviously always be more stricter than that. But I am confident that this decision is the right decision. At the end of the day, it's a close call, because it was taken in consultation with IDPH, with CUPHD, and lots of experience. So we can always be more cautious. And it's probably, you know, like I said, I could have gone either way, if you ask me for my vote, it might have been okay to be a little cautious. But the fact is, the numbers in the US and around here are not that high or trending that high yet to be able to be very alarmed. But yes, around the world and China, we know what's going on, right. And we have people traveling, but at the same time, we are also requiring some tests for people to travel now and all of these things at the national level. So if you take take a holistic look, I trust the Illinois Public Health Department, the CUPHD, and our campus committee to look holistically, and in this case, I think it's okay; I'm okay with the decision. That's my - I'm giving you my my full thought here. I know that there are some people who would just be more cautious, and they would say, why didn't we just require some testing of new people coming in? Or people coming into town or on campus before checking in, right? And all this week, we'll have all these people coming in; why didn't we do that? Yeah, I'm

comfortable with the decision. Okay, getting back to our regularly scheduled questions. This is a natural transition point. Has the pandemic forced you or the department as a whole to reconsider how it communicates with the media or the public? Yes, absolutely. Look, I think we have realized that the social, call it the social engineering piece, or the adoption piece, or, putting no judgment on any opinion, or any way of thinking, which is really important here - let's put that aside for a second. The idea that just because something appears to be the right thing to do, or to be the safe thing to do - it's complicated, and people's views, beliefs, economic considerations - so many things can come into play in adoption of certain policies. So that clearly has been, I think, a - but again, you know, this has been a pandemic that the world hasn't seen for decades or more. So, yes, we have certainly thought about that a lot more and I think we all need to really understand and continue to be even more vigilant on trying to make sure that facts and science is presented in a way that can be accepted. For the benefit of people, broadly speaking, and really, sort of making sure that those things are communicated and we engage the public more so in dissemination of technologies and development of technologies and an understanding of healthcare and understanding of how these complicated things are done. So, for example, people didn't understand that you can indeed make the approval process through FDA go faster. Because in this case, the number of patients - number of individuals that were tested with the COVID-19 drugs - was so much more than any other drug; and it happened so fast, because the cases were higher. So there was really good reasons of why that happened, factual reasons of why that happened fast. No corners were cut, as far as I know. But still - I think communicating with the public is just so important, and we have to really understand the science of that communication. The science and the art, I would say; the tangibles and the intangibles of engaging with the public and the communication that goes with that.

Paul Gilbert II 50:01
In what other ways has the pandemic altered the landscape for you and the department? We talked about the social engineering aspect, as you put it, and knowing how to not just speak at the public, but be able to convey information in a way that people can easily digest and act on.

Rashid Bashir 50:32
So I think, yeah, things have changed in many ways, I would say for the world. But for higher ed, and for our college - speaking for that, I think we have - we were already putting some programs online,;some of our master's programs and courses were already online. This really accelerated it, and I think it, of course, helped us to think more about where to use digital and virtual and online technologies to increase quality, improve access and increase capacity. Do it in that way. I think we have - hopefully, we're thinking about this in a much better way is that: where can I use online and where I should not use online, right? But use the online to, like I said, increase quality, increase engagement, increase capacity; I mean, I tell you, we have more students now engaging with us for advising, broadly speaking, in our college than ever before, because hey, it's easier to just do it online, or some students might not feel comfortable coming in person, and now they can do it online. And some students who feel comfortable and want to engage in person now come in person. So allowing advising as an example, both virtual and online now has, I think, made it more accessible. Teaching certain courses, larger courses, I mean, what is the point of just sitting in a big lecture hall, if it's a one way information transfer? So maybe we should be spending our time providing that - doing that online, and then maybe spending the in-person time more with the interactions or case-based teaching or

problem-based learning. So I think,altering our teaching and engagement methods by taking advantage of the virtual - it's not a solution to all problems; it needs to be put in where it makes sense. So I think that, I believe, is a good thing now that's happened out of this. I do think clearly, we have a lot of work to do; I'm very concerned about access, about unserved populations that let's say where technology is not available, where Wi-Fi and other technologies might not be available to certain communities or certain groups, where now if we're relying more on virtual, it makes it harder for those communities or those individuals. So that's something we're so much more mindful of now. So I think, you know, there's been a lot of learning, I think, through this process. Of course, it's been extremely difficult and challenging for so many. So, that's that. But thinking of what can we learn from it? I think we have adapted many of our work practices. So HR functions, business functions, certain functions that could be online now, we've already gone hybrid; we have some groups of staff that are coming in three days and working remotely two days; makes it easy for everyone, and they're even more productive now. So I think we have adapted on those fronts through the pandemic.

Paul Gilbert II 53:43
On the subject of learning, I think this is a good place to end. What have you learned about yourself, your work, and the University, in the wake of this pandemic? For example, President Killeen, when we asked him this question, said that he did not have as full of a grasp of just how - I think the word that he used was "competent," but he meant it more so in a superheroic sense - the scientists and staff at the University were in terms of being able to pull off the Herculean effort that was creating the SHIELD testing protocols, a creating a ventilator over the course of a week right as everything in the world was burning down. What are your biggest takeaways?

Rashid Bashir 54:55
I would agree with that. I think my - a couple of big takeaways, one is, exactly: I think I'm just so proud and so happy, and just so pleased with the collective response. The community, the fact that the entire campus community came together. I mean, the SHIELD effort is just phenomenal. To me, it was a systems engineering effort where so many things were pulled together so well. I mean, it was really frustrating to see that - I mean, it was great to see that 2% of the national tests - nationally - in Fall; in October, September, if I have my dates correct. In September and October of 2020, 2% of the national tests were being done in Urbana-Champaign. Well, it was great to see that, but it was also very frustrating - why couldn't this be scaled up? I feel like nationally, we could have saved so many more lives, that things could have been done so much better. So from that perspective, I was very proud that yes, I think the effort that faculty just dropped everything and put their minds and attention to this problem and collaborated together, that was very - I'm so proud of that. I think everything we have learned through in addition to that; how to how to teach better, how to, I hope, take care of our students better, meet their needs better through this process, and at the same time, keep everyone healthy and safe and, keep our research enterprise going, all of that. But like I said, I mean, I think clearly it also made us understand, or just bring to the forefront the challenges that come, obviously, with everything that happened by - potentially, I mean, I feel like the social divide got wider, perhaps nationally, because of this issue of access of technology and access to testing and everything else nationally; but regionally and here, I think with Carle, with OSF, with our community, with our campus. I'm just so proud of everything that we were able to pull through.

Paul Gilbert II 57:11
Thanks for sitting down and meeting with us. By the sound of it, you have another meeting on the docket.

Rashid Bashir 57:18
I'm sure I do. Thank you all for doing this.

Paul Gilbert II 57:27
I'm going to end the recording.

Rashid Bashir 57:29
Yeah, okay, sounds good.