Just Cognitive Bias Awareness Podcast Transcript

Intro [00:00:05] Now this is recording. RTI International Center for Forensic Science presents Just Science.

Intro [00:00:20] Welcome to Just Science, a podcast for forensic science professionals and anyone who is interested in learning more about how real crime laboratories work. The Forensic Advancement season of Just Science will focus on many areas that challenge forensic leadership within the community. In episode two of the Forensic Advancement Season, Just Science interviews Dr. Cecelia Crouse, formerly the Crime Laboratory director for the Palm Beach County Sheriff's Office, about the 2009 National Academies report. The conversation also dives into Dr. Crouse's experience, leadership, and the difference between academic and laboratory science. This month, the FTCOE will be releasing a report written with Dr. Crouse on Forensic DNA Unit Efficiency Improvement Program, EIP. This episode, as well as the report, is available at forensiccoe.org. Follow the FTCOE on Facebook and Twitter or sign up for the newsletter to be notified when the report is released. This season is funded by the National Institute of Justice's Forensic Technology Center of Excellence. Here is your host, Dr. John Morgan.

Dr. John Morgan [00:01:29] And welcome to Just Science, the podcast for forensic science professionals. I'm John Morgan, your host with RTI's Forensic Technology Center of Excellence, funded by the National Institute of Justice. We're here this week at the American Society of Crime Laboratory directors meeting in Atlanta. And it's wonderful opportunity for the podcast today to visit with one of my favorite crime laboratory directors, Dr. Cecelia Crouse. If you don't mind, I'm going to call you CC.

Dr. Cecelia Crouse [00:01:55] Absolutely.

Dr. John Morgan [00:01:56] And Dr. Crouse is the lab director in Palm Beach County. Palm Beach County Sheriff's Office, Crime Laboratory Accredited ISO 17025 and has been with Palm Beach for 21 years, including 16 years as the manager of the Forensic Biology Unit. And how long have you been the crime laboratory director?

Dr. Cecelia Crouse [00:02:16] For ten years. I've been there since 1992. So be 26 years. And I was in DNA the whole time for about 18 years. And then for the last ten years, I've been the crime lab director.

Dr. John Morgan [00:02:26] So CC is fast becoming one of the most important voices within forensic science in terms of understanding kind of where we've been and where we're going. I've been trying to get CC on the podcast for a while, so this is a great, great chance to be able to have a conversation. Welcome to Just Science.

Dr. Cecelia Crouse [00:02:46] Thanks.

Dr. John Morgan [00:02:47] So, you know, we're in a very particular moment in time in forensic science, but we're kind of frozen in time also. So all this stuff from the 2009 National Academies report has been percolating now for nine years. It seems like just yesterday that the report came out. And we have all these issues around cognitive bias and statistics and that kind of thing. And the progress that we're making. Some folks are unsatisfied with the progress. Others feel like we're changing too fast. Where is forensic

science right now? Do you feel, in terms of its response to the 2009 report, how good a job have we done?

Dr. Cecelia Crouse [00:03:26] Well, I was a crime lab director for about a year before the report came out. I knew there was such a report. I was in a cocoon in the DNA section for a while, so someone told me this report was coming out. I don't remember it, but I do remember Roger Kahn specifically saying that he was asked to take a look at some things. And when it came out, I read it like a Grisham novel, I mean, top to bottom. And I was actually kind of surprised. I didn't think we were in as bad condition that this report said we were, which meant I had to go back and parse out and kind of individualize every one of the recommendations and find out where we stood. I became selfish and wanted to know where does Palm Beach County stand? So the first thing I did was I made a PowerPoint presentation and all I did was I put the recommendations on there and I presented it to all the managers. And one of the managers came up to me afterwards and said, You don't think we're a science? And I said, What? I'm just telling you what the report said. And the individual said, Well, you wouldn't have done it had you not believed in what they were saying. And I was absolutely mortified at that comment. Sure, it was mainly because I spent my entire adult life tinkering and beating things up. I don't like I don't consider myself the dean. Like you say, I'm the custodial engineer. You there's so much more on that level about how people act and what they think and how they think and how you fit in. And I used to call it and I think I still do, you know, trying to wade through Georgia clay. And I use that analogy because when I worked with Eli Lilly for five years in plant genetics, we would put our experiments out in this nice sand in Florida. We get great results. And I would ask to come to places like Florida and Alabama and put off the same experiments. And they had clumps here. They didn't have sand and it was a lot more difficult to translate that. So it dawned on me, I came from sand and I was in I was in Georgia clay now. I realized that the ASCLD community asked for this particular document and what they asked for. I think what they received were two totally different things.

Dr. John Morgan [00:05:25] I tell you, I mean, not to be like I told you so, but I remember telling folks at the time in 2007 and eight and even earlier before it even got passed, because they've been pushing for it for a long time. I said, Are you sure this is what you want? Because I think what they thought they were getting was a document that was going to come forward and say, let's spend a lot of federal money on forensic science. And what they got was a document that at least in it's not fair to say, but it says forensic science isn't science. That isn't really fair to say about the report, but that's kind of what the tagline became.

Dr. Cecelia Crouse [00:06:00] It was Walt Whitman who said, the trouble with communication is the illusion it happened. Yeah, and I think that's what occurred here. So, you know, there was a clean up on our five and six and seven as a result of this. But refusing to go into the store doesn't help clean it up.

Dr. John Morgan [00:06:17] Right.

Dr. Cecelia Crouse [00:06:18] And I think that I wasn't used to that. I was used to experiments not working and having grants that were due and having to go to essentially a profit sharing company like Eli Lilly and explain why we don't have the magic seed yet and understanding what that might mean down the road. So I was really befuddled on why we weren't embracing certain aspects of it going through and saying, okay, let's take out all this fruit that came in this basket. You know, the stuff that's working let's put over here.

The stuff we're not sure about let's put here and the stuff that's not work and let's figure out, you know, how to turn it into compost and, you know, make more fruit.

Dr. John Morgan [00:06:53] Sure.

Dr. Cecelia Crouse [00:06:54] And that just didn't happen. So the first thing I did was I was on one of the SOFT, which is one of these committees that were the result of the actual recommendations. Now we're going to have these groups, we're going to get together and we're going to address them. Because you don't have to address NAS document, but the president can decide to do that. So the president did, and I was on accreditation, certification and proficiency. And it was really exciting because I am an absolute proponent for certification. And there's this real fear of test taking or sitting on the witness stand and saying it didn't pass the test. And I will admit that there is a difference between what happens in academics in the laboratory and what happens in forensic science. And the absolute major difference is it is not unusual for forensic science to end up in a court of law. And as a result, the rules don't change on how to do science, but the rules change on how to do science.

Dr. John Morgan [00:07:49] Yeah, I mean, what you're trying to communicate in a different format than science is used to communicating, right?

Dr. Cecelia Crouse [00:07:55] No, it's not even that. Yeah.

Dr. John Morgan [00:07:57] Tell me what.

Dr. Cecelia Crouse [00:07:57] I testified in the case in Kansas. And one of the questions was, isn't it different the science that you did at the university isn't that different than forensic science? And I said, Oh yeah, it's very different. Most people in academics couldn't survive in forensics. You have to you need to write down absolutely everything you've done. And it took me a really long time. I thought I was on the right ship that sailed, but I was actually at the airport. I just kept thinking to myself when I was in academics and I was doing work, immunologic work, and I injected the tail vein of a mouse and the mouse died. I checked it died. I didn't do a necropsy. I didn't measure it, didn't weigh and wonder, you know what it ate. But in forensics, it was hard for me because I had to write down temperatures and I had to write down reagents. When I was making a buffer that was going to be gone in an hour. But it wasn't until I was on a witness stand and I was asked about the water bath and about the kind of water that was being used. And I looked across and there's this young man, and it's a capital case. And all of a sudden, it was just, you know, he deserved to know it's 37.5 degrees. He deserves to know that that reagent was made in the morning. And I used it an hour and a half later and then I got it very slow on the uptake. Sure. So the science is the same, but it's different.

Dr. John Morgan [00:09:11] Okay. Now that's very cool. That reminds me of when I first encountered forensic science because I was like you before we were recording, we were talking about how each of us came in to forensic science. Like, What the heck is this thing? Right? And I just come out of the research laboratory and just been doing some work looking at the genetics of biological warfare agents. And so we were doing PCR and other things like that. But it was so easy because we could control everything. And then I came across these crime laboratory people who were trying to do the same thing with crap from a real room, you know, full of contamination. And they were making it work. I was like, how are these people even making it work. It's really extraordinary. So it's different in that

regard too. There's this real world thing happening that forensic scientists are trying to tackle that adds to the level of complexity you would never see in a scientific laboratory.

Dr. Cecelia Crouse [00:10:07] Well, that's correct. It's because forensic science is one big Venn diagram. It's your law enforcement judicial system. It's the victims, it's the search. It's this huge network that leads to this tiny little part where everybody intersects and that's the justice part. And you don't have to think about that when you're working in not only academics, but also even when I worked in the pharmaceutical industry. But I think opportunities have been slow to actually come to fruition in a laboratory because people were insulted by the report. People took it personally. And when that happens, it's natural to step back and say, Yeah, you and what army? I'm not doing anything wrong. It gets in. And that wasn't what the report was trying to say, in my estimation. It was trying to say, you better be introspective.

Dr. John Morgan [00:10:57] Right.

Dr. Cecelia Crouse [00:10:58] Because it's important. So the number of documents that have come out saying, hey, this supports our pattern science or this supports the way we call mixtures in DNA or this supports that this is cocaine have been extraordinary in the last couple of years. I'm very, very proud of this community. My concern is factoring in the human. And when you factor in the human and it was really interesting this morning, something that was said about millennials and I really don't like that term because they're just this wonderful group of kids, kids that really want to do a good job. They really do. And they're all in it. I will say that they're being raised in this cognitive bias, human factor world. And in one instance, we had somebody on the sexual assault response team and they started talking about a case meeting and this person was afraid that it might bias whatever they were going to do in the laboratory later. So got off of the SART.

Dr. John Morgan [00:11:58] Ah right.

Dr. Cecelia Crouse [00:11:58] And it's this I didn't want to say black and white. It's a chasm. I should know up to this point, how am I going to control my brain if I know more?

Dr. John Morgan [00:12:08] This whole trap that forensic science is in because it is the only profession in criminal justice that tries to be above it all, right? It's like completely objective. A detective who goes off on a complete wild goose chase uses his or her judgment and a ridiculous way to get the wheels of justice off the rails is not told you're doing it wrong. Right. A judge or a prosecutor or even a defense attorney does the same thing. They're meant to use their biases in some respects as part of who they are. Forensic scientists are the only folks and partly because we call them scientists. Right. We're applying science. What we give you is absolutely objective. And it raises expectations in a way that's very difficult to meet in the real world.

Dr. Cecelia Crouse [00:12:59] But I think now it's not about the bias. It's about the awareness of the bias. And I bring somebody in every year for a four hour workshop and everybody has to attend is to let them know that there's a difference between an error and a violation, and that there's a difference between saying something and not saying something. There's a difference between saying that because I was trained this way, I can't think to the left and I can't think to the right. And that's the challenge. The challenge is for me to say, when you're in court and a judge says to the jury, disregard that remark, how does that work? And the answer is it doesn't.

Dr. John Morgan [00:13:36] Yeah. It is complete nonsense.

Dr. Cecelia Crouse [00:13:39] So as a result, all the stuff that's coming in, you know, it's like they say, I can't remember the name of the Greek philosopher, but he said the eyes are not responsible for what the brain sees. So just know that the eyes letting the brain in to see it. And then then you'll be able to step back and say, you know, I didn't conduct the test this way. That wasn't my thought process. But I understand through our training and through all this information we have now that there's a possibility of cognitive or human factor issues. But I'm aware of sure, that's the key to it. So what happens when you have these individuals who just are afraid to make a mistake because they're told in academics, you can make a mistake, make a mistake, make a mistake, but the last one better be okay. But not in forensic science.

Dr. John Morgan [00:14:25] Yeah.

Dr. Cecelia Crouse [00:14:25] And it's really interesting because most of the time, and I don't mean this to be derogatory, what we're doing in the laboratory is in other academics, in other industries, rearview mirror. I mean, it was it's been a very interesting journey. And the national commission was very difficult for me.

Dr. John Morgan [00:14:43] Sure.

Dr. Cecelia Crouse [00:14:43] You know, I only have one color pair of shoes and that's ruby red slippers. I click them all the time, you know. And I'm here to tell you, I don't mind going to Kansas. It's just this wonderful amalgamation of ideas. And then you get into this commission and everybody's compartmentalizing. In the beginning, it was very, very difficult. I didn't quite understand where we were supposed to be, but I did know that human factors had to be a part of that.

Dr. John Morgan [00:15:10] I was very and I expressed this to you before, very frustrated by the commission. I think that they reflected too much a kind of thinking that very different from how you're conceptualizing it. You're conceptualizing this idea of I'm going to be aware of my biases and that's going to allow me to do a better job in terms of how I build my SOP's and how I relate to other people and things like that. And I think there is an idea that we're going to eliminate bias, and people aren't perfectible. You know what I mean? I mean, there is this there is an understanding of cognitive psychology from B.F. Skinner, you know, beyond freedom and dignity. Right. And we're going to just do your Pavlov's dog thing to you until you conform with what the ideal we're going to have for you is. And that still is and part of our culture too much where we think, well, you know, this person is that bias and that bias. And then it comes into the forensic science community in our little world here. And we're going to say, okay, well, you have biases now. We're going to do everything we can to put you into a little box and perfect you and your methods in a way that eliminates any potential of that problem, no matter whether we create 500 other problems at the same time. That's no way to solve it. I mean, you can't eliminate bias from the human endeavor. People really do more than just think like automatons. That's what's great about them.

Dr. Cecelia Crouse [00:16:28] Yeah. And there's a part of that you're absolutely correct. First of all, you're not doing anything about it, which was not true.

Dr. John Morgan [00:16:34] Right.

Dr. Cecelia Crouse [00:16:35] And second of all, it was you don't care about it, which was not true. But third, it was there are people on death row because of you. And it is like, what? And the commission was difficult. But I think part of it was because I understand wanting to have a commission with stakeholders. I get that. But I'm not sure how, having aside from the federal agencies, three crime lab directors out of 30 write policies for a crime lab. I don't know how all those voices don't end up being noise after a while.

Dr. John Morgan [00:17:09] Sure.

Dr. Cecelia Crouse [00:17:10] So we kind of got the hang of it towards the very end. But it was challenging.

Dr. John Morgan [00:17:14] The amount of education it takes. Then the disciplines are so much different. The paradigm example I love about that is fingerprints versus firearms identification and a fingerprint identification if anything disagrees it's not a match. And firearms identification just because the physics of it, you're going to have disagreements between a piece of evidence and the reference casing. Just that's how it is. You're looking for points of agreement. And there's very good reasons for the differences between those two different kinds of impression evidence. And that tells you something very fundamental about forensic science in the sense that it's really looking at very different kinds of physical and biological and chemical phenomena. And you need to have that depth of understanding in order to really come back and say, okay, well, now here's how you're going to deal with your bias.

Dr. Cecelia Crouse [00:18:00] Right? Absolutely. Yeah, absolutely. And you know, when I first became the crime lab director, the first thing I did was I met with every one of the managers for an entire day. You know, what are your goals? What are your aspirations? And believe it or not, people really liked just where they were.

Dr. John Morgan [00:18:15] Yeah, exactly.

Dr. Cecelia Crouse [00:18:16] It wasn't that they were comfortable and necessarily non thinkers. I was in a different world. I was in this world where they were constantly changing instruments and kits and reagents and protocols and procedures to someone who could do this beautiful work with a microscope and have for 100 years. So then I ended up spending a day and a half with a firearm examiner. And I remember looking to this comparative microscope saying, But what about that difference right there? He looked through the microscope and he leaned over and it was a tiny little filament. You blew on it and went away. And it was an artifact as far as I was concerned. It can't possibly be.

Dr. John Morgan [00:18:52] You almost got him there.

Dr. Cecelia Crouse [00:18:52] I know. Not even close. Not even close. I had a real respect for people that made that their life's work because I don't know if I have that kind of acumen.

Dr. John Morgan [00:19:04] I'm terrible at details, so I'd be terrible at any kind of forensic examination.

Dr. Cecelia Crouse [00:19:08] With me, it's not the details. It's just that I can categorize them in a heartbeat and I can interpret em to the cows come home. But what I didn't know was they don't interpret the entire cartridge casing. They don't start at one end and go all

the way around. Then they do it twice just to be sure that they have this wonderful skill set that allows them to say, I chose this area as the area with the appears to be dry affects that I can definitely, you know compare whatever their nomenclature is. And I think my science background and their science background, the approach was different. Now I have to step back and I had to figure out, you know, kind of how that works. But I'm all over CSAFE in three dimensional topography and all that.

Dr. John Morgan [00:19:49] I'm a huge as I don't know if you know, but I've worked very extensively in the optical topography area. And I honestly believe it's going to be a real revolution for firearms identification. And but it really boils down to understanding how much can you get out of the imaging system. And the interpretation the imaging system can use these statistics that you can build off of that which NIST is doing some amazing work in. And then from there, the human needs to pick it up. Because in the end, all of those things have limitations. There are assumptions involved with all of the algorithms. There are limitations to the imaging, even how beautiful it looks, no matter how gorgeous and amazing and the resolution and the depth of field and all of that is amazing as it is. You need that human who knows how to make inferential judgments and knows how to see this bigger picture of it and also then knows what to do next. Right?

Dr. Cecelia Crouse [00:20:47] Absolutely. Absolutely. In a matter of fact, after I read that tome on latent prints, a gap analysis and I was reading about environmental factors that may affect their instrument, which is their brain and their eyes, we ended up purchasing all brand new workstations that were identical to the (indiscernible), the 911 operators, where they go up and down and these $1200 chairs that fit exactly to who you are. And so that at the end of the day, you're you can be just as fresh as when you started at the beginning of the day. And I get that, that's all part of making sure that you have whatever it takes to get the best result you can. But I still don't necessarily see running into my office and saying, hey, you know, it would be really cool to try. I really like that. And it just doesn't happen that often.

Dr. John Morgan [00:21:35] Sure.

Dr. Cecelia Crouse [00:21:36] I think if there was ever a, God forbid, a crime committed against my family man and anybody in the lab, I don't care if their latent prints firearms, crime scene, tox cam, DNA, take it. You know, I have a tremendous amount of respect and faith in the individuals.

Dr. John Morgan [00:21:51] I mean, part of this, too. And I think one of the things that's kind of missing and I'm actually part of a group that wants to do a conference just on this topic, and that is innovation in forensic science. And the issue one of the issues is this risk aversion among the forensic science community, which I think is appropriate because you are going to end up going into that trial space potentially with anything that you do and where you have a defendant who's going to want to know what the temperature of the water bath is. And if all of a sudden you've got a new technology for measuring the temperature of that water bath, you better know why that was better than the previous one and then how you validated it and that kind of thing. And that leads to a certain risk aversion with any kind of change. Even change, you know, around bias or quantitation or new technology or anything that you might be thinking about in the laboratory.

Dr. Cecelia Crouse [00:22:41] Well, the validation is an interesting one because that's how I was raised. Validations. And like any good scientist, I think you're really interested in what doesn't work. You're really interested in those limitations so that you know when

you're hitting it, or at least you're in that transitional phase where you're not sure if it's working or not. And then you have to make these decisions. And I think the pattern scientists just weren't sure where to begin with that. Where do you begin with the scientific method? Does it really apply? Are you really trying to validate one cartridge casing from one type of a gun when you've got 60 other types of guns and 100 more different types of ammunition? And it does seem overwhelming and it does seem almost incredulous that you could actually transfer any knowledge from one set to the next. I'm just a firm believer you got to try.

Dr. John Morgan [00:23:33] I love Prince Henry the navigator. And so he created one of the first government funded research institutes, and it was in Portugal. He was the king of Portugal, even though he was called Prince Henry. And his thought was Portugal was going to take over global trade. And the way they were going to do it was they're going to become the best sailors and cartographers in the world. And so they did research along that line. And so when the Portuguese would send the ships down to try to get around the Horn of Africa, sometimes the ship only met one more mile. But they knew that mile, right? They knew exactly what was going on for that mile. They knew exactly where it was and they knew exactly what they were going to do next to try to get to the next mile. And so they were always increasing their knowledge base. There's nothing random about it. And that's what science really is. If there's anything that we need to learn now, you don't have to bite off the entire elephant. So you surprised me again in our pre podcast discussion, I said that I thought we've made enormous progress on accreditation since 2009 because certainly there are many, many more labs that have followed an accreditation regime and can say, Hey, I've been accredited. Not everybody against an ISO is Palm Beach is, but there certainly is a much more acceptance that that's part of who you are. Who are you if you're not an accredited lab, for goodness sake in some way, but you've expressed some skepticism there. Tell me about why you feel that we aren't where we need to be in accreditation.

Dr. Cecelia Crouse [00:24:58] We are where we need to be. It was the year you chose. Okay, 2009.

Dr. John Morgan [00:25:02] We were going along that path already.

Dr. Cecelia Crouse [00:25:04] Yes. We were going at quite a nice stride, actually. And everyone was gearing up. I think the misconception was that we were asking laboratories to buy into this accreditation. We weren't asking them anything. We were telling them.

Dr. John Morgan [00:25:17] Sure.

Dr. Cecelia Crouse [00:25:18] You're going to do it. And I had a manager tell me, I know we're going to do it. I'm just curious how you're going to make us. And he apologized years later because he's got this gorgeous manual now and he's a part of something really important. I think we all went through those growing pains. But they started a decade before, right? In 2009, the only thing that really happened in 2009 in the report was it said that it's not mandatory. It's not it's still not mandatory.

Dr. John Morgan [00:25:42] Or who's going to mandate it unless you're going to tie it to funding. And even that's not really a very good mechanism.

Dr. Cecelia Crouse [00:25:48] But I also think on a different level, it's a good shaming device, you know. So I'm very proud of how far we've come. And you're right, not everyone

is accredited, and I don't know what to do with these areas of law enforcement where you have maybe 2 or 3 latent print examiners and they're nervous. They want to know how do you help us and how do we get on a witness stand and say, yes, we're accredited? And I really thought that the commission was moving in a really good direction with that. In the very beginning when we wanted BJS to send out a survey saying how many of these little labs are there out there, are these entities, and I'm just really pass the accreditation. I'm well into the certification, which you talk about walking. You talk about walking through Georgia clay.

Dr. John Morgan [00:26:33] Yeah. So, yeah, exactly. So certification and proficiency testing. But let's start with certification because that's really I will make the case with you quite strongly. We are nowhere near where we need to be in certification.

Dr. Cecelia Crouse [00:26:46] Now, we're the only lab in the state of Florida. I know that's mandatory requirement for employment. And there were huge growing pains. We went from 3% in 2009, and I thought that document was going to give us what we needed. We're a little over 80% now. We've really made a lot of strides with that. But we had unions. We had people saying when I was hired, I didn't have to have this. I don't know why I have to have it now. But now that we're hiring people, the entry level, I will say that this is a caveat. The entry level, you don't have to be certified, but you're not going to go anywhere unless you are.

Dr. John Morgan [00:27:24] Right.

Dr. Cecelia Crouse [00:27:25] So almost everyone's taking the test to go further. I'm not saying there shouldn't be a revamping of some of the testing.

Dr. John Morgan [00:27:31] I mean.

Dr. Cecelia Crouse [00:27:32] But that's happening.

Dr. John Morgan [00:27:33] Yeah, that's true. Certification. But our certification regimes generally aren't ISO compliant. I mean, very few almost no certification regimes and forensic science are ISO.

Dr. Cecelia Crouse [00:27:44] They're heading in that direction. And there was an entity that actually followed the template.

Dr. John Morgan [00:27:51] Yes.

Dr. Cecelia Crouse [00:27:51] But that's a different it's a lot different if you have snowshoes on in the department store versus snowshoes on the lake. I mean.

Dr. John Morgan [00:27:59] Yeah, right. Well, yeah. And problem is, is that and we see this in accreditation too, when looking at the certification bodies, just from a forensic science perspective is a problem just from the fact of the capacity, because there's just not enough people who look at certification regimes in forensic science so that there is a regularity to it, there is a predictability to it and there is a rigor to it. You have to have inspectors. The best thing, I think, is to have inspectors who look at certification regimes all day long and then they can look at forensic science in particular. And that's a step we haven't yet taken. And I think it's a major one and it's a very important one.

Dr. Cecelia Crouse [00:28:38] Well, I actually agree with you on that. When you've got forensic sciences like entomology and the people that are writing the exams or taking the exams and because they're just not enough people to have on the board, I'm not sure exactly how all of that irons out, but I think it's a very important direction for forensic science to take. It's not just about credibility. It's about standardization. And I'm not averse to baseline foundational information. And I think certification, whether it's in medicine or whether it's your hairdresser or whatever, I think it says something very, very important about your skills and knowledge that I've had this argument and the process of writing a paper right now and trying to bring certification into a crime laboratory. And it's painful. It is. And I'm here to tell you, I took the test to see, I took the test. It was hard, right? And I studied. It was not easy. And I can give you all the excuses in the book about why it may have been harder for me than someone else. But the bottom line is this has to proceed in the future. It really does.

Dr. John Morgan [00:29:46] Well, now the Texas commission, the Texas State Forensic Science Commission has now mandated licensing. What licensing means is a little different from certification. But in the end, I'm sure you know, they're still working it to some degree, but it looks like it's going to have a very tight tie to certification for obvious reasons. And I really like the basic idea. Tell you what I'm thinking. And that is I worry that we worry too much about that trial. Right. Is there any other profession where like. If you're a plumber, if you have a problem with your plumber, the last thing you want to do is sue the plumber when something goes wrong. Right. You want to be able to go to the plumber and say, hey, there was a problem, or to the Plumbers Association or the plumbers, the regulatory body for plumbers, and say, I had a problem or the Better Business Bureau or some something else like that to say my plumber messed it up. The last thing you want to do is have to take the plumber to court because you know that's such a morass and you don't want to spend two years with your home flooded in the meantime. Right. But that's kind of what our expectation is in forensic science. We wait for the adversarial court system to tell us there's a problem. And the idea that either a Texas commission through a certification process can have this kind of responsibility, you know, there is a way for us to say whether it be an error or a violation. It's getting identified, it's being dealt with, and there's an avenue for it, sort of we're going to litigate it for the next five years and do a Daubert hearing in some undefined future about it. We need to have that mechanism. We need to have a different mechanism than that then a court case to be able to help the forensic science community do improvement on a day to day basis.

Dr. Cecelia Crouse [00:31:36] Well, I'm not sure if you're talking about something that's intrinsic to a laboratory that have been taught incorrectly. The validation studies weren't done well, and now they're putting out casework and they're going to have to go back because there's a reporting mechanism for that.

Dr. John Morgan [00:31:50] Sure.

Dr. Cecelia Crouse [00:31:51] And part of that reporting mechanism is and I'm not shifting the burden might sound like it. The defense can always say, my expert says that you really have a problem here. And the prosecution can say to the defense, your lab has an issue here and we're going to get that thrown out. I think there are mechanisms much more so than the plumber, even. The plumber doesn't want to go to court either. We have this process of litigation that involves depositions, and they involved motions to suppress. And then, I mean, everyone gets their chance. I know that there's issues out there with this is always gotten in and it will always get in. And it's not fair because it's not real science. I get that. But the whole of it is that we're not just self-reporting because we find out, you know,

somebody was stealing cocaine or somebody in evidence was stealing money. It really has to do with everything from the errors to the violations. But that could eventually will eventually be self-reporting or obvious to the judicial system and will work its way through that. I don't think in the case of forensic, it necessarily takes years to figure out somebody is doing something really, really wrong.

Dr. John Morgan [00:33:08] Well, sometimes it does. I mean, the classic Amy (indiscernible) stuff, but also Detroit, you know, I mean.

Dr. Cecelia Crouse [00:33:14] That was a breakdown.

Dr. John Morgan [00:33:15] Houston and other things as there needs to be mechanism certification as one state commissions is another. Accreditation to some extent, but not necessarily as strong because it's kind of a different kind of deal and not mechanisms that are punitive, just mechanisms for the system to correct itself. It's like when you in criminal justice theory, one of the things that you see is if you act more quickly, you don't have to act as punitively or to have a positive impact. And waiting for that court case to tell you that there was a problem. Kind of raises it in a way that may not necessarily be very healthy.

Dr. Cecelia Crouse [00:33:50] Yeah, no, I get what you're saying now, but I think that the identification of the kinds of issues you're talking about happens because of something called transparency. Sure. And almost every example you gave there was a lack of transparency. Once a laboratory has established that, that in truth, you can't buy. So I think it mitigates having an issue go on for year after year after year. We call it landing on the front page. We don't want to be on the front page.

Dr. John Morgan [00:34:20] Sure.

Dr. Cecelia Crouse [00:34:21] And I do random case file reviews and I call somebody in my office and I said, they didn't catch this. Well, we don't put it in the report. Oh really? And why is that? Well, they're going to misinterpret it.

Dr. John Morgan [00:34:32] That can't be the way it goes. That is really bad.

Dr. Cecelia Crouse [00:34:38] But what was interesting, what I find interesting is there's what, eight, nine, ten people and no one thought to say, I don't get it. Why aren't we doing this again? So I marched down there and I put everybody in a room and I said, We're going to watch dare to disagree. It's a Ted Talk is one of my favorite. You have to dare to disagree. Otherwise, this isn't going to work. And always, always. It was the nice thing about this particular talk is it tells you how to disagree. Not just that you should. So I'm not saying it doesn't happen.

Dr. John Morgan [00:35:09] Transparency is difficult too, it's daring to disagree is difficult, but transparency is even more difficult. Well, let's take an example, going back to Houston. So Peter Stout. At the Houston Forensic Science Center is now practicing what he likes to call radical transparency. And so it's like it's all here, right? Let me show you everything that's going on. And they also have a wonderful blind proficiency program. And we actually helped with that on some of the samples that he uses to put in blind into the system. And that's all fantastic. But on the flip side of that is that a lot of that transparency is misinterpreted in the media all the time. I mean, there was just in this past month, they had a very particular, very technical issue in some of their talks testing. And it affected one of the leading commercial laboratories, which is beyond reproach in terms of the best. And it

was all like, well, we're going to have to throw everything out. Now, I know they won't. I know they'll be able to correct. But transparency is a huge risk in forensic science. It has not always been well treated by the defense bar or the media or everybody else in terms of kind of the reciprocity of responsibility.

Dr. Cecelia Crouse [00:36:25] It's better than the alternative.

Dr. John Morgan [00:36:27] Yeah.

Dr. Cecelia Crouse [00:36:28] Far better than the alternative. Give me transparency any day. Only control what I can control. Yeah. As simplistic as that sounds. My job isn't to make anybody a molecular biologist or a toxicologist.

Dr. John Morgan [00:36:41] Right. Right.

Dr. Cecelia Crouse [00:36:43] I'm concerned on the inside.

Dr. John Morgan [00:36:46] Sure.

Dr. Cecelia Crouse [00:36:46] But on the outside, I don't see an alternative.

Dr. John Morgan [00:36:48] That implies a trust in you. It implies that you trust the people that you report to in Palm Beach County. Because one public official who decides to choose venality over making a tough choice. Make that makes the whole thing collapse or could.

Dr. Cecelia Crouse [00:37:06] I don't know. I think as long as your house is transparent, if someone all of a sudden can't see through the house, there's going to be a reason. That wall was put up for a reason. Yeah. And who wants to explain that?

Dr. John Morgan [00:37:22] Yeah, sure.

Dr. Cecelia Crouse [00:37:23] So if their house all of a sudden has a bunch of walls in it, I don't have to explain that. I don't want to explain that I can't control what a what a reporter says about our sexual assault initiative. I can't control what a commissioner may say about the way we're spending money. All I can do is show the supporting documentation. This is it. We put all of our training manuals and all of our protocols and procedures on our PBS or public website, and we had to take down the forms because people were filling them out and sending them in. I had jewelry stolen. Can I please have it back? And it's like, now is not the way it works. So we pull those back.

Dr. John Morgan [00:38:02] Sure.

Dr. Cecelia Crouse [00:38:03] But I don't know if we can do anything but learn from all this.

Dr. Cecelia Crouse [00:38:08] So I'm excited about that. Whenever we give a presentation to the state attorneys, we always reach out to the public defender's office and they always say yes and we always go down there and maybe the questions are different.

Dr. John Morgan [00:38:19] Sure.

Dr. Cecelia Crouse [00:38:20] And maybe, you know, when each group falls asleep may be different. But I'm comfortable in knowing that if they have a question. They know that they're going to get the best answer we can give them.

Dr. John Morgan [00:38:30] My experience, I've learned to trust the public defenders and the defense bar more than the media and in the sense that they're almost always trying to get to the truth. Usually they're very frustrated. It's like, you know, help me understand. And they feel very divorced from the process. And as outsiders, it's just like educate me, first of all, about what I can and can't look for, what I should be looking for here and also educate me about what you did. And not everyone, but the vast majority, that they respond enormously favorably to that.

Dr. Cecelia Crouse [00:39:04] We're not there to make them comfortable. We're there to make them better.

Dr. John Morgan [00:39:07] Right.

Dr. Cecelia Crouse [00:39:08] They want comfort. They actually have a hotel named after it. I am certain that's not our goal.

Dr. John Morgan [00:39:14] Sure.

Dr. Cecelia Crouse [00:39:14] If they don't want to be better. That's one thing. If they want to know more, if they want to be a molecular biologist, you know, we'll help them along that line. I don't have any problem with that at all. I mean, like I say give me that any day.

Dr. John Morgan [00:39:26] So you have 80% of your people certified. How much how much PT work are you doing? How are you solving that problem? Like Peter has really gone overboard and I think in a wonderful way in Houston. I don't think anybody else is doing that level of blind work in their laboratory.

Dr. Cecelia Crouse [00:39:42] Well, I know that the federal laboratory has actively initiated it in DNA. We service 32 agencies that use 32 different kinds of evidence bags and 32 different kinds of evidence tape. And the individuals that bring these in our, they're evidence coordinators who know our evidence coordinators who I mean, it's I can't say we've tried. I'm just trying to figure out how that would happen. And now that we're doing Lean Six Sigma is even tighter how things need to be submitted. And I think that the forensic laboratory is far better off today than they were in 2009 because of the introspection that document sent forward, regardless of how much recalcitrance there was to change. I've kind of been honored to be a part of that transition. That was just one of those forensic global events, right? Implosions that hurt. I mean, it was painful, but I, I don't remember the last thing. I learned anything by doing it right. And then to find out that what they thought you were doing wrong was right. You know, it's like they say that there's, like, what, six steps to critical thinking? And the first step is you don't realize that you're not thinking well, you didn't care. And then the next step is the challenge to say, wait a minute, this is not helping me the way I'm thinking. I know what to do about it. So that by the time you get up to the sixth step where you are at the highest level of critical thinking, it's the difference between step six and all the other steps is you've left your ego behind. And that's what kind of was getting in the way. And that's what I think establishments like ASCLD sat back and said, Look, let's rethink what they're saying and why they're saying and why we need to move forward and what are we doing right? What are we doing right?

What are we doing right? I'm just really proud of the entire community, to be honest with you.

Dr. John Morgan [00:41:30] Well, yeah, I think part of that also and from again, from a scientists perspective, I think about the answers are actually relatively easy once you understand the questions. And I think that's really if there's been struggle and there's been struggle, it's because we don't know all the questions to ask. You know, I mean, how do we even know how to ask the question about cognitive bias in particular in each of the different disciplines? It's not a simple thing, and it really does vary across different practices and things like that. And we're starting to learn how to ask those questions and ask even questions about, well, what do we mean when we say that we're going to quantitate a particular decision and how are we even going to report it out? How are we even going to state it and what the meaning of it is in a way that that translates to a jury and to the office of the court.

Dr. Cecelia Crouse [00:42:21] But isn't that the exciting part?

Dr. John Morgan [00:42:23] It is exciting. I love it.

Dr. Cecelia Crouse [00:42:25] I mean.

Dr. John Morgan [00:42:26] I'm not sure everybody does love it in forensic science, but I love it.

Dr. Cecelia Crouse [00:42:29] To me, that's part of the definition of being a scientist. You literally live to answer not the question, but the right question.

Dr. John Morgan [00:42:37] Yeah, that should be the answer. Part of my forensic scientist would appreciate more than anybody else because they do care. And so it's like I have this piece of evidence. I need to know what question I'm asking about that evidence.

Dr. Cecelia Crouse [00:42:46] I do think that, again, circling back to academics, when I really thought that the viral when I was in virology, the work that I was doing was, you know, made a contribution. This job makes a difference. It does both. Sometimes it is a true, honest to God, just labor of love. And that's where you end up in this system. I can't imagine going back to academics, to be honest with you.

Dr. John Morgan [00:43:07] We'll CC. Again, to repeat, I was trying to corner you last year at ASCLD trying to get you to come on to Just Science and share some of your wisdom and you have not disappointed and very, very much appreciate the conversation. I thank you so much for being on it.

Dr. Cecelia Crouse [00:43:22] Oh my gosh. You're welcome.

Outro [00:43:32] Next week on Just Science. Dr. Paul Speaker joins us to talk about the jurisdictional return on investment for DNA databases. The majority of these interviews were recorded at the 2018 ASCLD Annual Symposium in Atlanta, Georgia. If you have an interesting case and would like to be a guest on our next season, which will be recorded at the 2019 ASCLD Symposium, please visit our podcast landing page at forensiccoe.org/justsciencepodcast. Opinions or points of views expressed in this podcast represent a consensus of the authors and do not necessarily represent the official position or policies of its funding.