

Just DNA Evidence in Sexual Assault Cases

Voiceover [00:00:01] RTI International's Justice Practice Area presents, Justice Science.

Introduction [00:00:08] Welcome to Just Science, a podcast for justice professionals and anyone interested in learning more about forensic science, innovative technology, current research and actionable strategies to improve the criminal justice system. In episode one of our 2023 Sexual Assault Awareness Month mini season, Just Science sat down with Dr. Julie Valentine, a certified Sexual Assault Nurse Examiner, to discuss how large-scale data collection can provide a better understanding of sexual assault cases and improve sexual assault response practices, policy, and education. Throughout her career, Dr. Valentine identified a gap in data driven practices for responding to sexual assault cases. Using her experience providing care to survivors, Dr. Valentine embarked on research to collect comprehensive data regarding which factors assist in developing an assailant's DNA profile so that it can be entered into local, state and national databases. Listen along as Dr. Valentine describes the relationship between research and providing care, her goals for developing best practices and public policy, and some of her specific research findings. Dr. Valentine is also participating in the FTCOE Sexual Assault Awareness Month webinar series. Listen to Dr. Valentine present on the use of dating apps, touch, also described as trace DNA analysis, and low sexual assault prosecution rates. This episode is funded by the National Institute of Justice's Forensic Technology Center of Excellence. Some content in this podcast may be considered sensitive and may evoke emotional responses or may not be appropriate for younger audiences. Here's your host, Tyler Raible.

Tyler Raible [00:01:34] Hello and welcome to Just Science. I'm your host, Tyler Raible, with the Forensic Technology Center of Excellence, a program of the National Institute of Justice. April is Sexual Assault Awareness Month and in honor of this event, we dedicate this time in this month to talking to experts that are on the cutting edge of research and practice in the arena of sexual assault response reform. So to help guide us in our conversation, I'm joined by our guest, Dr. Julie Valentine, Associate Dean and Associate Professor at Brigham Young University in the College of Nursing and Certified Sexual Nurse examiner with Wasatch Forensic Nurses. Julie, it is so great to have you back on the show.

Julie Valentine [00:02:08] Great to be here. Thank you, Tyler.

Tyler Raible [00:02:10] I know that your career has several avenues, including your roles as an academic, as a researcher, and as a practicing SANE, Sexual Assault Nurse Examiner. I think it's truly fascinating that you operate in all these different spaces because for me, 10,000 feet in the air perspective, they do seem like they're kind of independent of each other. So can you tell us about how these paths intersect, intertwine? Is it a matter of using practice to inform research? Using research to inform practice, you know, what's your general thought on it?

Julie Valentine [00:02:40] I think that research, theory, and practice, and then you also have to add in there policy, education, right? They all build off the same platforms. And really all of those platforms are, what does the data tell us to inform our practice? And then we move to best practices, and when we gather a higher degree of evidence, then we move to evidence-based practice. And we want that across all of these spheres. Everything from how we practice, how we care for patients, how we collect evidence, to how do we inform laws, legislation. All of that should be based on data, should be based on evidence.

Tyler Raible [00:03:23] I love it. I think that's a great segue to really the core concept of our conversation today is the research. And, Julie, you're one of the premier researchers working at this intersection between forensic DNA and sexual assault kits. And in fact, much of your research informs policy and practice associated with successfully collecting forensic DNA samples during a sexual assault medical exam. So could you tell us a little bit about how this research is conducted?

Julie Valentine [00:03:50] The research is conducted as a retrospective study, and really, we would say a retrospective exploratory study. When you look at how can we do research related to sexual assault, it has to be retrospective because you're not going to have different groups. And, you know, one group would get an exam, one group wouldn't or one group would have a sexual assault, one would not. And so we really have to aggregate all of these cases and look backwards and say, if we look at this massive amount of data that is out there in the United States and aggregate these findings, what can we learn? So this really kind of started when back in 2009, 2010, I walked into our office where we kept filing cabinets filled with charts, hundreds and hundreds, thousands of patients that we had seen for sexual assault, medical forensic exams. And I just kept thinking, what could we learn about our patients? What could we learn about the assault that could help prevent sexual assault, but also provide evidence-based practice? And so I started thinking, well, then if we took those sexual assault, medical forensic exam forms and followed those cases to see which kits were submitted and then followed those cases to see what are the DNA analysis findings, we could have a really huge look at from the time somebody reported for a sexual assault medical forensic exam through the DNA analysis findings. And that's how we have approached this very large database that we have developed, which is now close to about 14,000 cases. So each case has about 340 variables. So we have a mountain of data. We collect our information from sexual assault, medical forensic examination forms, and we aggregate and de-identified all of that information. And it's incredibly important that that information is de-identified. We don't have anything that could remotely identify a specific victim. We then also do a retrospective review of information at the crime lab. So we access databases of the sexual assault, medical forensic exam and databases from the crime lab. That does not involve any extra work or burden on survivors. But this is aggregating all of their information together in a de-identified dataset. And our research team, we have very strict protocols that we follow because you don't want garbage information, you have to make sure this is really valid and reliable. So we have institutional review boards that we have passed. We have MOUs, memorandums of understanding, with both forensic nursing teams and crime labs and health care systems that we operate in. We have a very detailed code book. We always code data as a team so that if we have a case where we're not sure how to code something, we'll discuss this and take notes on that. Because of this, we have a very high integrator reliability, which is something you want to calculate to make sure you don't have junk data. You want integrator reliability, you calculate something called a Cohen's Kappa. You want it over .80, and ours is around .955. So we have really valid, reliable data.

Tyler Raible [00:07:49] Is your data pool specifically from Utah or is it nationwide?

Julie Valentine [00:07:54] So our data primarily is from the state of Utah, where I live and where Brigham Young University is and where I practice. And that's about 10,000 cases. We also have the state of Idaho that we have partnered with. So we have their data and then we also have from Orange County, California. And one thing I want to point out is what we're finding is, although there are different demographics, that the overall picture of

sexual assault is very similar across those demographics. So I feel very confident that the findings from our study, the majority of these findings, can be applied to other sites.

Tyler Raible [00:08:39] You have all this data, you're doing all this coding and you're finding these trends. What is it about this research that you find so impactful, so important? What types of outcomes are you hoping to see or determine through all of this effort?

Julie Valentine [00:08:54] We really do this research to impact and improve practice and impact and improve policy, legislation. That's the driving force. But there's also an additional driving force for me personally. I look at these almost 14,000 and we say cases from a sexual assault medical forensic exam through DNA analysis. And to me, what our research does is it captures these victim's voices, many of whom, nothing happened with their case, or maybe they never knew what the DNA analysis findings were. And in some ways, this research is a way to honor them, to honor their trauma, to say what happened to you mattered, honor these survivors. So that by joining together all of their voices, their data, we can say we can take this information to improve moving forward, to improve practice, to improve policy.

Tyler Raible [00:10:00] Julie, it occurs to me that you're uniquely positioned in this arena. So do you think that being both a researcher and personally working with survivors, with victims, does that have an impact on how you approach this whole concept?

Julie Valentine [00:10:16] Absolutely. My research informs my practice. My individual care of patients and my individual care of patients informs my research. For me, they're very interdependent upon each other. And when I scroll through this data set, I am very aware that each one of these data points represents a traumatic experience, an act of violence that this survivor experienced. And I think that that gives me additional drive to make sure this research matters.

Tyler Raible [00:10:58] I'd like to switch gears just a little bit here to talk about optimization. So in your opinion, why is optimizing the success for a DNA profile from a sexual assault case so important? You know, when it comes to helping to establish justice in the criminal justice system.

Julie Valentine [00:11:16] Well, DNA is an amazing tool. It is really harnessing science to exactly what you said, Tyler, help establish justice. For most cases in sexual assault cases, the DNA analysis findings are a piece of the puzzle, a piece of the investigation. There are some cases, and some of them have been patients that I have cared for, where the DNA was the game changer. It helped to identify a perpetrator. And without that DNA, there would have been no justice. So we do have cases where DNA is absolutely huge. But regardless of the level of importance of DNA in sexual assault cases, I firmly believe that every sexual assault kit should be submitted and tested. We have research that has shown how cases have been linked because of the DNA analysis findings and people will throw out the term date rape. It may have been a case that was kind of dismissed, but then you find that the same perpetrator, that it's the same story and there's five date rapes that are linked together. So it helps us to identify serial perpetrators. But DNA also, while this is so important to test all of our sexual assault kits for survivors, and I think that has been the bulk of our focus, that we owe it to our survivors to test these DNA kits, we also know that there's the other side where DNA has exonerated those who have been convicted of a crime. In our database, our latest analysis was over 8000 sexual assault cases where we had over 5400 sexual assault kits that had gone through DNA analysis. And out of those over 5400, we had 124 cases where the DNA analysis actually excluded the suspect. So

that's about 2% of those cases. So DNA helps us to establish justice on both sides; for survivors and also for those who could be charged with a crime. So DNA analysis is truly using science to inform the criminal justice system process.

Tyler Raible [00:13:58] How do we ensure that we collect effectively to increase the opportunity to get DNA?

Julie Valentine [00:14:03] Well, luckily, we have really good national standards to guide evidence collection. The latest publication on national standards was published by the National Institute of Justice in 2017, and it is the National Best Practices for Sexual Assault Kits: A Multidisciplinary Approach. For any of you listening, if you are working in this field, you need to be reading that document because it really is a multidisciplinary look at what are our current best practices informed by research. And so I would say that that's the first place to start across all disciplines. We also have national protocols for sexual assault, medical forensic exams for adolescents and adults, and also pediatric cases. And so those guidelines, when we follow those and when we have sexual assault nurse examiners, forensic examiners who have had the recommended education and training, then we can say we feel really confident that we are collecting evidence based upon best practices at this time.

Tyler Raible [00:15:20] What sort of factors or predictors have you discovered, have you seen, that impact the ability to obtain a usable DNA profile?

Julie Valentine [00:15:29] So I feel very honored to have a National Institute of Justice grant that is looking at DNA evidence from sexual assault kits, and we have our first couple manuscripts submitted. And our first approach was really looking at what variables are associated with developing a probative STR, short tandem repeat, DNA analysis that's eligible to go into CODIS, the FBI DNA database. There's two different levels of CODIS. There's a state level and a national level. The national level requires more loci is more discriminatory than the state level. So we looked first at how many of the sexual assault kits, and this was specifically initially for Utah, developed a profile that went into CODIS, and we found it was about 36%. Now, when you look at other research out there, there's a substantial range. The FBI has guidelines as to when and STR DNA profiles eligible to go into CODIS. There is some degree of interpretation based upon the crime lab as to if it meets those criteria. So we found a higher percentage, about 41%, that developed an STR DNA profile that seemed that it could go into CODIS. But there's other factors that may play into if it actually goes into CODIS. So there's some information that may impact different entries into CODIS. But then we looked at specific variables related to the survivor or victim and the crime. And we think that really understanding these variables also will help to guide our evidence collection. One of the huge variables that we found is gender, and this is gender when we're looking at what is the genitalia, is it a male genitalia or female genitalia? And we found that females or women were much more likely to develop a profile that could go into CODIS compared to men. When we look at NDIS, the national CODIS database, 34% of women developed profiles go into CODIS, while only 19% of men. So that was a big factor is gender. The next big factor that we found was age. We found that women between the age of 14 and 30, 30-ish were much more likely to develop a CODIS eligible profile. But as women age, specifically after the age of 50, when many women enter menopause and there's genital changes, we see this substantial drop in developing a CODIS eligible profile. We found that the assailant actions also impacted development of a CODIS eligible profile. So if there was non-fatal strangulation, which we have a whole huge study that we're doing on non-fatal strangulation we're really excited to get out there, but in non-fatal strangulation, if that occurred, along with the rape, we found

that the development of a CODIS eligible profile actually jumped to 43%. The same with if the victim reported grabbing or holding by the assailant, which makes sense. All of these things just indicate additional aggressive contact between the survivor or victim and the perpetrator. We looked at ejaculation. Really interesting findings on ejaculation. When you conduct a sexual assault medical forensic exam, we ask our patients, did the assailant ejaculate? And I will tell you, as a nurse, most of the time, they look at you like, what? They say, I don't know. In fact, out of our large dataset, 53% of the victims say, I don't know. So when I do trainings with law enforcement, I talk about that and say, please realize that is a sign non-consensual sexual activity. Because in consensual sex, most people know if their partner ejaculated or had an orgasm. We found that those that do know and say, yes, there was ejaculation, they're more likely to develop a CODIS eligible profile, which makes sense. We found that when there's more assaultive or penetrative acts, again more likely to develop a CODIS eligible profile. We also found oral contact. There's a lot of DNA in saliva. So oral contact specifically on neck and breasts were more likely to develop a CODIS eligible profile. We then have a whole bunch of variables that are associated with being less likely to develop a CODIS eligible profile. One of them, no huge surprise, is bathing or showering. If a victim bathed or showered between the time of the assault and the time of the medical forensic exam, 42% of those that did not bathe developed a CODIS eligible profile while 21% of those that bathed developed a CODIS eligible profile. Now we always share that it doesn't matter if they have bathed or showered, we still want to see them. And that is absolutely true. In fact, our longest case in our dataset of between the time of the assault and the examination and the victim bathed or showered twice was eight days, and we developed a full CODIS eligible profile from the vaginal swabs. So if they have bathed or showered, we still can develop an STR DNA profile from an external swab, but it's more likely to be an internal swab. The other big variable that that impact decreases the likelihood of developing a CODIS eligible profile is the length of time between the assault and the examination. But as I said, we have a case where it was eight days between the assault and the examination. So for jurisdictions out there that are not yet at five days or longer, I would hope that they would relook at that and consider extending their length of time that they would do an exam. Another huge variable that impacts less likely to develop a CODIS eligible profile is if the victim reports a loss of consciousness or awareness. When we do a sexual assault medical forensic exam, we ask, at any point did you lose consciousness or awareness? And 49% of the time, almost half of the time the victim says yes. So what happens in those cases is a victim is less likely to be able to recall what touch what, what happened. And so we don't have that same level of information to guide the examination. So we find we're less likely in those cases to develop a CODIS eligible profile. The last two items that we found were less likely develop a CODIS eligible profile is one, if it was a multiple suspect sexual assault. We've made huge strides in the DNA world in developing CODIS eligible profiles from mixtures, but that can still be challenging. And then if there was a condom used. But we have really interesting findings on condom use. We found that only about 7% of the cases, the victims say, yes, the assailant used a condom. When you compare that to consensual sex and there was a college study done which shows about 42% of college students use condoms. Again, that low condom use is a sign of nonconsensual sexual act because the couple is not discussing how do we prevent sexually transmitted infection, how do we prevent pregnancy. So we see this really low condom use. But even in those cases where the victim says, yes, a condom was used, 31% of them developed a CODIS eligible profile, even with condom use. So we have a manuscript coming out that's going to cover this and additional factors. But yeah, we've got a lot of information to share.

Tyler Raible [00:25:14] Julie, all of that is incredible. And there's just so much to unpack. And I want to get some clarification for our listeners just to make sure that I'm

understanding it correctly and that we're sharing this information as accurately as possible. It sounds to me and please correct me if I'm wrong, that you did see a correlation between the let's say, like the level of violence, the level of aggression and the ability to obtain a profile. Is that correct?

Julie Valentine [00:25:44] Yes. We found in cases that were more violent sexual assaults, strangulation, more penetrative acts, more grabbing and holding. These cases then also led to more victim injuries, both non anogenital and anogenital injuries, that all of those factors are statistically significant in our ability to develop a CODIS eligible profile. So the more violent the rape, we have found a higher degree of developing a CODIS eligible profile.

Tyler Raible [00:26:21] Can you first and foremost tell us a little bit more about these findings regarding male victims as opposed to female victims in terms of biological sex?

Julie Valentine [00:26:33] Yes, we found substantial differences. And this, of course, is looking at genitalia as someone who is born or post-surgery male female genitalia. As we talked about, we've done most of our deep dive into those with female genitalia. We found that those with male genitalia are much less likely to develop CODIS eligible profiles. We think that that really is due to the anatomical differences. A vagina, which is an internal organ, is more likely to hold on to a foreign contributor DNA than a penis, which is not an internal cavity or even a rectum. We found specific things when we looked at those with male genitalia regarding victim characteristics. One really interesting finding is we found that men, 19% of them, reported a physical or mental impairment compared to 9% of women. We think that having a physical or mental impairment for men heightens their vulnerability for sexual assault, even more so than what we found for women, which was interesting. We found in the male men cases an increased amount of anal penetration, 57% with assailant's penis, 34% with finger and hand, 15% with an object. But interestingly, we found that the swabs that are more likely to develop a DNA profile were not those internal rectal swabs, but actually the external genitalia was more likely on a man to develop a CODIS eligible profile. We also found again, this goes back to the anatomical differences I talked about, that our longest length of time between assault and an examination for a woman was eight days. Well, for men we found the longest length of time was only 48 hours. That's about two and a half days. So when we think about how this impacts practice, we want to educate multidisciplinary partners that it is really important that we see men victims of sexual assault as early as possible to do an examination.

Tyler Raible [00:29:20] Those numbers are honestly kind of surprising. The 19% in particular is alarming. And just to make sure I'm understanding correctly, when you say physical or mental impairment, we're talking not just like inebriation.

Julie Valentine [00:29:35] We define physical or mental impairment as a senses loss; blind, deaf, cognitive impairment, intellectual disabilities, being in a wheelchair, things that can't be changed. These are physical and mental impairments.

Tyler Raible [00:29:53] Perfect. Thank you for the clarification. I'm interested in, do you have any information on maybe what the average length of time is between the incident? If eight days is the max. Is there like an average time span that you would normally see these cases?

Julie Valentine [00:30:08] I think our mean is 23 hours between the time of the assault and reporting. The majority of our victims, like 75% of the patients or victims that we see report within 30 hours. But we do have those cases, you know, I think of many patients that I've taken care of that have come in later and they've said, I didn't know what to do. I didn't know if I should report this, and many times they talked to a friend or a family member and they shared this happened to me on my date or this, I don't know what to do. And many times it's that friend or family member that will help them understand what has happened to them and guide them to reach out to a hotline where they can guide them to go into report. So this goes back to the importance of really educating all of society about the importance of believing and supporting survivors. And I will tell you, when I see a patient, the first thing I do is I tell them, you are in charge of this examination. For anyone over the age of 18, they decide if they want evidence collected, if they want medication, if they want to talk to law enforcement. It's really important we give them back a sense of power and control. And so we give them that option of where they want the next steps to lead to.

Tyler Raible [00:31:56] It seems to me that in terms of patient care, regardless of whether or not they want to have evidence collected, it's important that they would come in and have an exam anyway just to confirm that they're health wise, they're okay, right?

Julie Valentine [00:32:13] We would hope that anyone who has experienced sexual assault comes in for an examination. One, to place them on a pathway of healing. One is to give them resources for that healing, for mental health, emotional health and physical health, to provide medications to prevent sexually transmitted infections and pregnancy, but also to help them know you are healthy. I will never forget I had a patient who I was called in to see on an emergent examination, and this patient had recently been raped, and when I went to do the exam, this patient said to me, well, how will you be able to tell from my other injury compared to now? And I said, has this happened to you before? And this patient shared an experience of being sexually assaulted under the age of 14. So as a younger person. And all of this time, this patient thought they were scarred down there, that everybody would know. And for me to be able to do the exam and say you are healthy, you have some injuries, but that part of our body heals. Really, there's a lot of blood flow in the genital area that you will heal. That was really life changing. So, yes, having an examination also to let them know that they are going to be on this pathway of healing and also that they are healthy individual is really important.

Tyler Raible [00:34:05] Julie I think that's one of my favorite things about being able to sit down and talk to you is that you have these experiences that really inform your research, but they can, how do I put this? They make it more real, right? A lot of times we can look at these statistics and they're just numbers. But when you've actually spoken or worked with survivors, it solidifies a lot of that research. I admire what you do, and I think it's all incredible work. So, Julie, you have all this research. I want to talk a little bit about why the more aggressive acts. Why do they produce more samples? Is this a matter of physical contact or are they just leaving things behind? Can you give us a little bit of background on the why of this finding?

Julie Valentine [00:34:56] We think the reason why when there's a heightened degree of aggressive, including assaultive penetrative acts, non-fatal strangulation, that those factors are associated with a higher likelihood of developing a CODIS eligible profile is because they all indicate more contact between the assailant and the victim. And when you have more contact, you have more sharing of DNA. And that can be DNA, everything from seminal fluid, sperm, saliva, huge amount of DNA and saliva, and also touch. We've done

other webinars and we have other articles and other work that we've done on touch DNA and sexual assault. And we have found through our research that in groping sexual assault cases where there has not been an exchange of any type of bodily fluid, we are still able to develop a CODIS eligible STR DNA profile. We also can look at Y-STR, DNA associated with the Y chromosome, that we're more likely to develop from touch DNA. But DNA is DNA, whether it come from epithelial cells or saliva or sperm or seminal fluid. And so when we really want to harness the best capacity to develop a probative DNA profile, we need to look at all of those factors. I had a patient who was held down by one person on the top part of their body and vaginally penetrated by another person. I collected for two different suspects or assailants. One was holding that person. And we know that touch DNA, when there's more friction, when there's a longer length of holding, if that's like a really firm grasp, all of those things, how somebody is being held, can impact the development of DNA profile from touch or skin cells.

Tyler Raible [00:37:05] I'm assuming then that the type of material would impact that as well, like the texture, the weave type, all that stuff.

Julie Valentine [00:37:14] So there's several factors that impact touch DNA. Some of the factors are actually related to the shedders, meaning the person. We know that men shed more than women generally. We know that sweat, dry hands, both of those things can increase shedding, but also the substrate of what is being touched. So clothing may hold on to touch DNA, especially if there's more of a texture to it than skin with less texture. So when we do an examination, we absolutely need to consider what's the substrate of the material that is being touched.

Tyler Raible [00:37:55] I want to make sure that we talk about other parts of your research. So I know you've recently wrapped up a rather large study on the use of dating apps in sexual assault. Do you have any findings you'd be able to share with us on that one?

Julie Valentine [00:38:08] We went into this research really with a pretty basic question of are sexual assault where somebody meets on a dating app and then is sexually assaulted at the very first in-person meeting, what we call DAppSA, dating app facilitated sexual assaults, are those different than other acquaintance sexual assaults? Again, I kind of hate the term date rape, but many people would say that term. So we had to look at cases where they were sexually assaulted at the first in-person meeting because it was too hard to tease out other cases where maybe they met on a dating app and two weeks later they were sexually assaulted. But we found that 14% of the acquaintance sexual assaults actually fit this DAppSA criteria where they met on a dating app and then were sexually assaulted at the first in-person meeting. And this all started because anecdotally, my forensic nursing team and other forensic nurses across the country, we were saying, wow, we feel like we are seeing a big rise in sexual assaults where the person meets on a dating app. What we found is incredibly concerning. We found that in these DAppSA cases, they are much more violent cases, with one third of the victims being strangled during the sexual assault, a quarter of the victims having breast injuries, higher amounts of penetrative acts, and with victims having more non-anogenital and anogenital injuries. We also found that the victims in these cases, 60% of them, self-disclosed mental illness, which is we've written other articles on mental illness as a significant factor and vulnerability for sexual assault. So when we gathered all of our information from this study, we believe that violent sexual predators use dating apps as hunting grounds for vulnerable victims.

Tyler Raible [00:40:23] I'm curious, broad strokes, just interested in how you went about collecting this this data in particular. Was this from the same dataset or was this a separate effort?

Julie Valentine [00:40:32] We collected this dataset as part of the same data. In 2017, we added a variable that they met on a dating app and then were assaulted at the first in-person meeting. So this is collected from 2017 through 2020 and this has not ended. We actually are continuing to add to this dataset. What we're hoping to do in our next manuscript looking at DAppSA cases is we're actually going to follow those cases through the DNA analysis findings and then a subset of those cases to follow, to look at the criminal case outcome or prosecution.

Tyler Raible [00:41:18] To me, what I find so important is the follow through. And I think that's one thing I really appreciate about your research, is that it's not just looking at instances, it's looking at everything that follows after. And maybe that's just a carryover from your role as a SANE. So I want to give you the last word here. What message do you have for the community? What impact do you want to make? Is there anything that you want to share with our listeners?

Julie Valentine [00:41:46] I think in closing, since we've really focused a lot on DNA in this episode, the message when in doubt, collect. DNA analysis methods continue to improve, and regardless of the age of a victim, we're talking from babies on up, that if you think that there might be an option of developing a DNA profile, collect. If we're not able to obtain any helpful information now, who knows ten years from now what we might be able to do. So when in doubt, collect. And then for the general public that if someone has experienced a sexual assault to please report. Report for your own health, report to get those resources, report so that then you have options as to if you want to have evidence collected and move forward in investigation and prosecution. But if someone doesn't report, then they don't have those options.

Tyler Raible [00:42:56] Thank you, Julie. What an excellent way to wrap up. Julie, thank you for sitting down with Just Science to discuss your recent, your ongoing research, your research article. And for those of you listening, the article is titled Dating App Facilitated Sexual Assault a Retrospective Review of Sexual Assault Medical Forensic Examination Charts. And thank you for all of the other work that you're doing. As always, absolutely wonderful to get to sit down and talk to you.

Julie Valentine [00:43:20] Well, thank you, Tyler. I always love visiting with you. So thanks for having me back.

Tyler Raible [00:43:24] For those of you listening at home on your drive to work, be sure to like and follow Just Science and your platform of choice. For more information on today's topic and resources in the forensic field, visit ForensicCOE.org. I'm Tyler Raible, and this has been another episode of Just Science.

Voiceover [00:43:42] Next week, Just Science sits down with Dr. Julie Valentine to discuss prosecution rates of sexual assault cases. 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.