

[APPLAUSE]

>> Thanks. Good afternoon. I put up Mister Rogers' quote because this really is about the helpers. When we think about trauma-informed practices, it begins and ends with us as the educators that are supporting these kids through difficult times. So in my hour today, what I'd like to do is share some snippets from some of the conversations and reflections that we've had in districts. And also some of the ways that we've tweaked behavior strategies so that they more tightly fit the needs of kids with trauma histories. So we'll be doing that. And officially, also, I hope to be able to briefly conceptualize trauma in an educator-friendly way. And explicitly connect trauma-informed practice with -- with the practices of PBIS. I also would like to make sure, because I know when I go to a workshop or a session here I'd love to walk away with a strategy or two, so I will end my time with some strategies. And again, they are largely tweaks of things we already do really well in education. But they are things that my colleagues in the field have found make a difference for kids who are just a little bit more fragile. When we talk about trauma-informed practice, for me, it's about several fields of converging research. And we're really looking at things that are scientifically based. So the study of poverty and looking at the brain science related to poverty and how poverty affects children's brains as they develop. And a great resource for that is Eric Jensen's book, "Teaching with Poverty in Mind." And also, from the field of PBIS, and, of course, Horner and Sugai, and all the wonderful PBIS implementers and researchers are really an important part of this. Next, we also look at the brain science. And some of the people that have informed me significantly in terms of brain science include Dr. Bessel van der Kolk. He is on your sheet. If you turn to the back of the handouts, and I kind of rained handouts across the room because there are fewer of you than there are chairs, the very back has a list of resources that I use in developing my work in this field. It's updated from what's on the PaTTAN website. So if you've got the one from the PaTTAN website, I've added a lot more. And I will update it on the website following our conference here. So Dr. Bessel van der Kolk does a lot with brain science and trauma. And another person that's really been pivotal, not so much a trauma scientist, but Dr. Jay Giedd out of the National Institutes of Mental Health is someone who did, um, longitudinal studies with 1,800 children from the time they were infants up through their adulthood. And his work has actually allowed us to understand what is typical development in the brain and when there are developmental phases that we didn't know about before and also how children use their brains in a different manner than how adults use their brain. So his work has really informed the practice of brain science. And it has allowed people like Dr. van der Kolk to look at what's different with kids who've had trauma histories. How does their brain function differently than typical brain or a child's brain without trauma? And finally, of course, trauma-informed practices wouldn't be that without looking at the field of trauma in the seminal work of the ACEs work, "Adverse Childhood Experiences" and ACEs connections and a lot of those wonderful website and groups, think tanks, that are doing a lot of work continually in the area of trauma. And I did notice there are two trauma-related trainings tomorrow that are going to go a bit deeper in ACEs if you're interested in that. So all of this kind of informs our practice and gives us a sense of what we need to do to make school a better fit for kids of trauma. So I'd like to stop for a minute and have you have a chance to talk with someone around you. When you hear the word "trauma", kind of what jumps forward in your mind? I'm going to ask, and when we come back, for you to shout some out. And I'm supposed to repeat them so that everybody can hear them, and then we'll go from there. So talk for a minute with the -- or 30 seconds with each other. [CHATTER] Okay. If I can call you back in 10, nine, eight, seven, six, five. All right. Somebody want to shout one out? When you think of trauma, what do you think of? I'm sorry.

>> An injury.

>> An injury.

>> Okay.

>> Loss.

>> Loss.

>> Fight-or-flight.

>> Fight-or-flight.

>> Abuse.

>> Abuse.

>> Neglect.

>> Neglect.

>> Constant stress.

>> Constant stress. Okay. All right. Good. Those all are part of the big picture of trauma. So when we think about trauma and defining it, you've kind of already started to capture some of those definitions. So it's the result, and in your handouts, if you're looking them, it says, "the result of chronic or," but I would like you to put the word "and" because it is the result of chronic and/or acute stressors. We know some kids have an event. and it is an acute event. We also know some kids have pervasive stress, as one of you has already said, that kind of is throughout much of their short life. And some kids have, unfortunately, both experiences. We know that stress is very personal. You can have sib partners. And they experience the same event, whether it's a parent being deployed or the lost of a home and constant movement. They experience the same event, but they come out of that event very differently because trauma is so personal. It has to do with your gender, your age, your birth order, your responsibility, your personality, all of those things. And so we can't predict, if one sib has shown some symptoms of trauma, that there's other sibling is necessarily going to experience it the same way. It is not a cognitive experience. Trauma is very visceral. It's very much in the emotional part of your brain. And it can be even pre-lingual. Scientists have found that children as young as 5 months of age carry trauma from their early months into their life as they grow. And probably the most important thing for us as educators is that trauma results in neurological and emotional and physical dysregulation. So our systems of kids with trauma, many times, aren't wired the same way. And I think our speaker this morning talked about that. They're not wired the same way. And they may continue because trauma often lives on. And so they continue moving forward with some of these symptoms. So it may be a child who's very active, and that's part of their neurological dysregulation. There have been some studies that indicate that children of chronic trauma sometimes don't even sense their body in space. And that when they look at brain scans and the children touch things, their brain does not light up in a common pattern. They're actually not sensing it the same way. So it really changes not just their behavior. It changes everything that's kind of subliminal to the behavior. And the behavior may be, in fact, a symptom of some of the things that we see. Childhood trauma is different than PTSD for many reasons. And it's because they're little kids. Their brains are still developing. They're still in those very fragile early states of development. They also don't have histories and experiences. As an adult, when we

have a traumatic event, not that it isn't extremely significant, but when we have a traumatic event, we have a history of experiences in which that event happens. So we have coping skills we may have developed. Our strategy base may be bigger. We have a sense of our supports. But for children, their experience base is so much shorter that the traumatic events lives in a much bigger place and envelops more of how they view the world. Finally, Dr. van der Kolk talks about the fact that trauma is often, for children, intertwined with a sense of attachment. So we see the play-out of that for children. And you may have had some of these kiddos in your classes. And those are children who don't know how to trust. They don't know who they're attached to. They struggle with attachments. They struggle with attachments with their peers as well as with adults. And that's because the core issue of trust, and no matter which kind of psychological lens you look at it through, trust is that issue. So for Erikson, we know the very first thing kiddos have to do is establish a sense of trust or mistrust. And so if you have not been able to depend on a parent to provide your basic needs, to fulfill those, that shakes your Earth. It allows you to not necessarily feel like you can trust that you're going to be okay, emotionally or physically safe. And even families, and I think this is really important because we're going to talk a little bit in a minute about developmental trauma, there are families that are doing the best job that they can. But because of their circumstances, their child may still feel that they can't trust their parent to provide what they need. So families, for example, that do not have the income or the things that allow them to access things like a constant home, a safe home, they may have different people nesting in with them. They may not know that their belly's going to be full enough to sleep well that night. They may not know if they're going to be warm enough, all of those things. So you can have a parent that's very loving and yet, a child may still have some high stress levels in their life and in their body because of what that parent can't provide at that time. And if we look through the lens of behavior assessment, behavior analysis, we know that what often has happened is trust has been punished out. When I engage in trusting activities, if I'm in, as somebody said, an abusive or a neglective situation, I may have that trust punished out of my repertoire, trusting behaviors. Then we get them in school. And one of the things that we need them to do is to trust us, to trust the structures we set up for them, trust what we're asking them to do that they'll be able to do, all of those things. So you can see how that could present some issues for those kids as they interact with school demands. And finally, if we look through a CBT, a cognitive behavior lens, we know that many of kids of trauma view the world differently than other kiddos might. So they may only trust themselves. And they may do things that are self-sabotaging, or they seem to be so. So because I don't trust you as an adult, I'm going to push against you. And I'm going to create what I know to be predictable. And I may create chaos. And that may seem odd, but if I can predict it, it's a lot more comfortable than a world I can't predict. And so I may not trust adults. And I also may, if I view the world as full of, defined by, scarcity, if I haven't been able to get the things that I need to feel okay, I may also view my peers differently. So I may, in a world of scarcity, the teacher's attention, I'm competing with my peers for that. I might not look at my peers as a source of joy. So we may see what we would call maladaptive behaviors. But if we think about the underlying cause, we start seeing them as adaptive to what this child has known. And our goal, then, is to move them into feeling more secure, feeling more they can trust the world and move into more typical behaviors. So I mentioned developmental trauma. Developmental trauma is often associated with poverty. Another word that is said to mean developmental trauma is pervasive trauma. So this is when it's the chronic sense of I will not have my emotional and physical needs met. It's that barrage of little things all the time. They may not be huge things, but it's the fact that there's chronic uncertainty in my life. And that raises my stress levels. This morning, our speaker talked about allostatic load. We know that children in poverty carry a higher allostatic load. And what allostatic load means, it's the stress chemicals that are carried in our brain and in our body. And one of the things ACEs studies does is it looks at how that chronic allostatic load impacts people all the way down the road into their adulthood. And we see things like higher levels of heart attacks, higher levels of asthma, higher levels of blood pressure issues,

digestive issues. So we know that it affects the brain, but we also know that chronic stress affects the body. So what we do has a lot to do with how our kids feel emotionally, but it also has a lot to do with their potential future health. So it's a big thing we do all the time. And we know that. We carry that as educators, but it's even more so for these children of trauma. So what's our role? Our role isn't to necessarily know everything that's gone on in a child's life. Many times we're not privy to that, shouldn't be privy to that. Sometimes we might know some of those things. We may understand that a child's parent has just been incarcerated. And we may be able to connect up some of those events with a change in a child's behavior. But our goal should be, really, to understand the general risk of our population. So if we serve high numbers of children with socioeconomic issues, we might know we need to structure things across our school to support those kids. So we want to think about universal design. And guess what's universal design? Good old PBIS. It really makes a huge difference. When we have those practices in place, we are already at a tier one level doing many of the things that many of our kids of trauma need. And if you want to look at some interesting videos, good videos, Wisconsin has really integrated their PBIS with trauma-informed practice. And they've made videos for custodians and cafeteria workers and educators, parents. And they're out there to be viewed. And they're very good. So now, I'm going to ask some of my colleagues who've been on this trauma-informed journey with me, from the school district of Lancaster, to come up and help me with a little visual and simplified depiction of the brain under stress. So if you guys could come up, I'm not supposed to really leave the speaker. I'm going to try to do it briefly, and I'll be back. All right. First, we're going to look at a brain that's working well. So when our brain works well, when everything's good and we're not under stress, we have a stimulus. And Dana is our lovely stimulus, I believe. No, no. Dana's to the side. I'm sorry. Amanda's our lovely stimulus. The stimulus doesn't actually travel in the brain, but it has the brain light up in certain patterns. So this stimulus is going to move, so you can see what part of the brain she's lighting up. The reticular activating system is the initial gateway into the brain. And so it's going to decide what stimuli this brain pays attention to. We love the stimulus. It's going to invite her in to activate the brain. Okay. Next, the stimulus is going to light up, and Amanda, if you'll move down between. Two parts of the brain actually go between the [INAUDIBLE], yep, two parts of the brain that light up almost simultaneously. The thalamus is kind of the first cognitive sorter. It does a lot. All these brain parts do a lot more than I'm talking about, but just as a general concept of stress. So her little symbol is a map. It's going to give it kind of its first cognitive tag where it'll end up in the brain. And the amygdala is going to give it its first emotional tag.

[BELL RINGS]

>> We don't remember much unless it gets an emotional tag. So if I ask you, "What did you have for lunch last Friday?", does anybody remember? Once ...

>> [INAUDIBLE]

>> How do you remember? Somebody want to share?

>> I didn't have lunch.

>> You didn't have lunch. There's probably an emotional tag associated with that. Or you're a teacher, and you never have lunch. Right. Okay. We remember things that are routine without much of an emotional tag. But usually, if we're going to retrieve something, if it's going to be easily retrieved, it's going to have an emotional tag. This is why we do a lot of things in school that are to invite kids' emotions to be alerted, right, when we make personal connections. We want that emotional tag. We

want them to talk about it. That helps with an emotional tag. Okay. The next part of the brain that's lit up is the hippocampus. And the hippocampus is our working memory, short-term to long-term memory. And we want that hippocampus to spend some time with the information. And then, eventually, the last part of the brain to be activated is the cortex. And so this is the upper part of our brain and where most of our information lies. If this happens repeatedly with the same stimulus, we call it learning. It's what we do. Practice makes ...

>> Perfect.

>> I kind of set you up. Practice makes permanent. Some of you said that. It makes perfect if it's going to be really healthy for someone, but it's permanent if we keep on practicing. So this is all fine and well, but let's look at a brain under stress. So now, Dana, if you'll join us at the end. Okay. You're back there. Now, Amanda is no longer this wonderful math fact we were learning. Now she is a car coming through the intersection. You're driving. You have a green. And there is a car coming through the intersection towards you. The reticular activating system, hopefully, will notice that stimulus. Okay. She's going to enter the brain, be welcomed in, hopefully. This is why we don't text while we drive, right? Come on in. And she's going to go where she normally stood, between the thalamus and the amygdala, except something very different is going to happen. The amygdala is going to give her a big emotional tag.

[BELL RINGS]

>> Lots, lots, lots, lot.

[BELL RINGS]

>> And, at this point, the brain starts functioning differently. The thalamus does not really get activated, and instead, amygdala becomes sort of the boss of the brain, if you will. So the amygdala is going to decide that the normal players are not going to be activated here, and instead, she goes with her new BFF at the end of our line, which is the, the amygdala goes there [LAUGHS]. They're so sweet to have volunteered. Okay. And so the next part of the brain that's activated is the hypothalamus. This is the pharmacist of the brain. When the pharmacist of the brain is activated, it pours something called cortisol, stress chemical, into the brain. It also notifies the rest of the body to pour in adrenaline. It is our, somebody said it earlier, fight-or-flight. By the way, in the case of kids with trauma, sometimes there's also freeze. So now we have adrenaline flooding the body. We have cortisol in the brain. This is a good thing when that's a car coming through the intersection towards you because you want to be able to hit the accelerator, hit the brake, brace yourself, whatever you need to do very quickly. You do not want the brain to be doing things like, "I wonder who else drives a blue Prius. I wonder if that, you know, what kind of mileage they get." You don't want them accessing those cognitive parts. You want them getting to what's going to keep you safe. So this is very effective for us, when our brain operates this way. However, for some children, the stimulus of that math problem may activate this series. And therein lies our challenge. So we'll talk about that a little bit more. Thank you so much, ladies.

[APPLAUSE]

>> You can just grab them. So the brain under stress, all of us will downshift when the brain is under stress. Children who have trauma histories are going to downshift, as represented by the red arrow, are going to downshift much more quickly. And that is because they already, their amygdala is already kind of hyper-reactive. And we're going to talk about that in a moment. So what causes an amygdala to get

excited? Well, one of the things, I want to start with the bottom one first, is new information. Actually, when we learn something new, the amygdala sort of perks up. And one of the things we often do in schools is do activating strategies. That causes a light spray of cortisol across the surface of your brain that makes the brain go, "Hmm." We like a little bit of cortisol. It makes us pay attention and alert. The problem is if we have too much. And so high emotional experiences will flood the brain with a great deal of cortisol. If it is a situation like this, we work through it. We actually burn that cortisol off, if it was the car coming through the intersection, because we're doing a lot of things. But has anybody ever had a close call like that? Think about what your body feels like. You want to shake it off. You just feel it in your body. You need to. Your reaction that was commanded is actually not able to be big enough if you're sitting in a car. You usually need to do a little bit more. And so those high emotional experiences, and by the way, they can be positive. If you've ever forgotten where you are because you're so in love with someone, or if you've ever done things that you sacrificed some other basic needs because you have a high emotional need to be with someone or to do something. So we get a little bit of cortisol and maybe don't think quite as clearly with positives, but we know with the negative that becomes a much bigger issue. So high emotional experiences, new information. And this morning, I'm not going to remember the word she used. Anybody remember it? Thesis wasn't it. But it means, she talked about kindling. And she had the dry sticks that were on fire. For kids, James Garbarino talks about it as kindling and talks about how, for children that have experienced a lot of stress, their brain is just ready to go at any moment. And that is because of changes to the amygdala. So cortisol is a big deal, especially high levels of cortisol. It blocks communication across neurons. So what it does, if we think about how communication happens in our brain, if we have a nerve cell that's a neuron, starts here with the dendrites. Goes here. This is the end of it, where my elbow is. That's the terminal buttons. And then it goes to the next neuron that picks it up. And it goes to the next one, etc. Well, cortisol in the brain, this is a chemical change. This is electrical, which is how they do MRIs. And this is a chemical change. And it's a chemical signal. When cortisol is in that synaptic gap, it actually sludges up your ability to think. And so when I talk to children about this, I talk about the difference between swimming through water and then, if you have some cortisol, it's like swimming through jelly. And if you have a lot, it might be like swimming through peanut butter. You just, your brain is not functioning smoothly. And most of us have had that kind of experience at some point. A real typical one is somebody's walking towards you. You know you should know their name, and you're standing with somebody you're going to have to introduce them to. And the closer they get, the less you can pull up that name. That's just, we've got a little too much stress chemical going on. And, of course, once they go away, the name's there because we're no longer under that level of stress. It's burnt off, and it's gone, and we can retrieve. So we know that cortisol blocks even known learning, but it certainly doesn't allow us to lay down new learning. And another kind of interesting thing, I think, when we think about watching how some of our kids function, it also doesn't let us discriminate well between relevant versus irrelevant information. So I'm going to jump into a strategy that a colleague of mine used a little bit ahead of time. And what he did, knowing that his students had a hard time taking effective notes, because a lot of them came from impoverished situations, and he assumed that he needed to help them pay attention to what was relevant versus irrelevant. So as he was talking, he actually created a nice big yellow circle on the floor of his classroom, high school teacher. And whenever he would say something that he wanted to make sure they put in their notes, he would use the cadence of his voice. So he might say something like, "mitosis." He would call their attention through the cadence of his voice, but he stepped into the yellow circle. And he taught them, like we teach procedures in PBIS, he taught them that that means write it down [LAUGHS]. That's important. And then, over time, by working with these students, they learned the cadence of his voice. He didn't have to step into the circle anymore. And eventually, his goal was that they would start being able to pick out what was relevant because his classroom became a safer and safer place to be. He hoped that their brains would be in better chemical

balance. So cortisol stays in your brain until it's burned off, just like adrenaline stays in your body until it's burned off, which is why you do the shake-it-off kind of thing. Interestingly, even though I did sort of this little simplified version of what goes on in the brain, there's a difference, statistically, a difference between males and females. Males tend to burn off their stress chemical, cortisol and adrenaline, through, what does an upset boy look like? Somebody call it out.

>> Anger.

>> What does the anger look like? How do they show that?

>> Movement.

>> Movement, right. Boys, in general, will move more. Girls, how does a girl who's stressed out look or do?

>> Cry.

>> Cry, right. We get crying, or we get talking. Because the female brain has a wider corpus callosum that connects the two sides of the brain, it allows for cross-talking in our brain more easily, especially little girls' brains. Their language centers are very wired in. So often, girls under stress will be able to go to the language centers and will burn off some of their cortisol through thinking and talking and language. They will also cry. And when you cry, can you imagine? Does your face look a little different if somebody is crying when you're redirecting them versus looking like they're going to slug you? We have micromessages that we have on our face that affect that student. But also, we often contain voice, and they're not able to burn it off. They go sit in the office, or they go sit in time-out. And so they're not burning their stress chemicals off. Girls are doing that talking. And they may still have to go sit somewhere, but they've burnt off some of that stress chemical. Also, as they're crying, they're looking out at someone. If not you, there's somebody behind you, probably, that's looking at them like, "Oh, you poor thing." When you get that, "Oh, you poor thing" look, you actually get a little, little squirt of dopamine, which is calming chemical. It's the runner's high chemical. And so that brings, if we can think about, conceptualize children under stress, or children of trauma, if this is the set point that means I no longer think rationally, I no longer act rationally, our kids may come in already, because of their traumatic events, much closer to that set point. And so let's imagine a girl who then gets corrected for a behavior. She's done something warranting correction. And now she's here. She's about ready to flip out. But then she looks across, and one of her friends is going, "you poor thing." And she gets a little dopamine. That's a common chemical. It pulls her away from the situation. A boy who maybe is right here, and now he has to sit still, he just sits there. And the cortisol sits in his brain. And one of the problems with that is while it's in the brain, it damages the hippocampus, which is our short-term to long-term memory. And it damages the prefrontal cortex, which is all of our executive skills, so self-regulation, judgment, organization, organization, delay of gratification, persistence, all of those very important things. So it damages two parts of the brain that we really need with us when we're educating kids. So we want to get that cortisol burnt off. You have a question, yes.

>> This damage is permanent damage or temporary problem-solving, or is it long-term?

>> Love that question. Thank you so much. "Is it permanent damage?", she asked. One of the things we know is children that are chronic stress, they have seen that they can visualize that their hippocampus, which is a little C, is actually smaller than other children's. But here's the really good

news: As their life has less stress in it, the hippocampus does regenerate. And it can regrow. So we've learned a lot about where the brain grows and how it heals. And the hippocampus is really good news for us. So the more we keep that cortisol out and the more we can keep that not being present, the more we have the chance for that child to have their short-term to long-term memory regrow. The only part of the brain that really gets more robust in the presence of cortisol is the amygdala. We get more and more emotionally reactive. And so the child kindles. That's that thing. I'm ready to go at all times. I'm always here. So when we think about strategies, what we're trying to do is, how do we bring these children down, not add to the stress level? And also, what can we do that actually brings the cortisol levels down and also may introduce dopamine or calming chemicals? So when we think about those trauma-informed practices, one of the things we want to do is interpret behavior differently. And we also, then, want to design our practices a little differently. And many times, that little tweak is going to make the biggest difference. I think you'll see that when you see some of the things I'm going to reference that are strategies. There's a recent Stanford study that is, again, talks about the power and the importance of what we do and believe in kids. They've looked at teachers' mind-sets. And they've found that teachers that took time to reflect on the quality of a child's life, the why behind why they're engaging in what they're doing, to build compassion for that child, and also, if those teachers thought about what they did that made a difference when they used it, so a different strategy. So maybe, rather than raising one's voice, calling the child over to you gently or going over and quietly talking to them, what they've found is that immediately translates to a reduction in office referrals and a reduction in suspensions. That if a teacher has an empathic mindset, the kids are reacting to that teacher very differently. And we see, of course, teacher behavior changes. And the student behavior changes as well. So when I talk about this different lens, if we think about a child, and I think about the kids that I get called in for behavior consults, and it'll be this kid's oppositional and defiant and this and that. And whether that's a label that they've gotten officially, or it's just the language we use talking about a set of behaviors, we have a certain pose that we're going to take in response to that. When we think defiant, we tend to get a little defiant ourselves if we aren't in that empathic mind-set. And so if we kind of view that child, then, as maybe they're a kid who just doesn't, you know, they're very concerned about what they can predict in life. And so they're oppositional because they can predict if they take control of things, or they're defiant because they're taking control of things. So if we start viewing it, "Ooh, they just need to be able to predict a little bit better," that gives us a whole assortment of things we can do for that child, many that we pull from the field of autism. So this is where we can take this collective knowledge we've been building all along and, again, think universal design. If we have a child who struggles with lack of predictability, then we've got a whole boatload of things we can do: standard practice in a classroom, like having a schedule and announcing when there's going to be a change. If we see a child who's uncontrollable, children who flee, leave a classroom, high school, have a acting-out episode and stomp out of the classroom or sneak out when the teacher's back is turned and they don't attend, what if that child's just seeking a safe place? So we stop seeing them as uncontrollable, and we start thinking about they just need a sense of safety. That gives us, again, as educators, a really good bunch of things we can go to, because we're good at building safe places. And there's a reason why the first thing that countries do when there's been a natural disaster, after they meet the very basic needs of folks, is they get the schools back up and running. Because we're good at creating predictability and at creating it safety. And so how do we kick that up a notch for a child coming from trauma? So these are from a UMass study that is in the references in your handouts online, and they talked about, and I just had just a big chuckle when I started reading this study, because here it is, Rob Horner's big cornerstones of PBIS. Positive, connective relationships, predictable, consistent environments, and safe environments, physically and emotionally. So there is our PBIS, right there. Of course, they talk about other things. And some of the things we're looking at in some of the schools with whom I'm working, things like how do we help kids cultivate a sense of agency or have a positive identity? How do we have,

but think about what we do with transition plans for many children, futures planning? So it does tie in with a lot of other practices that we're doing. But I want to look at these three specifically and connect them up with PBIS. So we're going to look for strategies that decrease the stress chemicals and also work to not increase them. So proactively, now, this is the research around brain slots we have. And if we have more time, I'd have you do a brain slot activity. But, if we think about brain slots, so depending on the children you serve, they may have four plus or minus two. And an interesting thing is, the poverty reality is, because we can look at children coming from poverty and they've done allostatic load tests on them, they find that children coming from poverty have about a 20 percent smaller working memory, that hippocampus that's shrunk because of the chronic stressors of poverty. We know there's certainly resiliency factors we can build in, and we're a big part of that. But if we know that, how does that change practice? If we know that there are some children in our classroom that, because of their living conditions, because of the quality of their life, they're not going to be able to hold on to as much information in their working memory, what do we do? Well, one of the things that's a wonderful thing is we become more predictable, because if we use predictability, then that occupies a slot. I know the routine I'm supposed to do when I come in from the bus. I know what I'm supposed to do when I come in from my class. When we teach procedures, that predictability allows us to not dominate the brain slots. And it leaves more brain space, working memory space, for that child to learn. And the other wonderful thing about that child learning is that has everything to do with our sense of agency and positive identity. And it also, when we have rigor, because it's really easy when we think about kids of trauma to feel really sorry for them, but what we know is rigor actually allows a kid retreat from all the complications of their life. And it becomes a wonderful safe place. So if we set them up for using as much of their brain space as possible for learning, we can introduce a lot of rigor. They can have success. And that starts changing how they see their worlds. Predictability also allows us to not add to stress. Most of us will do things, like, we'll look at our calendar ahead of time, before the day starts. Or we'll overview an event that's coming. We have ways that we try to create predictability in our lives so that we're not stressed. And so when we have predictability in the schools, it allows kids to not have add-on stress on top of what they might already have from other life conditions. The other thing that predictability allows us to do is that prefrontal cortex that may have had some damage from cortisol, stress chemicals, we're actually using the upper parts of the brain, kind of the social norms parts of the brain, with routines in the cortex. And that allows the child to learn, use that strong part of the brain. The other thing about the prefrontal cortex is that it's under development. It is not in place like it is in adults. Does anyone know? Have you heard the research about the age that our prefrontal cortex is finally fully wired in? Anyone? Close. Twenty-one, now they're just saying 25 to 27 years of age. So there are a couple of periods of time that are really relevant during the school years. There is a surge and prune, so the brain surges lots of connections, and then it prunes away the unnecessary ones. That happens a lot in the prefrontal cortex for girls at about 11 years of age, for boys at about 12 1/2. If you are a middle school sixth grade teacher, fifth grade teacher, you may have experienced where girls all of a sudden get a lot more organized than boys? It's their brain. It's going through a surge and prune. And they're going to move. It's all in this executive function. So they're moving forward. So how do we support those boys while their brains kind of grow at their rate and in their unique way? So this prefrontal cortex, when we use the thinking brain or routines, we're actually using a part of the brain that's already pretty well-developed while the other one's coming fully onboard. Think of it as a temporary prefrontal cortex. So these things are all just things that are routine and predictability. No surprises there. This is just a picture of signs that are hanging in one of my schools. This is the principal and assistant principal showing the voice level of two. And we talk about it as when you're at a two in an environment, so if it's in the cafeteria, your two might be a little louder. When you're in the classroom, it might be a little softer. But a two is when only the people at your fingertips can easily and clearly hear what you're saying. So we have some nice physical cues, visual cues, which we know is a

strength. And when we think about a stressed brain, vision's even more important. So predictability's one of the big pieces. Relationship is probably the biggest. It's like real estate. It's relationship, relationship, relationship. Our relationships have the opportunity to be a buffer, a counterpoint for children, a time when they're not living in their traumatic space. Our instruction can lead them out of their space. They can have fun. They can laugh. Laughter releases dopamine, calming chemical. We also can model a really healthy way to be. We can do a lot of think-alouds as a great strategy for kids who are working on their emotional regulation. We can model that. We can think it out loud, show them what that's like. This is a strategy that's kind of nice for little kids that are, and for kids that have had a lot of loss. Somebody talked about loss earlier. When teacher goes away, the kid falls apart. I have had schools that say, "Yeah, we always get a special person for that person and for that child when the teacher's out on P Day." One of the things we want to think about, and this is just stolen from the little raccoon book, "A Kiss in the Hand", if you know that book, but it's the idea that the teacher remains with the child in some way, shape or manner. So instead of that lovely smiley face, we actually have a picture of the teacher smiling at the child. And, depending on the child's level, we basically say, "I'll be thinking of you while I'm gone today. Can't wait to hear about your successes." Positive, affirming and saying, "I'm still with you. I'll be thinking about you. Have a great day." Someone I know takes this card, laminates it, and on the back, she has the student draw a picture of one of her successful things that day. And the first thing she does when she comes back the next day is, "I'm dying to see your "while I was away" card." So that child looks forward to that moment. But, in the meantime, in her substitute folder, one of the things she does is she says, "Make sure, when you hand this card to the child, that you go, "Your teacher told me to say, "I'm really thinking about you."" And we see the reports form substitutes where that card is like a touchstone. Think about a child who's not sure how they can trust people they don't know. But I've learned to trust my teacher. That is sort of a bridge to that relationship. Now I'd like you to do something. It may be a little difficult, but hang with me. I need you to turn to someone near you and smile.

[ CHATTER ]

>> When we smile, especially if it's a genuine smile ... Anyone know the difference between a genuine and a fake smile?

>> Your eyes, the eyes.

>> The eyes. Your eyes crinkle when you genuinely smile. So when we smile, the act of smiling actually releases dopamine into our brain and body. It's a good thing. It makes us calmer and happier. When children receive, or when we receive, a smile, that also releases dopamine. So you can get a double dose if you're smiling and getting smiled at. So what a wonderful strategy. So we know kiddos come in to school. They get smiled at, although high schoolers will report they don't get smiled at as much, so we have to work on our high school smiling. And actually, one of our principals in one of the districts I work with said he's making a profound shift this year. Because he used to be the opening assembly for kids, was kind of a warning system. And instead, as he's moved into PBIS, he said, "I'm going to work on my welcoming system." And so that is a huge change. It's good for all the kids. It's really good for those kids who come from traumatic events in their life. So smiling is really important. Here's a simple adjustment. So most teachers are going to smile at their students when they come in the class. But Southeast Elementary and Lebanon School District decided that, with their fragile student population, they would post smilers throughout their school so that a child didn't just get their teacher to smile. They got, like, four smiles before they even got to their classroom. And that is a morning greeting that they do. Did kids, like, suddenly go, "Yay! I'm being smiled at?" No. It took awhile for them to become

comfortable with it. Many times, it was not trusted. What is that smile about? But you can see a profound change in the kids now that they've gotten used to it. They look forward to it. They go around a corner, and you can see that anticipatory thing of, "I know someone's going to be here to say "good morning" to me." What a great way to start your day. So think about that kiddo who's here because something horrible happened last night. By the time they come through all those people smiling, checking in with them, "You okay?" It's also a good diagnostic thing. You might need a little time with the school counselor [LAUGHS]. But they go through this, and they get to their classroom, and they're so much more ready to learn. So smiling, great strategy. Who knew? We can also look at proactive movement opportunities. So a lot of schools are looking, "How do we build more movement in?" If we think about that neurological and physical dysregulation, we have kids that are super-movers. And now combine a super-mover with a kiddo who is not sensing their, how they touch things the same way. It's a formula for disaster, right? That's a kid who may end up stepping on other people's fingers, or a kid who's bumping into people at the lockers. So if we start figuring out how to help kids regain some regulation in their systems, can we systematically do that? So lots of teachers have built movement into the classroom. But one of the things, as a strategy that's a tweak, is, anybody use GoNoodle or some of those app? Right.

>> Yeah.

>> Great. Kids love it. Here's a diagnostic thing. Do it. Do one of the fun ones. And then, just ask the kids to sit down. Those kids that can't sit down probably need a transition and need to learn to modulate their behavior, because so many kids are at zero or 60. And lots of times, we stop doing GoNoodle or other activities because these kids can't come down from that on their own. So here's the tweak. Teach them how to come down from it. So we might do a really fun dance. What do the fox say? And then we bring them down. And maybe we do slow arm circles. We may do some deep breathing. We do slow running in space. So what we're doing is we're teaching them how to go from 60 down to zero so that they can join everybody else when it comes time to sit down and get ready to learn. They get the benefit of the movement. We're not punished out of offering that opportunity because they've gone wild. And we have a child who's actually learning how to self-regulate. Some schools are looking at, not just a tier one, but sometimes at tier two, some of my schools are using yoga for a tier two intervention for some of their students. I have some schools, though, that have exercise as part of their morning routine for all of their students. We also have teachers relooking at seating options. And I have an elementary example here, but we can also think about it at the secondary level. So often, in classes, we'll say, especially elementary classes, we're saying, "Sit crisscross applesauce." Won't talk about what that does for kids who are the English language learners. Not sure what applesauce has to do with how I'm sitting, but that's another story. So we ask them to sit crisscross applesauce. Sitting how you are right now, which makes me feel sad, I'm sorry you're sitting for such a long time, but sitting how you are burns the least amount of energy off, least amount of stress chemicals, least amount of adrenaline. Sitting crisscross does the same thing. So what we want to do is give kids options to sit other ways. And so we say, "Sit crisscross applesauce." And many times, really good teachers will say, "Okay, everybody sit crisscross applesauce." And I'm observing, and I notice two or three kids that aren't that way. And she doesn't provide, or he doesn't provide, any correction. And when I ask them about that, they will say, "Because I know so and so can't do that. This other position's the right position." So here's a tweak. If we talk about predictability and our words having meaning for kids, because our words meaning what they mean is really important in developing trust, which is why we should never use sarcasm, because then our words don't mean what we mean, but if we use what we mean, and we say, "Get in your carpet position," and we have three pictures of carpet positions, that child then has an option. And it's an option that we've given permission to our words mean what our

words say. And so a lot of teachers have gone to these carpet positions. I was talking to a first grade teacher who said it was the, this simple tweak was one of the most revolutionary things she'd done in her long career. Because it ended the battles. And some of the things, looking at what OTs recommend, some of the positions actually, like half kneeling or pulling knees in tight, actually release dopamine. OTs will say the deep pressure into your shoulders and your hip joints actually releases dopamine, which is a calming chemical. So these other positions actually may be helping a child calm in addition to, if I have to hold my body up, I may be burning some stress chemicals off. At the high school level, what this looks like, or the middle school level, we're seeing some teachers who are now open to having kids walk while they're instructing, or walk while they're reading, or do the lean-and-read. So they're getting deep pressure into their shoulders in leaning and reading, or kids that are allowed to turn their seat backwards into a half kneel, half stand. And those kids are much calmer, much more focused because their body is comfortable. So reactively, just a brief, even more simplified view of the brain: When we're in distress, or if we carry a lot of stress chemicals, we have a big emotional brain that's reading most of the world and a very small cognitive brain reading the world, our vision gets more acute, and our hearing goes down. That informs us about some of the things we should be doing. And our heart, our system, is on go. We have, everything is saying, "Go, go, go." One of the sort of sad side effects of trauma is that children's systems are on go, but in freeze, all that go energy stays in the core, which is what's doing a lot of the health damage. Because they're not moving, they're not fighting, they're not fleeing. They're keeping it internally and frozen. And that can be quite problematic. The irony, of course, is, and I had someone say to me, "Well, the only thing that causes him to stop is, I yell." And I said, "I just want you to stop and think. Could you be retraumatizing that child, and he's actually freezing? Could it be that? Just think about it and watch. And think about what else you might be able to do." So I would invite you, at a time when, no. Let's just take a minute to look down. How might you change some of these things that happen in our schools? Hopefully not as much as they used to, but they happen in our schools. How do they not fit with that escalated brain? So take a minute and look down. Is there one you can think of a change for? I'm going to pay particular attention to number four because catharsis therapy is still out there. In fact, I just read it on LiveStrong's site as, you know, if you're upset, punch a pillow instead of a person. I think Angry Birds has a curriculum that has a Angry Bird thing that kids are told to punch. So there are different things out there still suggesting catharsis. Here's the problem with that. There are lots of problems with that. But here's couple of the big ones. If I feel this in my gut, I am sad, frustrated, lonely, angry, whatever the feelings might be, and I solve it, resolve it, by doing this, I'm chaining that together. And then if I say, "Oh, punch a pillow instead," and now I turn to this. And I can do that when I'm in a thinking brain, "What should I do? I should punch a pillow instead." Are we in our thinking brain when we get to that point? No. Plus we're now chaining this feeling with this action. We're chaining it with aggression. So a simple fix is chain this feeling with, "I need to work to get my body back in balance." So a physical exercise as opposed to aggression is a good fix, good tweak. So we're no longer punching, but we may go exercise it off. Yes.

>> I was going to ask, in connection to that, what about before disciplining, sports class of boxing, that type of thing? Taking some [INAUDIBLE]?

>> Well, you know, using boxing is a way to get out your ... I would say I would probably not direct it that way because that feels aggressive to me. And some people are using martial arts. But there are parts of martial arts, and if they focus on that, that are much more about self control and discipline and really getting in a quiet place and all of that sort of thing. I would be cautious with pairing a kid who maybe has seen lots of models of aggression with aggressive acts as a way to control their behavior or vent it out. I love this quite from Al Tobin: "These kids don't always ask us for what they need in the way that we can hear it easily, so we have to learn to hear differently." So this is my "don't throw tomatoes at

me" part. I'm going to challenge some of our classic classroom management systems. And in your handouts, you have a high-risk, low-risk evaluation tool, second page from the back. And this is something that I developed in tandem with some of the wonderful teachers I'm working with who are redesigning their classroom management systems. So we have systems. The very most popular, assertive discipline, 1970, Leo Canter, red, yellow, green. That's very popular. But it was not developed for kids of trauma. So if we use it, and we use it very publicly, I have concerns about kids, who may already feel high levels of shame, being shamed by having to move their card or their clip or any of those sorts of things. Same with class dojo, if it is publicly up there. And so I try not to make ugly faces when people say they use that. And I'm sorry. I have a strong bias, but I'm like, "Oh! Tell me a little more about it." Because I've seen people who actually know how to use those systems, make them private, use them in really effective ways. And with the students that they're supporting, they're doing well. But if you have kids with greater possibility that they have trauma, those are higher-risk systems. They work for a lot of kids, but they can be extremely counterproductive for some of the children that are the most fragile. And I think we just need to step back and look at those and see if it, what's it doing to those children? So it's an invitation to consider it. And that's what that reflection form is about. I'll show you an alternative. So higher risk is when everything's very public. So if I just drop that class dojo from up on my smartboard to on my device, whether it's an iPad or a phone, I've just made a mega-improvement. If I get rid of the sounds, because sometimes, and I'll watch this in a classroom, the "enh", the negative sound goes off, and almost all kids' heads rivet towards the kid that's the troublemaker. And often, that's the kid that's troubled that doesn't need everybody identifying her as the one who's always in trouble. I've actually had some of those kids say things like, "It's not me," in desperation to not have that. So we want to think about the unintended consequences of some of these systems. When we drop out the negatives, we're going to be in a better place. And if we have kids have more than a single cut point to get to a reinforcer, we do better. So here's an example from Lauren Williams in Lebanon School District. I can walk in her classroom and see this, all these pockets. And I'm not sure which kid is currently having the best day and currently not having the best day. I can't, if I'm a kid in the classroom, I can't look and see who are the kids that maybe I ought to stay away from. It doesn't advertise that stuff because her system is, she gives little bucks or tickets, but what she does is they can turn them in at any point they want. So it's multiple cut points. So she does different ... Now, the ones I photographed were both 20 points, but she has simple non-expensive things that show okay. If I'm going to bring a stuffed toy in or I'm going to borrow one from you, my teacher, because some of her kids don't have stuffed toys, and sit it on my desk, I'm going to pay \$20. But there's also a \$5 thing, and there's a \$30 thing. And she's smart. She makes the one book laminated, but then she changes the values as the year goes on and different things to keep it exciting. So when I look at this chart, I could have a kiddo that just turned their bucks in and theirs is empty, but they may have been behaving extremely well. It doesn't tell me anything. And that helps, I think, with social relationships. And remember, kids from trauma may view their peers as competitors. What does a system that advertises you're losing do to that kid's psyche? Food for thought. Another thing that, another simple system that I've seen folks use is where they have a cumulative. So if we have a certain time of day that we get rewards, if you have 10, here is your option. If you have nine, here is your option. Eight, here's your option and on down. But this one teacher shared with me what she found is, some kids liked options at three. And they were, like, I'm done behaving because I really just want three. And so what she did is, if you can get 10, you can get this and any of these others. If you get nine, you get this and any of these others. You pick what it is. And some of them were things as simple as, "I get five minutes of quiet time away from somebody." Some were, "I get to use special materials." So there are a lot of strategies that we can think about that are ones that are fairly simple, but they're a different way of doing business. And we have to communicate about them, and so the walk, drink of water, then talk strategy. I have some secondary principals who have people asking them or saying, "You're just

reinforcing that kid for his negative behavior because you're out walking with him." We need to articulate what we're doing clearly in those circumstances. So we need to be able to say, "I'm taking him on a walk that's burning off the stress chemicals, getting his brain in a better place to learn, and then he's getting a drink of water. When he drinks that cool water, it cools his core down. The brain actually reads that I'm in a calmer state, and it is biofeedback, and I feel calmer. And then I'm ready to talk. It's a very productive process. It is not reinforcing him." So there are a lot of these kinds of things that we can use, and I wish we had more time to talk about them. But we are thinking about them and what they do for kids' escalated status. And is it a more effective when we make a little tweak to it? And finally, I want to talk a little bit about a different thing for time-out. So I talked about the boy who doesn't get to spend his adrenaline and cortisol off because he's sitting on a chair, or any child that's sitting on a chair. Many of my schools are going from a time-outs chair to a time-out square. And so they're having kids move, and they're having them move in a pattern. We have a ... Sean has a teacher who's giving kids movement cards. And when he's feeling too worked up, he grabs a movement card. And he goes out and does it right outside the classroom and comes back in. He's learning to self-regulate. He's learning to behavior manage. He's much more successful in his learning. So if we follow how the brain de-escalates when we think about a brain-based time away, we can de-escalate first, do some physical exercise, then begin to engage the thinking part of the brain through simple, non-challenging activities, but maybe a little bit fun. And then we engage the thinking. So at a primary level, this is getting back on track. And so the child goes to time-out. They stop, and then they do a calming activity. And you can see the pictures of the calming activity, many of them taken from yoga, many of them intentionally putting deep pressure into the shoulders and hips. Then they move their train that's getting back on track to the thinking. And there they do some activities that are well-mastered. And then they put it on ready. And their job ready is to put a little "go" sign on corner of the time away space, and then look around and see where they need to rejoin their class. Primary example: Can we do that at middle school? At Lincoln Middle in School District for Lancaster, we are developing a room called the pride room. They have lions, or their mascot. So the pride room, they come in, they do physical exercise, then they modulate down, rest and regulate. Then they do a simple and intelligent activity. Then they design a plan. It's coached. Somebody's there to coach them, along with how are you going to make restitution? What do you think you could do differently? And then they exit. And this is replacing the old traditional sending them to the office, or sending them to the discipline room, where they would sit and the chemicals just sit in their brain and do their damage. But they're actually learning new ways to be because it's a coached model. We call it, because lots of the kiddos there are boys, we call it personal training for the brain. And the kids kind of like that, so they've really looked at it as a way, and we talk with students about what this is doing for their brain, and allowing them to return to class and be productive. So what we do when we build kids that are more resilient, we often don't see. Werner and Smith's study looked at by age 18, only about 33 percent of kids were successful in leading healthy lives. However, if we looked out past the last brain growth period and into their early 30s, that number increased by 83 percent. When those people, when those children, growing up into adults, had a caring, compassionate adult who taught them about trust, who read their signals, even if they were confusing at first glance, they made a significant difference. So you may be building the foundation for a house you will never see that child create. But all the research tells us that what we do can make a significant difference. There are things in your handouts, additional things that I'm not going to get to that I just wanted to list as tier one, and I think that's time. So have a good rest of your afternoon.