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EARLY HEARING DETECTION AND INTERVENTION (EHDI)

MARCH 9, 2015

OPENING PLENARY

AUDITORY BRAIN DEVELOPMENT: THE FOUNDATION OF SPOKEN  
COMMUNICATION AND LITERACY FOR ALL CHILDREN

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>> IRENE FORSMAN: Hello? Good morning! We're going to start in a minute. So get into your seats, please. We have lots to do this morning. Okay! It's time! On behalf of the meeting organizer and the planning committee, welcome to the 14th annual EHDI meeting. We're pleased to have you here in Louisville, and we're not going to have floods. Many of you attended the pre-session yesterday and had the chance to catch up with old friends. I hope you got to the reception last night. It was a warm welcome and a chance to catch up. Each year we come together to share, to learn from one another, and to work together to improve EHDI. This year we have 950 registrants, and all of us will participate in stakeholder meetings, poster sessions, networking opportunities, and many excellent presentations. The meeting is designed to give us new skills, broaden our perspectives, and help us carry on with new energy. There are times when we don't agree on everything, but we do agree to work together to create stronger EHDI systems to serve the family and to serve our families. So we thank you for coming and doing what you do everyday. I have a few housekeeping things. Later in the meeting we'll recognize the planning committee whose work has resulted in, we hope, the best meeting yet. We would especially like to recognize

the Kentucky participant, Michelle King for hosting the EHDI meeting in this city. Your support, Michelle, wherever you are, has been vital in putting the meeting together, and we thank you. We'd also like to extend a special thanks to the organizations that have contributed as sponsors to this meeting. We have three silver level sponsors. They are Otometrics-Audiology Systems, Natus Medical Incorporated-Peloton, and Vivosonic. We also have one bronze-level sponsor for this year's meeting, and that is Oticon Pediatrics. The sponsorship from Otometrics Audiology Systems provided support for this meeting's bags, as well as other features of the meeting. Oticon contributes to our poster session. And now for the highlight of the morning. I am pleased to introduce Dr. Carol Flexer. The title of her talk this morning is "Auditory Brain Development: The Foundation of Spoken Communication and Literacy for All Children."

Dr. Flexer received her doctorate in audiology from Kent State University in 1982. She was at the University of Akron for 25 years as a distinguished professor of audiology in the School of Speech-Language Pathology and Audiology. Her special areas of expertise include pediatric and educational audiology. Dr. Flexer continues to lecture and consults extensively. She is a prolific author, having authored more than 155 publications and co-edited and authored 13 books. Dr. Flexer is Past-President of the Educational Audiology Association, Past-President of the Alexander Graham Bell Association for the Deaf and Hard of Hearing, academy for listening and spoken language. Please welcome Dr. Carol Flexer. But I have one more thing that I forgot to say. ASL is over here (indicating) and English influenced sign language is on this side) indicating). Carol? Somebody take a picture of us together!

[ Applause ]

Welcome, Carol!

>> CAROL FLEXER: Thank you! So good morning! This is the breakfast club, right?

[ Laughter ]

You all got up early! Thank you for being here. And thank you to the conference organizers. I am honored to have been invited to be a speaker here. Thank you. So for who is this the first time that you've been at an EHDI meeting? Who are first-timers? Okay. Thank you for being here! Who are parents of children? Great! Thank you. See, EHDI, this birth-to-3, is the most powerful time when we can make a lasting difference in the child's outcomes. So you are in the perfect position to create the neurological foundations that will lead to outcomes. That many parents have in mind. And, in fact, that leads us to the first conversation, and thank you all for being in this conversation. That is, as we know, the family's desired outcome guides us ethically and legally, which means that our first conversations with the family concern how do you want it all to turn out? How do you see this looking when the child is 3, 10, 20?

Because once we know where we want to end up, we can be more strategic in deciding how we get there. You know, using a geographic analogy, you just have to know where you're going to pick the right roads. You know? If you want to end up in San Francisco, there is a constellation of highways to get there. If you want to end up in New York City there is another constellation. So where do you want to go? That determines the trajectory. Now, we know that 95%, approximately, of children with hearing loss are born to hearing speaking families. So the vast majority of families we work with are going to be very interested in that outcome. Furthermore, the U.S. Census Bureau has identified that at least 21% of U.S. families speak a language other than English. There are more than 400 languages spoken in the United States. See, what that means for us is it's likely that about 1/4th of our families are going to be interested in multiple spoken language outcomes. And how do we setup the brain for that outcome? You know, over half of the world's population speaks more than one language. Some speak three or four. How does that happen? And how can that happen for our children with hearing loss? Well, in 40 minutes, can just provide an overview picture, and fortunately at this conference there are many sessions that provide more detail about the points that I'm going to introduce. So what this talk is about is the context of service delivery and professional collaboration if the family's destination is listening spoken language, if that's the outcome. What are the foundational issues that have to be addressed? So here are some main ideas. If the desired outcome is spoken communication and literacy, then the first order event is developing the auditory centers of the brain because, of course, we hear with the brain. What did we think we heard with? Toenails? I mean, we know it's the brain! We don't have to bring it up just like when we walk, feet are very useful. It's an obvious concept. But sometimes not so obvious. So whenever we use the word "hearing" I suggest following it with "auditory brain development."

Because that's where actual hearing occurs. So in order for the brain to develop, we have to get clear auditory information to the brain. See, the brain is a marvelous cultural organ, and by that I mean that due to plasticity, which is the malleability of the brain to form around the incoming information, and because of that neural plasticity, whatever information that gets to the brain is how the brain will organize its neural network. What comes in is what will be organized and ultimately what comes out. The brain is a probability organizer. The brain is a probability organizer, and that means that whatever information enters the brain over and over and over is how those pathways will be developed and strengthened. The brain is a probability organizer. So when a child speaks English, what got into the brain? What? English! When the child speaks Spanish, what got into the brain? When the child speaks

Mandarin, what got into the brain? What goes in is what comes out. When the child speaks clearly, what got into the brain? Clear speech. When the child speaks garbled, what got into the brain? Garbled speech. See, the brain has the potential to develop the pathways for clear, spoken language. That's how humans are organically designed. But in order for that to happen, clear, spoken language has to get in, and that language has to get in early. Early. Early in that child's development. Looking at the organic design of people, who has eyelids?

[ Laughter ]

Yeah! What happens when you close them? You cannot see. Who has earlids? No earlids! None! What does that mean, no earlids? That means human beings are organically designed with Mr. brains having access to auditory information 24/7. And that's how important that auditory information is for auditory neural development. There's no closure of that information. None! 24/7. How many hours a day does the brain of a child with hearing loss receive auditory enrichment and information? However long they wear their technology. Two hours, four hours, 10 hours. As good as today's technologies are, they're not designed for 24-hour wear yet. They're not. The ear canal is not designed to be occluded for 24 hours. The skin under an implant magnet is not designed to be compressed for 24 hours. So I'm not suggesting that we keep technology on a child 24 hours a day. The current devices are not yet engineered for that. However, the more access, the more information will reach the brain. See, we talk about sound getting to the brain, but what we mean by sound is information, knowledge. That's what's getting to the brain, right? So if a child, for example, is wearing their technology for only six hours a day, it will take that brain, let's say, four hours a day, it will take that brain six years to receive the comparable enrichment as a child with typical hearing. The brain needs exposure in order to grow connections and data files of knowledge. Furthermore, organically, embryologically, the inner ear is mostly developed by the 20th week of gestation. So typically-developing babies, their brain in utero receives 20 weeks of auditory stimulation. So a typically developing baby is born with 20 weeks of auditory exposure which is why at birth they recognize their mother's voice. And songs and stories heard before birth. That is the organic design. So how do we get sound to that brain immediately after birth if the family's desired outcome is listening and talking? That's where you come in! That's why you are here! Because that's our job. We signed up for this job, right? We professionals, we signed up for this. Now, parents, you might not have signed up for this. Right?

[ Laughter ]

You might not have signed up for it but you have it. We professionals signed up for it. So it's our responsibility to know what it takes to reach the outcomes the family has in mind, and to

set the structure in place to optimize the probability of those outcomes occurring. Also, we have to consider, and there will be other talks during the conference, about signal-to-noise ratio, which is the relationship between the desired signal-to-background sounds. In order for sound to get to the brain, it always has to go through an environment, through the technology, through the child's auditory system, to the brain. In weak link and talk to the floor. So we always have to consider acoustic accessibility. So here is a way to look at hearing loss. Here is a way. The ear is the doorway to the brain. See, people think we hear with the ear. We don't! The ear is the conduit through which auditory information gets to the brain where actual hearing occurs. So we can look at hearing loss using this analogy as a doorway problem. How do you get through that doorway? Because hearing doesn't happen here. I mean, I'm oversimplifying. Stuff happens in the peripheral system. Stuff happens here. But the stuff that happens here is for the purpose of getting auditory information here (indicating). So how do we get through the doorway? First, we have to identify what's the doorway problem? Is it a little doorway problem? Is it a closed doorway because, you know, in the olden days once the doorway got to a certain level of closure, man, game over in terms of auditory information. Right? Fortunately it's 2015. The whole purpose of technologies, of hearing aids, of cochlear implants, of FM systems, the only purpose is to get information through the doorway to the brain. There's no other purpose. None! So identifying the doorway, identifying the doorway breachers, that is the technology that can get to that brain, fitting that technology perfectly, keeping track of it, keeping track of that doorway. See, we know that about 40% of childhood hearing losses are progressive. What a progressive hearing loss means is a change in the doorway. When the doorway changes, we need to alter the device that is engineered to get sound through the doorway. That's what audiologists are so critical in a collaborative team measurement because interventionists doesn't matter how brilliant we are if we're not getting through the doorway, talk to the floor. Because there's no magic. There's no magic. The only way that the auditory centers of the brain are impacted is if we actually get auditory information there. And that happens through the doorway. Now, the doorway devices aren't perfect, which is why we need an enriched and thoughtful auditory linguistic platform using developmental conversational interaction. And, again, fortunately there are many sessions at this conference that talk about what does that look like? What do you do when you have access through the doorway to the brain, then how do you enter appropriately, lovingly, playfully auditory information into that brain to grow those neural centers, to get the outcome that the family has in mind, which may well include multiple spoken languages. Because it's all about the brain. Hearing loss is not an ear issue. It's a brain issue. And

hearing aids, FMs, implants, their brain access tools. They're designed to get sound to the brain, and if they're not worn, if they're not appropriate, if they're not fit well, that brain will be grown with faulty data because there's no little in there saying that was a crummy signal, and don't grow a neuron for that one!

[ Laughter ]

Whatever gets there is what the brain will do! It's a probability organizer. So it's up to us at these critical times to identify the doorway and to get clear, meaningful, developmentally appropriate auditory information to the brain to develop those pathways from the very beginning because if we don't do it from the beginning it's not that there is nothing that we can do, but, you see, if the brain organizes itself around a faulty signal, we have to undo that initial organization and re-do the organization that is designed to get that outcome. It's just much more efficient and developmentally strategic to get that information to the brain in the first place. Because that foundation must be created. It's like when you build a house, right? So let's say that you are building a house, and anyone have this happen, and the developers, they get there so late, they're so behind schedule, and they finally get to your property. And they're late, late, late. And you say, listen, we've just let all this time go by. Could you just start with the second floor?

[ Laughter ]

It doesn't matter when you begin. You have to begin at the beginning with neural development and creating that auditory foundation. It's just easier to begin at the beginning, at the actual beginning, and that's what you have! That's what EHDI has. You have the actual beginning. It's a huge gift to create that foundation, that honors the family's outcome from the very beginning. Otherwise, everyone else has to retrofit.

Because it's all about the brain. Now, we know that the world has changed, right? Obviously. The book has been around for awhile, "Who Moved My Cheese," a little parable about change. And what this book is about is the cheese symbolizing profession, home, family, community. The thesis is, you know, like it or not, ready or not, the cheese is moving. We don't have a choice in cheese moving. Our only choice is how do we respond to it? Are we sniff and scurry, anticipatory, predictive, facilitative? Or are we hem and huh, staying right here? It was good enough in 1970, and it's good enough now. If I stay here long enough it will be 1970. It won't even be 2015 again in a few months. We're in an informational knowledge-based economy that demands high levels of communicative competence. You know, far too many children with hearing loss continue to have challenges with literacy, right? Now, is that challenge because they can't see so good? Or is it because, as we know, that the foundation of literacy comes from auditory neural foundation. We speak what and how we hear, and we read what we

speak. So looking from a developmental basis, what we're doing in these early years is setting the stage through neural networking for reading, for literacy. So what I want to do, and some of you have heard this before, is just quickly play a little bit of what auditory, or what aural in the old days, outcomes were like, and then contrast it with what's possible in this day and age if we do what it takes. This is just a quick thing. And here is the CD that I'm playing was made in about 1982 at National Technical Institute for the Deaf, NTID, and it's college students reading the Rainbow passage. And the reason that I'm going to play it is not to make fun of anyone. Not at all! It's to illustrate that whatever we give the brain to work with is what the brain has to work with. And in those days, if these students were college students in 1980, when were they born? '60s? Was there an EHDI, by the way, in the '60s? Of course not! We didn't understand about neural physiology. We didn't know how to evaluate hearing at birth. We didn't have the technology to get sound to the brain. So it was a whole different context, and a child or a person speaks what and how they hear. So in those days if that doorway was practically shut, and we couldn't get through it, then the brain had a itty-bitty-bitty bit of sound to work with and that's what came out. It has nothing to do with intellect. It had nothing to do with programming. It's just the time, the point in our history. What were the variables? What did we know? What was best practice? What was available? So these are two quick little snippets of what possible outcomes were like in that day and age. Not going to be intelligible, but just so we know where we've come with our knowledge, our technology, with EHDI that we now have that we didn't then. So can we quickly play those snippets?

(Audio not understandable).

>> CAROL FLEXER: Okay. Thank you. So what comes out is what goes in. So we always listen very carefully to our children recognizing that however the brain is programmed is how the outcome will sound. Now, I want to play about 40 seconds, 49 seconds, of a CD of what we expect for the vast majority of today's children if we do what it takes. That is, identify the doorway issue. Another way of looking at it is the keyboard. What sort of keyboard do we have to the hard drive? Of using technology to breach that doorway. Of having a parent-focused program with a developmental focus designed to enter auditory knowledge into that brain. And these are some children from a good friend of mine and her program in Australia, and the reason that I'm playing this is they have Australian accents! Right? What gets in is what comes out. Now, these children also have a doorway closure. But they were smart enough to be born in a point in history when their brains had access to technologies and programs that were simply not created in the past. So can we play that, please?

My name is Katie Douglas, and I attended the center when I was 5 months old.

>> Hi. I'm Jamie-Lee and I am 17. I came here when I was 1 year old, and there were only 5 students with me at that time.

>> Hi, I'm Jeannie, and when I first came to this school I was 2.5 schools.

>> My name is Bill Raymond, I'm 24 years old, 18 have been going to the hearing center for about 14 years.

>> My name is Darcy, and this is my sister Claudia. She is 4.5, and she will be turning 5, and I am 9.

[ Laughter ]

>> CAROL FLEXER: Okay. Thank you. So if you can get clear sound to the brain, and then bathe that brain in loving developmentally-appropriate conversation, we can grow a hearing brain because we can get through the doorway. So what that means is what do we mean when we say "deaf"? You see, when we say deaf people think that means you can't hear. Well, what deaf means from this perspective, or this way of viewing it, is you got a doorway problem. If you can get through the doorway, 98% of the time we can develop auditory neural centers. And if that brain has additional challenges, as some of our children do, that means that the brain needs more auditory information and not less! We need to give the brain more information, more chances to develop those auditory centers, and not take away the information, but further enrich it. So what do we mean when we talk about hearing loss, degrees of doorway issues, keyboard problems? What do we mean in this day and age? When we say "deaf" in 2015, are we thinking 1970? 1990? Are we thinking what we heard on that CD which was decades ago? Or are we thinking about what we saw in the DVD which is what outcomes are possible today if we do what it takes. And there are many sessions in this conference that identify what does it take. Because getting through the doorway is only step one. If you don't get through the doorway, no other auditory steps are possible. Once you get through the doorway, what is it we enter into that brain? What do we do once we're there? Fortunately we have a great deal of foundational neural research. Everyone, have you ever met a parent who doesn't know their child has a brain? Really? Brain? We all know. So talking about the brain is a conversation that occurs everywhere. Brain-based literacy, like it was what, elbow-based literacy? Brain-based education. It was all brain-based, it's just that we didn't talk about. Every time a child is learning something, or any of us, what has occurred are changes in the neural structure. That's what that learning means. And experience-dependent plasticity means that you need repeated practice. It's time on task. The more practice that's spent, the stronger will be the neural connections. The earlier we start the practice, the stronger and more opportunity there will be for those neural connections. And the brain as a cultural organ means what are we talking about to the child? What experiences are going into the brain? The family is so critical in



growing that cultural brain base. What are we talking about? Because that's what gets into the brain. Attention, when we say "pay attention," what do we mean? Activation of the prefrontal cortex. When we say that the child has to listen, what does that mean? It means that we're activating the prefrontal cortex to auditory information. But you see, it's our job to give the child what to listen to. If we say, listen, activating prefrontal cortex, and we give the child (mumbling) that's what they're listening to. Listening is activation of the brain's energy toward the incoming stimuli, and it's our job to make sure that incoming stimuli is how we want that brain to be organized. It's that prefrontal cortex. Listen, activation. When that prefrontal cortex is activated, we then can have abiding neural changes in the auditory centers of the brain. We know that the linguistic environment at home predicts the child's language and IQ outcomes. This is for all children! All of them! What do we talk about at home? How rich is that exchange? What sort of conversations? How are we engaging and talking with and nurturing this baby because that determines how that brain will be organized. So, EHDI, we know. We need to increase the parents' talk time. And any suggestions that we offer for the child with hearing loss are completely valuable for every child in that family. Because how we grow the brain for talking and reading and learning and making friends for the child with hearing loss is exactly the way we would do that for any child. But we have to be more intentional, and thoughtful, because the child with hearing loss, even though we improve the doorway with technology, it's not a perfect doorway. There's not the same distance access. So we have to make sure we're intentional, facilitative, enriching in a loving and developmentally-appropriate way. Remember, children speak what and how they hear. How the brain is organized is what comes out. Roberta Gollencamp is an amazing researcher of child language. And one of the bottom lines is that children and babies learn words by noting the social intent of the speaker. Language isn't about objects. Language isn't labels. Language is the relationship among objects and people and things and actions within a social context. Which is why the most powerful initial language, neurons auditorily are developed by the family. Which is why EHDI is so family-focused, and why we have to give that brain a clear language system. Not single words. Grammatically correct clauses in language. We have to use a full language structure, and we can't ask parents to speak a language that they don't know. So if the family isn't speaking English at home, they need to speak the language they know. How can we speak language that we don't know? No one can! So we need to support the family. That's other conversations that you will hear at the conference. How do we teach these multiple spoken languages? Support the family in their heritage language with the rich culture of their family language, and we have to immediately add English

because that is the language that child will be learning in in school. Another conversation. We know that how much parents converse with their child is the best predictor of that child's language competence for all children. The more we talk in meaningfully, interactively. See, what determines how smart anyone is? Primarily it's what they know, right? What do you know? If you don't know very much, no matter what the potential is, then the intelligence isn't utilized. Words, and there will be more talks about this, too, information, knowledge, that's what allows the person to understand and manage and be part of their world. What do you know? Well, what you know, first, has to start with the information that actually gets to the brain! No magic. If you are not getting to the brain, information will not grow. How much parents converse with their child is the best predictor of the child's language competence. Whether or not they have a hearing loss. So what we know is it's important to have multiple brain conversations with the family because hearing loss, if you want a listening and spoken language outcome, it's a neurobiological emergency. We know that if we don't activate, activate immediately those auditory centers, we start losing auditory potential. So we want to get into that auditory brain through the doorway as soon as absolutely as soon as possible so that we can setup that neurological infrastructure. Remember, you have to begin at the foundation no matter when you begin. You have to begin at the beginning. EHDI, we have the beginning! And we have a responsibility to use that beginning. So when we talk to families, how is the child's and baby's brain impacted by technology getting through the doorway? What about reading? You know, one of the most important things that we can do for our babies is all babies read, read, read, read, read, oh, 20 books a day. I made up that number.

[ Laughter ]

Lots of reading aloud lovingly, playfully all during the day. We're growing the brain not only for learning but for thinking. For thinking. Singing, oh, my goodness, does the brain love singing. We're getting more and more research about how valuable singing is from the very beginning by singing, I mean, adult directed music. See, when we sing, the melody activates primarily the right hemisphere, and the words activate primarily the left hemisphere, and the two meet through the corpus callosum, it's a whole brain workout, and the beginning is in the brainstem which is so important for organizing sounds from both sides. Sing, sing, sing. Now is the time to pick up toys, pick up toys (singing) make it up. But singing throughout the day is wonderful for the brain. The melody links together very important phonemic elements. Sing, sing, sing! We've probably way underestimated how much practice that brain requires in order to develop that infrastructure. We know that growing that brain for sound, for reading, it's about the family, and the

conversations that occur at home because this is the real ear. And all of our conversations, professionals with families about hearing, start at the brain. See, we typically start in the doorway, and we do have to understand the doorway. That's true. But remember, 95% of families didn't sign up for this gig. They don't know anything about hearing loss. They think it's an ear thing. If we start in the doorway, they're going to get stuck there. You know, how important is wearing the hearing aid? It's just this thing, I have earring in it, too. But what if we got the technology is about the brain, and if that technology is not on, if that technology is in your purse, then your child's brain is in your purse. Or it's on the shelf. Or the dog just ate it!

[ Laughter ]

Because what this technology is, is a brain access device, and if it's not worn, that brain is not being activated, stimulated, and developed. And if that desired outcome is listening in spoken language, you're not going to get it, because you have to get to the brain first. No magic. There's no magic. I once had a parent say, "You know, we're singing and talking and reading, and we're going to get the hearing aids in about three months."

Well, talk to the floor! We've got to get those doorway devices on immediately. We should have a whole bank of loaner hearing aids. We need to have ways to activate, activate. Remember, a baby with typical hearing, they're born with activation having already occurred of their auditory centers. So we can't wait a second for that auditory activation. Remember, potential is just potential. If it's not activated. I always think of an athletic analogy. I live in Ohio now. You know, LeBron James, basketball, LeBron James? Yeah. We would admit that he is pretty good, right? Amazing potential. What if no one ever gave him a basketball? Potential without activation is worthless. You have to activate it. And if we're interested in listening in spoken language, probably in multiple spoken languages, we've got to activate and grow those auditory neural centers immediately. And then be in a parent-focused coaching program designed in a developmentally-appropriate way to stimulate and grow those centers. Now, we know that the old Hart and Risley studies has been proven over and over again. This is in typically developing children. But remember. EHDI, because we can begin at the beginning, we can use a developmental model, which means that we use the same strategies that would be used with the child with typical hearing. We're developmental. We're in on the ground floor. We just have to be more thoughtful, intentional, and vigilant, and we have a stronger team in place because you've got to identify the doorway, get through the doorway, manage the doorway devices, keep track of the doorway that may change over time, create an environment throughout the child's day designed to playfully and lovingly enter child-focused conversation using a full linguistic system in a

language the family knows because that's how they'll know how to communicate. So what Hart and Risley found is that as primarily as a function socioeconomic groups, and there have been other talks and we'll be talking about it, but there are differences in the amount of auditory information that reaches the brains of children not as a function of being loved more or less, but as a function of the knowledge of what it takes, and the support that it takes to develop that auditory neural infrastructure. Professional families, children from those families have heard about 45 million words down to poverty families about 13 million words. Hart and Risley found that the more information the child had, the more that they spoke, the more that they knew, and the better they read. And that holds true for all of our children. Vocabulary is one of the biggest predictors. Look at how many words typically-developing children know at particular stages of their development. And look how quickly that knowledge -- it's not just words, but it's knowledge and information. So just to give a general overview, and actually both figures underestimate that the Oxford Dictionary shows about 171,476 English words. No one knows all of those. Whereas about 10,000 most common words we do know that if a child is to have a good opportunity for postsecondary education, they ought to be familiar with about 100,000 words. Now, a un abridged sign language dictionary identified 5,600 signs. That is an understatement because there are a lot of subtleties that could be added to that, but there is a great deal of fingerspelling that has to go on. What does a child need to know? So here is the deal. Work in harmony with our organic design. Human beings are organized neurologically with the potential to listen, to talk, if we activate that potential, if we get to that brain. Because it's all about the brain. Thank you.

[ Applause ]

>> IRENE FORSMAN: Thanks so much, Carol. That was a wonderful talk! Before you all runaway, I have a few housekeeping notes. Glasses help the eyes. Every registered participant has a name badge. Please keep it on whenever you're attending sessions throughout the meeting. The morning beverage break and the afternoon snack will be in the exhibit hall just across the hall. Today and tomorrow at lunch the hotel will have grab-and-go items for purchase with cash in the exhibit hall. The items are reasonably priced, and for many of you who will be in sessions during lunch, this will be, we hope, a great option. Remember, cash. There is an ATM near AJ's Conservatory. We encourage you to visit poster presenters and exhibitors during lunch. Poster presenters will be on hand from 12:45 to 1:45 in the foyer here. We open this year's meeting with a accomplished speaker. We have opened -- I've mixed up my notes. I'm not done yet. I guess maybe I am. If you are presenting a breakout session, please go to the speaker room to be sure that your presentation is ready. The speaker room is in Brown located just

past the registration desk on this floor. I did tell you about the grab-and-go. Before we learn about the state stakeholder sessions, we would like to highlight a few networking and learning opportunities for the meeting activities, especially for students and for parents and families are noted on Pages 7 and 8 in the program book. For early risers in the group, we're offering shared learning sessions beginning at 7:00 A.M. on Monday and Tuesday. Please check out the topics on Page 10 in the program book. They're sure to be worth an early start. And breakfast will be available prior to and after the sessions. We hope that you'll take advantage of these times to learn from one another and through these and other networking opportunities. We have a little bit more.

>> Good morning! Good to see everyone again. Hopefully you've had some time already this morning and yesterday to catch up with old friends and even meet some new friends already. First, I would like to take a moment before we talk about state stakeholders to introduce the sub-committee that helps organize the state stakeholder meeting. Kathy Northrop from Nebraska, Dr. Carlos Duran, Tammy from Iowa, Michelle King from Kentucky, and Beth Hamilton from Lamar University, and me, Vicki Hunting, from Iowa this year, the EHDI meeting has more than 160 instructional sessions, shared learning opportunities, topical sessions, and over 70 poster sessions from which to choose. In addition to the three great plenaries, there are 49 exhibiter theirs and over 950 attendees. That's a tremendous amount of opportunity to gain new information. In a few minutes, you will have an opportunity to learn about your own state's EHDI system, and think about how you, personally, individually will use that information that you learn here at this meeting to become more involved in your EHDI system. These sessions are led by your EHDI coordinator, and they will provide an opportunity for each of you as individuals to help -- to commit to activities that will help further the system. As an individual, it's important for you to understand that the current status of your state territory or country's Early Hearing Detection and Intervention system. It's important for you to determine how to use the information -- excuse me, how to use and share the information you learn here and figure out how to apply it to your EHDI system when you return home. And it's also important for you to continue to build on and expand your collaboration and networking while you're here. This time together during the State stakeholder session will help you to consider how best to contribute to the ongoing development and enhancement of your EHDI system. To help you in transferring the knowledge that you will gain during this meeting, we have provided you with a copy of the personal action plan worksheet that's located in the back pocket of your program booklet. It's a two-part carbonless form. This worksheet is your to-do list to help you keep track of new ideas and record some of the most important information that you learn during this year's session so

that your learning can be used to enhance your system when you return home. We ask that you take the time to fill out these personal action plans and turn them in either to your EHDI coordinator or just drop them at the registration desk at the end of each day, or when your sheet is filled up, or prior to leaving the meeting on Tuesday. And if you would at the very least indicate your state at the top corner of the form so that we know which EHDI coordinator to share that information with. Feel free to include your name and contact information if you'd like contact from your EHDI coordinator. If you need additional copies, there are plenty available. Stop by the registration desk and pick some up. Your time together in the meeting as a team may include discussions about what you expect to get out of the next two days together. There may be discussions about what the EHDI priorities are in your state or territory. You may review the HRSA and CDC abstracts and work plans to see what has been laid out for the grant period. You might talk about who is planning to attend which sessions to cover so that you cover the most relevant priorities in your state. There may also be conversations about how you will use quality improvement methodologies to organize your ideas into actionable activities to enhance your learning and lead to have improvement. Also, your feedback is important to us for helping us plan next year's meeting. Each year, thanks to your input, we have tweaked the format a little bit. Be sure to fill out your state stakeholder meeting evaluation. It is also in the back of your program booklet. It is a tan-colored form. This will help us to continue to improve. So if you've been involved in your State EHDI systems over the last several years, you are familiar with the quality and methodologies, then you will recognize this question. This question helps us to breakdown work into smaller, more manageable pieces, so as you head to your meeting in a few minutes, we would like to issue this -- issue you this familiar challenge. Ask yourself: What can I do by next Tuesday to improve your EHDI system? So as you take notes throughout the sessions, think about what you are going to do right away when you get back next week. Conference staff and NCHAM consultants will be circulating around during the session. So feel free to flag any of us down if you have questions or need assistance. There were a couple of last-minute room changes, so New Jersey and Wyoming will be meeting in the exhibit hall. There are tables in there. So thanks for your time this morning, and for listening. Enjoy yourself at the meeting, catching up with old friends, meeting new friends, and learning new ideas to improve your EHDI system. And Karl or Irene, if there is nothing else, then you are dismissed. Thank you.