

ABILITY

Dr. Andrew Begel

AI AND AUTISM

Can Ads Create Empathy?

by Ed Timke, PhD

HEARSEE

New Blind Tech

'Disabled Ecologies'

with Sunaura Taylor, PhD



Interview with:

Joe Mantegna & Bella Zoe Martinez

Rising Young Talented Actor, Singer, Song Writer & Activist



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Happy Summer! I hope you are able to find somewhere to cool down it's been so hot! As usual, I have been pretty busy and still doing a lot of traveling. Right now I am in Utah visiting some friends, but soon Bambi and I



will be making our way back to Michigan. I actually made the decision to move back to Florida for a while, so in September I will pack up and head back down to my tiny house.

My mom and I flew out to Washington in the middle of June. I did a photoshoot with Yamaha and they were more than happy to have my mom come to interpret for

me so I would feel comfortable. It wasn't just riding they also did a small interview so they felt it would be better to have her there to help out! It's a long flight from Florida! 6 hours on the way out and 5 and a half on the way back, I'm glad she was there with me it would have been so boring! I am also not a fan of flying alone since I am Deaf. I really don't like to fly and because I can't hear every "bump" makes me a little nervous haha.... I'm not sure if they are announcing anything like just slight turbulence, or get your life vest on! I suppose I could let a stewardess know that I am Deaf, but it seems like a hassle, I know, I am lazy! With someone else there they can let me know what is going on so I feel more comfortable. We had good flights there and back and my mom and I also had some free time to get to do some fun things! We hit a couple of breweries and on the last day went to Portland and walked around downtown and hit up an amazing sushi place!

The photoshoot for Yamaha was pretty amazing too. We went to a track in Washougal Washington and it is so

beautiful there! I have raced there before and it was nice to go back and check it out. Everyday that we were there they had a chef on site and he would cook whatever you wanted for breakfast, the food was so good.



There was also a couple of people that I used to race with there and some others that I knew from racing so it was nice to get together and catch up on old times.

The next photoshoot I did was for Alpinestars. I didn't need an interpreter because there wasn't going to be an interview. I also have been with Alpinestars for so long that I know most of the people that work there so it makes it easy to work with them and we all kind of know what to do together! The Alpinestars photoshoot was done in Michigan since the crew was all going to be there for the RedBud race which is in Michigan close to the Indiana boarder. We just met up at a local track where I know the owners. We started early to try and beat the heat and it was a lot of fun.

My family and I all love to go to the Redbud race. It's always around the 4th of July weekend and it is so crazy there. So many fans and everyone is having a good time. My parents flew in to Michigan and I picked them up and my brother and his friend drove in. We all met up at the Air BnB and had a great long weekend together hanging at the track and after hitting up some breweries and wineries. Alpinestars was able to get a couple of pit passes for me and my brother and his friend were in Heaven. They went after the races and got to take pictures and hang with all of the riders. The racing was great as usual and we all hit a lovely time. I hope everyone is enjoying their summer time there is still a little bit of warm weather ahead so soak up the fun and sun!

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Move Over, Disability Pride Month: It's White Wheelchair Guy Summer

With disability pride month beginning, it's important we take a moment to recognize who this month is usually about: straight white cis male wheelchair users. The Squeaky Wheel itself was created by one of them, and you guessed it — he's writing this very story.

White wheelchair guys have long been the face of disability. Whether they're a sporty Paralympian with a

spinal cord injury, an evil amputee villain petting an equally white cat or a Stephen Hawking-esque super nerd with a congenital disability, there are many known species of white wheelchair guys.

If you asked a Fortune 500 company to imagine a disabled person, they'd imagine a white wheelchair guy. That is, if Fortune 500 companies even had a



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sliver of a sense of imagination.

Historically this has always been the case, and recent years have been no different. According to census data, white wheelchair guys make up less than 8% of the disabled population in the United States, but they make up almost every damn disability advertisement I have seen this month. When I Google “disabled person,” they’re four of the first 10 images, and when I Billy-on-the-Street-style scream “Name a disabled person!” at strangers, white wheelchair guys make up most of their answers. For full disclosure, they make up around 15% of the Squeaky Wheel team as well.

Even the literal international symbol for disability is a white wheelchair guy. If you’re disabled, white wheelchair guys are like the random people in the elevator with you: Some smell good, some smell bad, but either way you can’t escape them.

The discrepancy here is quite jarring, and what’s even more terrifying (well, for me, a white wheelchair guy) is that I’m nearing the end of this story and don’t really have a funny way to end it.

I don’t want to be the face of disability. It’s the reason the Squeaky Wheel logo looks like the Nickelodeon logo f*cked an alien squid, and why it doesn’t look like my face or the guy from your (likely expired) accessible

parking pass. So please, if you’re celebrating Disability Pride Month, please be mindful of the speakers you hire, the content you post and the image in your mind when you fantasize about think of disabled people.

After several months of lackluster education, poor treatment of staff and a flickering classroom lightbulb that randomly shrieked the most startling scream you’ve ever heard, the students had had enough. This discontent led them to form what they are referring to as ISAWSHIT, or International Students Against Whatever Societal Hellscape Is This.

“We realized that if each of us individually complained about the situation, they would label us as difficult. But if we complained together? Just imagine an entire (small) bus full of disabled students refusing to leave school property,” Gold threatened with a grin.

It’s unclear exactly what’s next at Baytown Middle School, but if we had to guess, it’s probably whatever those kids are going to ask for. ■ **ABILITY**

by Steven Verdile

the-squeaky-wheel.com





Raising Fun 4 the MS50000

Do you ride a motorcycle?

It is that time of year again when I ask my friends, family and followers who ride motorcycles to join me in raising money for the MS charity I support called, MS Views and News.

Thirteen years ago, before I started my quest to ride a million miles for Multiple Sclerosis, I had an idea for a MS fundraiser. I wanted to be the first person to document riding a motorcycle 50,000 miles over 50 days. At the same time I was attempting to average 1000 miles every day, I would ask other riders to attempt to ride 100 miles a day over the same 50 day period.

50,000 miles over 50 days was a crazy idea and I would have been the first to set that world record. However, despite saving up all my vacation time, adding a few sick days and some unpaid leave to make it possible, I was told I would not have a job to return to if I were away seven weeks in a row. A friend of mine who was



Saskatchewan
Crossing

100 e



involved in MS charity work also questioned, “That’s great Paul, but what will you do next year and the year after that? You need to find something that you can sustain interest and fundraising over a period of years, not just a one time thing.” And so, I came up with the idea to document a million miles raising money and a awareness while chasing the cure for MS.

Eventually, the 50,000 miles in 50 days record was set and a year ago my friend Chris Hopper blew that away by setting the current world record of documenting 100,000 miles in 100 days. A blockbuster ride that raised over \$100K for Duchenne’s Muscular Dystrophy!

Although my original idea of riding the 50,000 miles was squashed, the idea of having riders try to reach 5000 miles over a 50 day period still seemed like a good way to involve others in my fundraising and the MS5000 Motorcycle Mileage Contest was born.

The MS5000 fundraiser is pretty simple, each participant tries to ride as many miles as they can over the 50 days between September 1st and October 20th. While riding, they are also trying to get their friends and fami-

ly to donate to the charity in their name. Riders get a point for each mile they document riding and 10 points for each dollar they raise. The more points the greater chance of winning a trophy. Some riders ride a huge number of miles, but only collect a few dollars, where other riders don’t get many miles in, but end up raising lots of money. The fundraiser can be entered from anywhere, in any state and we have had a few from out of the country enter as well. Motorcycles, scooters, trikes, sidecars, we even had someone in a convertible who wanted just to fundraise, play along.

The MS5000 is similar to the MS Walk, but instead of pledges for walking, riders solicit pledges for riding because after all, we are bikers, not hikers!

Over the past ten years the MS5000 riders have collectively logging over a million miles for MS!

The goal of any fundraiser is to raise as much money as you can for the cause.

Since 2013, the annual MS5000 has raised over \$250,000 for MS charities!



The last few years we have been raising money for a charity that provides much needed educational programs and services for people living with Multiple Sclerosis. MS Views and News tries to reach rural communities in the country that do not have the same resources as the larger urban areas. Live events feature a leading neurologists speaking, information on the latest advancements in treatments and of course, a free chicken dinner.

MS Views and News is the largest provider of these events and although supported in part by pharmaceutical companies, the information provided is completely unbranded. The specialist is able to give unbiased information about any and all treatments. Often a second speaker presents an inspiring story or a nutritionist or physical therapist shares ideas on living better with symptoms of the disease.

For those patients unable to attend of these live events, it is also live-streamed online and a few weeks later, published on the charity's Youtube channel. I have been a guest speaker at many of these events and not only do I learn new information, I have also seen the benefit first hand of what these programs deliver to people who

are living every day with a chronic illness. Helping the charity continue to offer these programs is important to me and why my fundraising efforts have been dedicated to this charity since 2018.

Consider entering the MS5000 and joining in raising some fun this year!

If you don't ride a motorcycle, you can also donate a few dollars to a rider who does.

Ride for a Reason!

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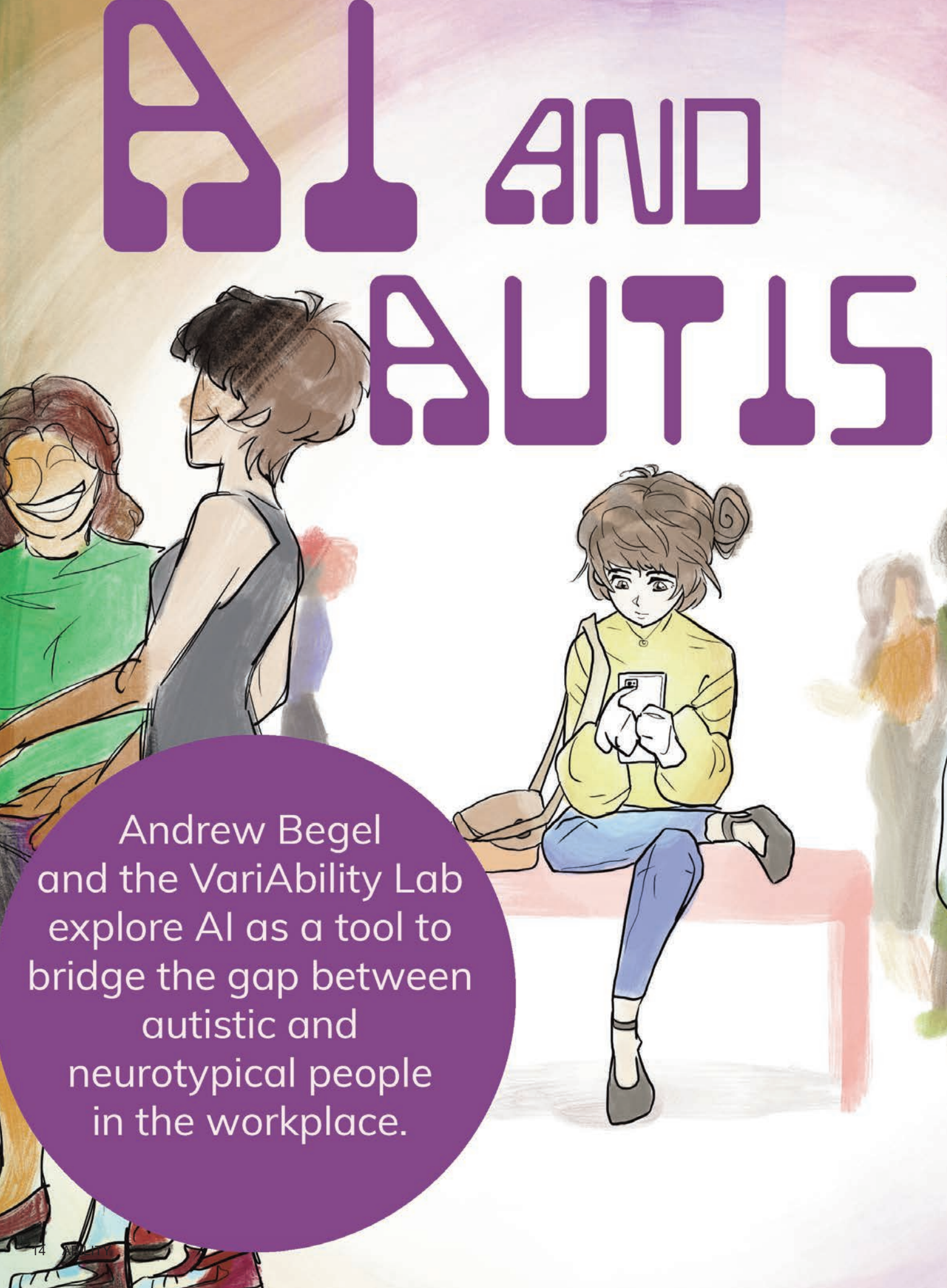
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AI AND AUTIS



Andrew Begel
and the VariAbility Lab
explore AI as a tool to
bridge the gap between
autistic and
neurotypical people
in the workplace.



The advent of AI ushered in a new and exciting era in technology development. The awe inspiring and sometimes terrifying applications of AI technology has left people divided on whether its impact will be beneficial or catastrophic. While some could consider AI a cold technology detached from the human experience, what if it could be the answer to bridging the communication gap between neurotypical and neurodiverse people? In a recent study conducted at Carnegie Mellon University, Professor Andrew Begel explores the relationship between AI and autistic users.

ABILITY Magazine's Jennifer Woodall and Chet Cooper spoke with Professor Andrew Begel about the importance of diversity in tech, how neurotypical allies can be supportive in the workplace, the difficulties autistic people face when navigating workplace relationships, and how a chat bot may be the tool needed to help foster open communication.

Jennifer Woodall: How are you today?

Andrew Begel: Good. How are you?

Woodall: Good, thank you. Can you tell me a little bit about your background and what brought you to Carnegie Mellon?

Begel: I got a PhD in computer science at Berkeley in 2005, then went to Microsoft research for 16 and a half years, where I mostly studied software developers, and then about halfway through, I got bored. One of our studies, we had looked at autistic software developers, and that was really fascinating. It turned out that



Andrew Begel

what we had thought was the stereotype—that they have some magical ability to do debugging and pattern recognition—we found that in fact, much of the interesting parts of what was going on, were that they were being discriminated against by everybody around them and that they often had poorer outcomes in their careers than they had hoped. I was like, let’s do something about that. I spent the next seven or eight years at Microsoft trying to find ways to help autistic employees, to be able to fit in better with their teams, both by educating the teams as well as building tools that enables them to communicate better with one another. Really, that’s the big thing. That’s the issue is that autistic people and non-autistic people have very different ways of communicating and different styles of thinking, and it comes out very clearly in the way that they talk., and both sides don’t understand each other. When that happens, usually the person in charge who has the power is the one who dominates and takes it out on the other person, which is usually, let’s say, the autistic person in most cases, and I was like, we’ve got to do something about that. A few years ago, Microsoft started doing a pivot to AI, and I was not interested, so I left. I came to Carnegie Mellon, and as an associate professor, where I get to actually do what I think is important all the time. That’s really solving this mission of helping neurodivergent and autistic people get into the software industry and enable them to be there and work without suffering from discrimination.

Woodall: You’re in the Software and Societal Systems Department. Can you tell me what that department does?

Begel: It’s two departments merged together. So, one is Software Engineering, which is finding ways to build software in the large scale. Where you try to reduce the number of bugs and make people more productive. The other half is called Societal Computing, and that one is looking at the ways that the software that we build impacts the world and impacts society. So, things like ethical AI, privacy, confidentiality, trying to look for large scale systems. It starts approaching electronic policy. It starts approaching human-computer interaction. Actually, I’m also an affiliate in the Human Computer Interaction Department at CMU as well. CMU has lots of departments in the School of Computer Science, which is for me a little bit weird, but I’m getting used to it. I span a whole bunch of different departments. It’s not really like I care about their boundaries. But I am in both Software Engineering and Societal Computing and HCI.

Woodall: Well, that’s great. You won’t get bored now. Can you speak a little bit more on how the research study into people with autism utilizing chat bots for advice came about?

Begel: My student, Joon Jang, has been always interested in what we call the ‘social acceptability of assistive technology.’ If you wear a hearing aid, what do people think about you? Usually, if you’re above 60 and you wear a hearing aid, everybody else thinks that you’re getting old. People have biases, they have impressions. These chat bots came out—like ChatGPT—came out a couple of years ago, and it’s obviously swept the world. It’s a huge deal now. We’re like, “Who’s using it?” “What are people using it for?” “What do people think if you use it?” Joon had the idea to go look up to see if autistic people had been using ChatGPT. He was in that headspace because generally the research I’m doing is all about how autistic people and non-autistic people communicate. Because they’re having lots of challenges at work, what do we do about it? Well, could you use a large language model like ChatGPT to help autistic people and non-autistic people change what they say to each other? He was like, “Well, is anybody doing this?” It turns out when you look on Reddit, there were posts from autistic people saying, “Yeah, I’m using ChatGPT.” One person made a tool on a line, a website, where you could interface with ChatGPT and just ask it questions. He’s like, “What questions are they asking?” They’re asking, “How do I make friends at work?” Or, “My boss just asked me to do something. What does that really mean?” Because they’ve had bad experiences at work where they misinterpreted what people said. They were misunderstood for what they said. They wanted to say, “I want to ask my boss for a raise. How do I do that?” Since there’s a clear art to that for neurotypical people, being autistic and trying to do that without being able to speak that hidden language is quite difficult. We were like, “What’s happening here?” Let’s figure it out. Now, let’s do a study about it.

Woodall: No, that's great. Can you explain what a large language model is?

Begel: Yeah, sure. If you are a vacuum cleaner and you Hoover up all the English that you can find on the internet, which is a lot—like a lot, a lot—and you build a machine learning model, what it does is in the inside, it's basically a statistics machine that says, "Every time somebody says 'the', what's the next word?" "Every time somebody says 'Andrew', what's the next word?" I guarantee 'Begel' is probably not the next. But if you have a statistics model for all, let's say, 150,000 words in English about what word come next, what word comes after that, and you abstract this a little bit. You say, let's not just worry about the next word, but let's worry about the next five words, the next 10 words. In ChatGPT's case, these days, it's about the next 8,000 words. It turns out once you have a model that can do that, it makes sense. If you just say you ask it some question, it will fill in the next 8,000 words for you, and it kind of sounds like English. It turns out that's one magic aspect of the LLM. The second thing that makes it usable, and which is where you get from LLM to something like ChatGPT, is that OpenAI, who made ChatGPT, hired a whole bunch of people to ask the large language model a question and then ask it for, let's say, 10 to 15 answers. It's a probabilistic model, so it rolls the dice and just gives you what it thinks it might be the next 8,000 words. But, since it's a probability, it can change up what the words are. Then it said, "Which of these 10 to 15 paragraphs do you like best?" They said, "That one." Then do it again. "That one." Then again. "That one." That's a Bayesian model that's put on top of the large language model, and it biases it towards answers that people like. If you ask it a question about advice, it will give you a response about advice instead of just giving you a diatribe about something completely random. That's the important thing about why ChatGPT is useful is that it has all the internet inside. It knows how to speak English—a statistical version of English—which is how our brains probably work as well. It's also been trained by a whole bunch of people to be easily pleasing and try to answer the things that you're asking it, which is why this whole prompting of being able to speak to it in English, it's not actually interpreting what you ask. It's just using it as a bunch of words in that probabilistic model of like, "Okay, I gave you these 10 words. What words come next?"

Woodall: Interesting. So then when you're sending a text message and those little words pop up of the next word you can hit, is that an example of this LLM, but on a smaller scale?

Begel: Yes. It's like predictive text. They're using different machine learning models, but yeah, they're all statistical models based on what have people done in the past?

Woodall: Okay, interesting.

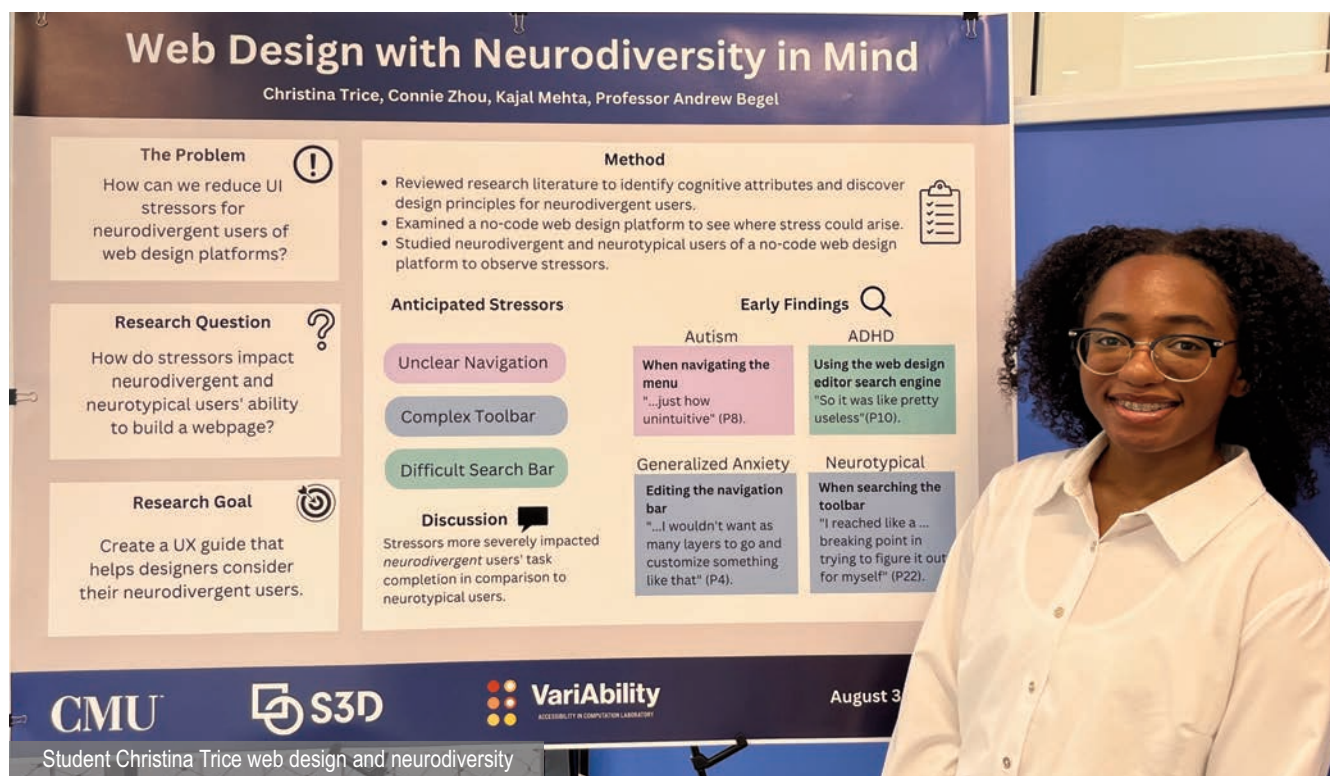
Begel: There is one difference, though, amongst those models, which is about how they're built. The LLM model basically built one gigantic model of the internet and Bard and all the other companies that are building these things. The ones where it tells you what the word comes next to your text message, they built it where the underlying database knew the word that you were going to say next or knew the words that you had said in your previous text messages, but no human actually was able to see any of that. They were just like, "We have lots of data about these probabilities of next words, and we'll put that into a model, and we hope it works." LLMs, on the other hand, have so much data inside of them that they're visible because there's no private data inside. It's all public data, or publicly available data with a license that's probably reasonable. There's a whole different set of issues about companies that have been building LLMs in a legal way, but we don't need to go into that. Anyway, there's a difference between a model that's built on public data and a model that's built on private data. The text message one is private data with that developers can't see. All they know is you used it, therefore it must have been a good model. ChatGPT, we know a lot more about what's inside. We know a lot more about how to bias it, how to mess with it, and that's because we can see into it.

Woodall: Interesting. I saw where in your study, sometimes the results that the chat bots would give isn't always the best advice. Can you give an example of what a good advice response is and then also what a bad advice response is?

Begel: Sure. One of the questions people asked was, "How do I make friends at work?" ChatGPT, to be helpful, said, "Oh, you should just go up to people and say, 'Hi'." For autistic people, that's not really the easiest way to do things. That's not always the one that works for them. There could be lots of issues with anxiety, issues with small talk like they don't understand what neurotypical people want to hear when they don't know them yet. So, when we modified our prompt to say, "Oh, well, don't just give advice about how to make friends at work. Give advice to an autistic person on how to make friends at work." It didn't change anything. They'll send the same core advice. So better advice might be, if you like trains, go to a club about model trains, and go talk about your favorite train. Ask somebody a question, "What's your favorite train?" And see what they say, and then maybe you can talk about your favorite train as well. For an autistic person who's super into trains, that could be easy. They could talk for hours about that. In fact, they found another person who wanted to also talk about trains. That could be a great friendship.

Woodall: How could you change a chatbot to adjust for neurodiverse answers or inclusive language?

Begel: This is where this idea of the prompt comes in.



You can ask ChatGP a question, but you can also give it a scenario before you ask the question. You could say, "Okay, you're a tour guide with a specialty in European cities, and somebody's going to come and ask you a question about which city that they should go to, we'd like you to not be too biased, but we prefer that they go to London. Find a way to work London into the conversation and tell them about all the cool things they can see in London, even if they ask you about something else." That's the way you can control the prompt. That's like the user control way where you can control the prompt and the ChatGPT will try to be obliging and do what you ask it to do. Apparently, telling it you're autistic isn't enough, so what we then do is do something called fine-tuning. So, if the LLM is on the inside is a whole bunch of numbers, it's a gigantic matrix of numbers, it turns out that you can do a process called fine-tuning, where you add lots and lots of data of the form that you'd like it to reproduce. Let's say that you had guidance from a job counselor who specializes in neurodiversion employment, or you had a lot of conversations that you had recorded from clubs about model trains that autistic people were at, and you're like, "Let me put all that in." Dump that into the LLM. Now, I get to slightly modified LLM. That way, when I put them the prompt that says, "Give people advice that is appropriate to autistic people," it might know a lot more about what you're talking about. So, If you think the internet is in ChatGPT, the problem is the autistic people portion of the internet is probably a tiny, tiny, tiny fraction so the LLM doesn't know to focus on that piece, and just one keyword wasn't enough. Fine-tuning would let you get much more of that front and center to the LLM and then be able to spit out more appropriate things, I think.

This is a guess. I don't build LLMs. I might use them, but I certainly don't create them. There's very few people in the world who can create those things. But fine-tuning is one of the things that is within my purview, but we haven't done that yet. I'm still not even sure if that's the right thing to do, but it's possible.

Woodall: It makes sense, especially if it's pulling from all of this data it has. If you increase the percentage of data that's related to inclusive speech, it would make sense that you could generate that more.

Begel: The LLM has something called attention. It's a complicated math function on the inside, but on the outside, it's like, which words in the database should you pay attention to more? That's where the fine-tuning comes in. You're messing with that function a bit. If it has 30 terabytes of information about the internet, there's nothing you can do with your fine-tuning to make it change that. It's really a question of getting it to bias—to pay attention to other things that it didn't notice before.

Woodall: In the study, you found that people with autism preferred the chatbot responses to their questions over the human responses because of their straightforward nature—the black and white quality of it. Do you think utilizing the same information, response, and structure in the workplace would give the opportunity for greater accessibility for neurodivergent people? Kind of like humans learning from chatbot structure.

Begel: Even before chatbots came out, I was working on essentially inclusive management styles at Microsoft. A

lot of it is things like, “Oh, if you tell somebody to do something in a meeting, you should follow up in writing. Maybe make bullet points about listing the individual items that you’re expecting them to do and what you’d like to see in the response.” Those are things that when I talk to managers about them, they’re like, “Oh, that’s just management 101. Those are good things to do if you’re a manager,” but they don’t do them because they’re in a hurry, they’re rushed, it’s not expedient, or they think that the other person gets them and just knows what they want. The problem is that autistic people just don’t know what neurotypical people want. They can’t read their minds the way that neurotypical people think they can and vice versa. I think all this could easily be done and should be done without the help or benefit of technology, but I don’t believe that we can really change a lot of people’s outward behavior. I can tell people, “You should follow up in writing whenever you ask them to do something.” But they’ll do it for a couple of weeks, and then they’ll stop. They’ll go back to their normal behavior. The technology can help by making it more likely that they’ll continue to behave that way if the technology incentivizes them to.

Woodall: When the people that participated in this study say something like, “This is the only thing that I trust,” do you think that that relates back to the reliability of human versus machine?

Begel: It’s that. There’s some techno-optimism that comes into play that, “Oh, technology is going to save the day and save me from all the horrible people around me.” If obviously many autistic people have had traumatic experiences in their lives where everyone around them is like, “You’re weird, you’re strange, we don’t like you. Why can’t you just be like everybody else?” That’s not so much fun to grow up in. You tend to start mistrusting everyone around you because you think they probably have an ulterior motive you can’t figure out, yet it’s probably there and it’s probably negative against you. When they see a machine being able to possibly give good answers that are clear they’re like, “Oh, thank God, something.” It’s technology, which means it can’t be biased. It’s not right, but they believe that. That’s how they want to appreciate the technology as the solution to their problems.

Woodall: How do you feel about that?

Begel: I think they’re overly optimistic. I don’t think that the LLMs are the right answer. I think it’s probably a component of it, but they can’t tell the difference between a good answer and a bad answer because they just want to trust it. That’s the problem. We call this overreliance on AI when people trust AI more than they should. AI, even if it wasn’t biased in any human way, AI has things called false positives and false negatives, where it just gets things wrong, and that’s part of the inherent creation of the AI itself. LLMs hallucinate facts. They make stuff up because, again, they don’t

understand English, all they do is they know the statistical probability that one word follows another. So, when I asked in LLM, “What was my most cited research paper that I’ve ever published?” It made up a paper I have never written. With authors that are like people I know at a title that’s probably a paper I could have written, I bet. It’s in my topic area, but it was totally made up. It had looked real. You don’t want to overly trust in the AI because it’s going to give you wrong answers. We need to teach people how to be appropriately skeptical and maybe also steer them away from answering or asking questions that involve facts and more things that involve stuff you can find in a regular search engine. I think that would be the right way to go.

Woodall: So do you think it needs to be more like a blend of you have this AI chatbot, but then also you could maybe verify that information somewhere else as well?

Begel: Maybe. I kind of really think a human ought to be in this somewhere. I could use it as a training device. As a person who’s a counselor, I could ask ChatGPT to generate me a scenario of a workplace where you asked your boss for a raise. It could create a whole cool story about it, maybe a whole page. I could then look at that, maybe tweak a few things, and then use that when I work with my autistic client. That’s great because that saves me lots of time and you still have the human in the loop who makes sure that the scenario is right and not just made up. Brainstorming it’s certainly really good at. I think for training scenarios, it could be incredibly useful. One of the things we were thinking about in the paper was, what if, let’s say, ChatGPT gets so good and autistic people start using it to mediate all discussion with neurotypical people. Let’s say that I only talk to anybody through email and never by voice—for now anyway—and every time I’m about to say something, I say, ChatGPT, can you write this in a way that neurotypical people like my boss would understand. What world have we just created where we don’t actually want to listen to the authentic voice of our autistic colleague? All we want to hear is the sanitized version that’s sanitized through LLMs. That’s not cool. And vice versa, we’d have to translate it back. I think it’s a tool. It shouldn’t be what our expectations should be. We shouldn’t grow to require it. It’s not glasses. It’s not speech recognition. It needs to be properly perceived as a tool that I can use or not use as my choice.

Woodall: You get into this sticky situation with that of who should be accommodating who, right? Who should be adjusting to who? And like you’d mentioned before, a lot of times the person that’s in power is the one that has the say at the end, and typically in a work hierarchy, the person in power is your boss. Do you have any ideas or thoughts on how you can adjust that power structure to where it’s not the neurodivergent person feeling like they need to accommodate to be seen as “normal”? My cousin is autistic, and she uses the word “normal” when



she talks about wanting to fit in. Do you have recommendations for how to adjust that?

Begel: It's funny. We're doing this research at the University of Maryland where we run focus groups asking autistic people, what do they want in the workplace. What would their ideal workplace be? Almost everything they say is just clearly the neurotypical person is just evil, wrong, bad, needs to change how they behave because the autistic people are trying their best. They're doing exactly what they're told to do, and yet it still comes out wrong. They're like, "This isn't our problem. This is the neurotypical person's problem." In parallel to all these research efforts, I have an effort around education. We built what we call a visual novel, sort of a transformational game to teach neurotypical people how to work with their autistic colleagues. We have these little scenarios like: "You have a new autistic colleague at work, and when you try to do a presentation, the noise and light from the projector bug the crap out of them because many autistic people are hypersensitive to sensory stimulation. It was too much and he left the room." Then we give the person three choices. Do you go after him? Do you let him go and talk to him later? Or do you just think, "Wow, what an asshole. Why did he leave?" Usually, there's one choice that's like, "You're an awful person." Another choice that's like, "This is the way to properly be an ally in the workplace." Then a third one, which is maybe in the middle where it seems reasonable, maybe it's good, and then you pick it, and then it turns out, actually, that's not always the best choice for different reasons. We try to explain why do these choices work? Why do some choices not work? That's a way to get through to the neurotypicals around and give them the training. Because autistic people have been training since their diagnosis how to be what your cousin says is "normal." That sucks. That's a sucky way to live your life to have to mask like that for their entire life. It would be so nice if we could push the training burden onto the non-autistic people and tell them, "Hey, everybody around you isn't like you. Maybe here are some things that you could learn about autistic people.

Here's some things you can learn about people with ADHD."

One of the biggest things, actually, for me is that when non-autistic people talk to each other, there's always an ulterior motive about what you say. You always have something in mind that you're trying to get across that you're not quite saying, but your words and your gestures are trying to get it across. Most people learn this from their parents because their parents always have an ulterior motive when they talk to you. They're trying to get you to behave a certain way, and they don't want to just tell you. They want you to suck it into your being so that you hear your mother's voice in your head when you're about to do something bad. Autistic people often don't have ulterior motives when they speak. They just speak super plainly and they just say exactly what they mean because all the rest of that stuff is not really important to them. But neurotypicals always think that everyone who talks to has an ulterior motive. So whenever they hear something that an autistic person says very plainly, they think, "Why are they really saying that? What's going on in there? What are they trying to make me do?" And their brain goes in so many different directions, and often negative directions, that it's unfair because this autistic person didn't say, literally said nothing, and it's all inside that narrative of the person head who probably needs therapy. So maybe everyone who's not autistic should get therapy, and they should all get training on how to interpret how autistic people talk and what they think, how they think. I think vice versa. I think it's really important that both sides accommodate to each other. Autistic people have parents who are not, let's say, not autistic sometimes, and they learn to like each other. They grow to understand each other. I mean, it might have taken 25 years before they really get it, but that's a process that works. Maybe we could learn to accommodate to all sorts of people and therefore have better relationships. That's the big ulterior thing in my research is, how do I help people create better relationships? I think you need both sides to accommodate. I think a lot of the work needs to be done on the neurotypical side, on the non-autistic side. I think some of the tools will help bridge the gap.

Woodall: I was actually talking to my cousin about the work that you're doing, the studies that you're doing with the chat bots. She wanted me to ask you—this is my cousin's question. What advice do you have for someone who has autism that's entering the workforce for the first time and is just pretty scared about it because they're used to being perceived differently, being treated differently, and things like that? What advice do you have for them?

Begel: The first thing is to find a job that is related to the things that she likes to do. Number one, don't take a job just because it's there. Not only is it because it's things that you like, but it's also things that you're good at. Because often, neurotypical people or non-autistic

people will respect expertise. If they respect expertise and you have the expertise because you've been thinking about this for a very long time, they will give you a little bit of grace when they don't quite know how to talk to you. That gets you through the door, I think. The next thing is that there are people out there called job coaches, and many job coaches specialize in working with autistic people to help them understand this non-autistic work environment. That's huge. I work with several job coaches in the research that I do to help the students that I'm working with, the autistic students. It's invaluable because when your boss says X and you don't know who to turn to, they interpret that, they're there. You can call them on the phone and be like, I don't know what's going on here, or "I think it means this, Am I right? Am I wrong?" They also can interact with your boss, and not in a he said, she said way, but in a way of like, if you keep complaining that your boss gives you ambiguous instructions, they can go chat with your boss about like, "Hey, let's talk about how do you give instructions and see if we can find a way to make them more clear." Having a job coach is really hugely important. It's unfortunately very expensive, somewhere on the order of 200 to 250 bucks an hour. Lots of places don't have that. However, they do have accommodations, and accommodations under the ADA are something that, if it's reasonable, they have to give it to you. If you say things like, "Whenever my boss asks me a question or asked me to do something, they have to follow up in writing. I'd also like them to follow up in several days." because maybe you've got autiHD, the autism and ADHD combination, and sometimes I think of a weird way to do something that the boss thinks that there's a more straightforward way. Maybe they should check in with me after a day or two to make sure that I'm doing it the way they thought it should be done.

Those are things where your manager can do all these amazing things if they recognize that they're supposed to or that it would be helpful. That's really where your cousin who enters the workforce is really going to have a positive experience. The last thing I would say, and this is the one that's really challenging, is to find a workplace where you can be out as autistic, and you don't feel like that's a negative, because you definitely don't want to be hiding in the closet as an autistic person. It's never going to go well because then everyone around you will misinterpret everything you say as malice instead of autism. But if you can go to a place where you can be out as autistic, then neurotypical people have a reason to empathize with you. They could be like, "Oh, that came out weird. Is that because you're autistic?" If it is, maybe they actually try to learn about you and they try to learn and understand how you behave and how you talk and why you're doing things like that. You could be an agent of change and not just a peon, not just a pawn, and to be shuffled around by the non-autistic people in your midst. I'd like people like your cousin to be a leader and be proud and open about things like that, because then that would help them train and teach

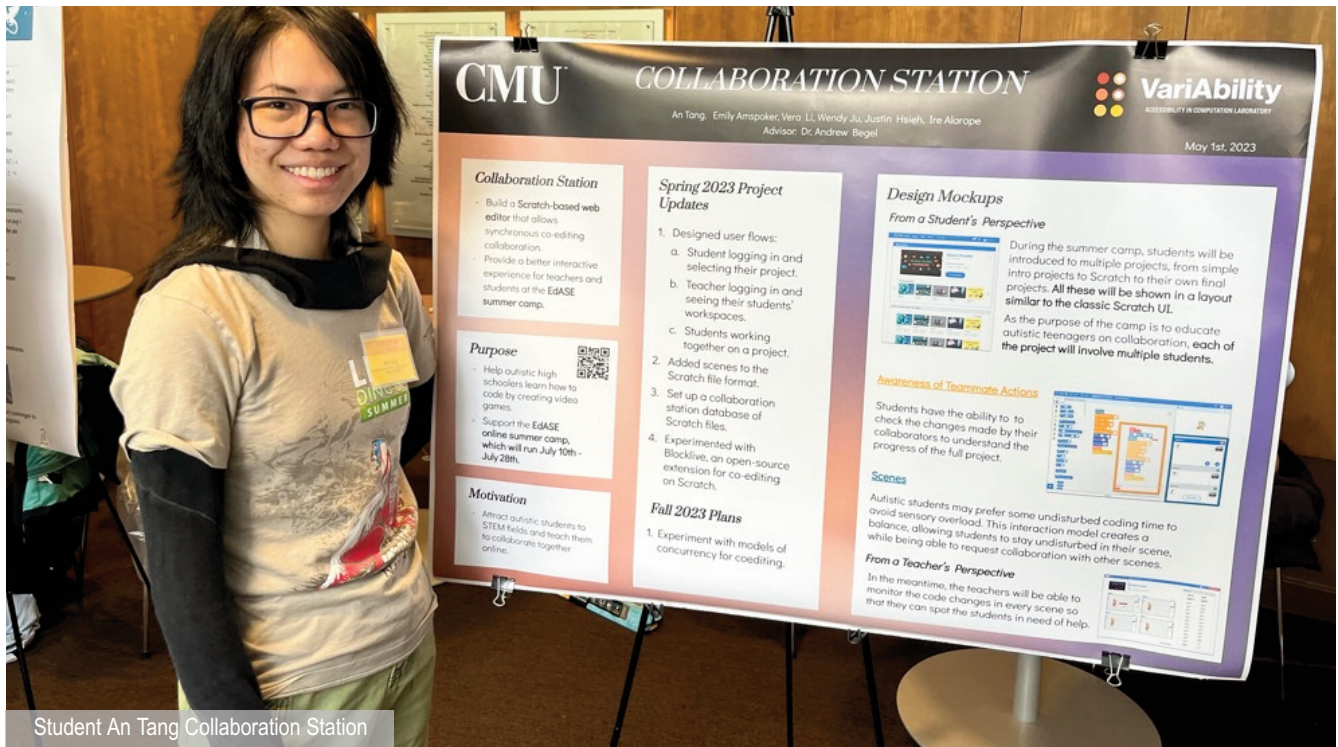
other people and change the world so it's a lot more inclusive.

Woodall: I totally agree with that. I try to encourage her as much as possible, but it's really hard for her to overcome these past, really negative experiences that she's had. So, I'm glad that you talked about finding a workplace where you can be open about being autistic because her instinct is to hide it because she doesn't want to be viewed differently.

Begel: Part of my research area is autism and employment. In each region of the country, we're developing these Neurodiversity @ Work hubs. I have one for Western Pennsylvania, Ohio, Michigan, Indiana, called the Southern Great Lakes Region Neurodiversity @ Work Hub, which basically connects neurodivergent people, employers, service providers, university professors, researchers, and people who run those career offices at universities. We're trying to basically build local networks, local to the region so if you have a student who's coming up in your college who's looking for a job, can you find a job within your region? Because not everybody wants to move to the West Coast and go work at Microsoft. Some people want to stay in Columbus, Ohio, and just go live in their parents' basement for the next 10 years while they go work at a bank. We can make that happen. We can find them, we can get them a job that is compatible where they do have these special neurodiversity programs. Wells Fargo has one in Connecticut. There's a Yukon Neurodiversity @ Work employment center, there's one in Vanderbilt, there's one at University Washington, there's one at Stanford in Palo Alto. There's one I just met called HAAPE, which is an organization in Florida and Georgia, tries to get people into jobs through avionics and Q&A testing and drone flying. There's all sorts of employment. Actually, at CMU itself, there's something called the ARM Institute, which teaches people how to do robotics, CNC robotics, which is the robotics that builds cars. Training autistic people to do robotics, build cars, and get jobs. Then they have a gigantic database. There's probably 40-50,000 jobs available in CNC of robotics across the country in every single state. No matter where you are, if you have that kind of training, you can get a job.

Woodall: That's super cool. Are there resources as well for trying to find a college that can accommodate neurodiversity? If you're wanting to go and get a degree.

Begel: There's two of them. One of them, the best one is called CANVAS—the College Autism Network—they are a consortium of currently about 135 different colleges across the country that have spectrum programs, that's what they call it. Basically, programs where you come in, they support you through the entire however many years of college or community college or university you're going through, and they also work to find employment for you at the back end. They have a yearly conference, which we go to, which is really nice. That's



Student An Tang Collaboration Station

currently in October, called the College Autism Summit. It's very inspiring to go through that. I really like that. The second one is something called Access Computing. That's a center at University Washington, whose job is basically, how do we get disabled people into STEM, and how do we make sure the education that we're giving to them is accessible by people with disabilities. If you're teaching programming, how do we make sure that your class is actually accessible to blind people and to Deaf people? They had been focusing a lot on physical disabilities, but they have a bunch of people now, including myself, who are focused on cognitive differences. Those are the two main organizations that I would say. One is much more practical in terms of it's connecting all the university offices where they already have somebody who helps out with their diversity. Then the second one is more about how do we help the Office of Disability Services at every college accommodate students, but not just by giving them extra test time, but if you're trying to use some package of software that itself isn't accessible to people who are visually impaired, well, then it doesn't matter how many extra hours on the test they're going to have. They just can't do the work. And it's not their fault. It's your fault because you didn't come up with the right tools for them. And that's fixable. So let's fix it.

Woodall: That's awesome that those resources are out there for sure. I was reading that you're also involved in something called VariAbility. Can you tell me a little bit more about that?

Begel: Whenever you become a professor, you get to name your lab. That's one of the things I did. I was really trying to find a way to combine the word ability

because I work with people with disabilities and all kinds of abilities. I wanted a label to describe that we appreciate the variation in everyone's abilities, and we don't try to change people. We don't try to say that you're bad and here's a tool that will fix you. It's all like, how do we all work together the way we are, given what we bring to our work and what we bring to each other as socially, how do you accept and accommodate everyone? That's why I came up with the name. I thought it was clever.

Woodall: Do you want to highlight some of the projects that you're working on? Some that stick out to me are the INTENT, the FIT and the Neurodiversity-Aware Platform for Education.

Begel: Sure. The INTENT Project is the one that I talked about where we train neurotypical people to be allies of their autistic coworkers rather than assholes. I don't know a better phrase for that. Sorry, that's probably printable. That's basically the visual novel transformational game approach of instead of just giving them a boring lecture, we'll actually let them play this game where they can go through scenarios and understand what it's like to be a better ally. The FIT Project is a technology-focused project looking at how do we use AI to both watch conversations between autistic and non-autistic coworkers and automatically detect when the conversation goes awry. When does it go off the rails where, let's say, you're overwhelming the autistic person with too much information and they just like to stop processing when the non-autistic person, let's say, is giving the autistic person a list of tasks to do, and they think they understand that, but the fact that there's a big misunderstanding throughout the entire conversa-



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tion, and they don't even realize it. Could we build an AI that can detect those things? The second part of that project is, could we help and do something about it?

With the first part of the project, we've done focus groups with about 70 or 80 autistic people, to ask them, "If you had some technology to help you at work, what are the problems that are happening to you at work and what would you like it to do?" We've been working on some machine learning models that understand the way people interact and talk, looking at their face, looking at their body language, which is very different between autistic and non-autistic people, looking at the words that they say to try to understand the conversation, so using some linguistics and rhetoric, social science, to get what's going on there. We work with some speech and language pathologists at University of Maryland to focus on working with autistic people to teach them social skills, teach them how do you interact in a neurotypical world and how do you adapt to live in that world. Everybody's all working together to try to figure out how can we build this AI that understands these conversations and understands them at the level of, let's say, 5 to 10 seconds of a conversation versus 10 minutes into a conversation, can you tell that something has gone wrong?

So far, the simplest thing we've got, based on one of our data sets, which was just two people getting to know you questions. We figured out that the more that both

people smile at the same time, the higher they rate the conversation, it's probably working. Whereas if they are not smiling at the same time or they're not smiling at all, then usually both sides will rate it very low, and both sides will be an autistic and a non-autistic person, which is nice, but it's not quite there yet. We have a couple more years really focusing on this project. One of the areas that I think I'm going to be going in, again, is this idea of how can we use LLMs to support this kind of training? Could LLMs provide prompts for people? Or could it help you interpret what a non-autistic person is saying to you or vice versa, actually, in the moment so that you could be like, "Oh, here's what I thought it meant, but the LLM says they meant something else. Maybe I'll trust the LLM." It maybe knows more because we fine-tuned it somewhere. We haven't really decided on any particular interventions, but we're just going to explore that area.

Then the NAPE project, which is the Neurodiversity-Aware Platform for Education. This one's a really fun one, actually. I like looking at people with different kinds of learning styles, learning differences, and learning disabilities. I teach a bunch of courses to autistic kids. One of them is a video game coding camp, with high school kids from age 14 to 21 or so. We're teaching them not only how to program video games, let's say in something called Scratch, which is a block-based programming environment. We also teach them communication skills, and we teach them teamwork skills



Andrew Begel and research lab group

because nobody knows how to work on the team. We just assume that neurotypical people just figure it out by watching, and autistic people don't figure it out by watching. So, let's teach them. We actually explicitly teach these teamwork skills. What I found when we were teaching this course is that there's so many other things going on with these autistic students. Some of them had slower cognitive processing than I was used to, so when we would talk about following what I did on the computer screen, I would demo something, and some of them would take a few minutes to process what I just did, and maybe they would get behind. Other people, I would say, "Do this, do this, do this." And they wouldn't be able to read their own screen quickly enough to know what I did because they had dyslexia and they couldn't read that fast. Other people, I would say, "Oh, make the name of your variable Zoom," and they would be like, "How do I spell that?" and they'd sit there for five minutes figuring out how to spell Zoom when that wasn't the point of what I was trying to teach. That was just a random word I happened to say. What I want to do with NAPE is to automatically adapt the instructions that the instructor gives for the particular combination of cognitive skills that a person who is listening has. So, I'd make a configuration page that said, "I spell really, really well. I spell okay, or I need to spell check every time I type," or "I read really fast or medium speed or really slow," or "I like to do one task at a time. I like to do three tasks at a time. I like to do five tasks at a time," and I'm definitely in the five task camp.

But you can imagine for all the different cognitive attributes that we usually associate with ADHD and autism and dyslexia and dyspraxia. If we had a student's configuration, I could automatically modify the instructional video with some AI help to accommodate for

every single one of those things. Every time I say, "Oh, click on this," how about it just a big circle comes up and circles the thing on the screen that says, What's a click on? Nobody has to go reading anything because that wasn't the point anyway. I just click on that. Some people are bad at visual search, so I'd even make that circle animated and have lots of arrows pointing at it and stuff to really focus their attention on it. For people who need a lot more attention or whose attention requires a lot more stimulation, than a neurotypical person, I might need to give them background facts, as I'm talking, that pop up like an MTV style or something so that they would be so interested in the things that are going on inside the program. One thing we do for students with ADHD—often attention will change during the lesson, and they'll look away, and then come back, and then they have no idea where we are. I'm like, "Well, why not we use an LLM to summarize the text, the transcript of everything I said, make it into an outline or an agenda, put that agenda on the screen, and then change the highlight of where I am in the agenda as you move through the video." Super easy with AI. It gives people a grounding of like, "When I look back, where am I? Oh, I'm over here. Great." If I wasn't sure what I did before, I even have it visibly listed on the screen. That's so handy.

Woodall: Who gets to get involved in that? Is it students? Do you get people from outside the university that will come to your lab? Who gets to do projects?

Begel: I work with graduate students and undergraduates, primarily at CMU. We do have a summer program called REUSE, which college students from across the country can apply and come to CMU for a summer to work with me. I had three last summer. That was really fun. But typically, I have usually about 25 undergradu-

ates work with me every semester. Then I have currently three graduate students and potentially two more coming in the fall, where sometimes this is their project, sometimes it's not. I have another student who's really interested in how ADHD programmers are different than people without ADHD. She's using eye tracking to watch them work and see how they think and see how they collaborate and look for differences and similarities and strengths, in particular. I have another student who wants to really look at dyslexia and programmers to see where they succeed and have challenges.

Woodall: Do you have anything that you would like to mention that we haven't covered today?

Begel: I think we focused on the right stuff. I really appreciate asking your cousin's question about getting a job, because I'd like to say that I'm really interested in technology, and I think technology can solve a lot of our problems, but I want to be very, very clear that humans are the most important things here. It's our relationships, it's our lives that are the ones that we're trying to improve. Computers are the tool. They're not supposed to be the person we talk to to get advice. They're supposed to be the person that helps us talk to the right people and maybe gives us advice about how to talk to them to then get the advice that we should get. I feel like in our lives, it's really all about relationships and having positive relationships at work, having positive relationships at home. The more we can do to help people have those relationships—and it could happen to be technology or education or teaching, all those things are great—but the focus is on the people. The focus is always on the people and making people have the lives that they want to live and get things done the way they want to get them done. I think that's the most important aspect of all this, and for people of all different kinds of disabilities.

Cooper: You had mentioned that you're involved in the employment side of things, are you aware of ABILITY Job Fair, abilityJOBS or abilityE?

Begel: No, tell me more.

Cooper: abilityE is a free resource for performers with disabilities that want to get into the entertainment industry. That could be anything from theater, local theater to movies, TV, voiceover, music, et cetera. What we do is we put out this abilityE challenge, and these individuals with different disabilities post these reels, and then we just rotate those out. This all came about because of Netflix needing to find a talent of a certain age that authentically used a wheelchair. They came to us in us being ABILITY Magazine and abilityJOBS. They could only find 10 with their normal outreach, and we sent them hundreds auditions. We decided, "Let's make that permanent," and that's when we created abilityE. abilityE is a part of our nonprofit ABILITY Corps. We're actually building AI in right now. The AI within abili-

tyE will make it even easier than the keyword search that you're doing now. It'll streamline that process. abilityJOBS is the first job board online. It was started in 1995. We were the first to build a connection between job seekers with disabilities and employers. Then the next thing would be ABILITY Job Fair. This is the first and only accessible online career fair. It's the first one of its kind in that it's built with screen reader capability in mind. Everything from scratch, built to be accessible and featuring face-to-face video. When the people get into the event, let's say there's a thousand people that log in in the morning for the event and they have X amount of recruiters, these are actual recruiters looking to hire. They get to meet them, but if the job seeker happens to be Deaf, they can, with the click of a button, have a third video appear with a sign language interpreter.

Begel: Nice. I love it. Is that focused mainly in the US or is that international as well?

Cooper: Both. We have employers that are only national, as well as international.

Begel: I think there's not enough people out there who care about getting people with disabilities into jobs. Let's all work together and see how much we can get done. We have a lot of people to get into employment. We have 8 million autistic people, or well, there's 10 million autistic people in the country or so, and 8 million of them don't have jobs. We got a lot of work to do.

Cooper: Did I hear you earlier mention stereotypes of persons with autism?

Begel: I mean, the stereotypes that people tend to apply to autistic STEM people is basically is they're good at pattern recognition, they're good at debugging, and that they're good at hyper focus. So they think, "Oh, we have a big bug database. Maybe I'll just let them loose and they'll fix all the bugs or find all the bugs." There's actually quite a few companies out there that hire exclusively autistic and neurodivergent people to do Q&A for tech companies. They have large teams of people who are maybe 75-80% autistic, and they give them client code that's basically just, "Here's a Q&A job. Go do it." I think that some autistic people probably want a lot more than that, but others are happy doing that thing, and they think they're good at it, but everybody's different. They all have different interests. They all have different things that they want to do. It's better not to stereotype, but to actually talk to the individuals.

Woodall: Thank you for joining us today.

Begel: Thank you. ■ **ABILITY**

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New Blind and Low Vision Navigation Technology

Independent navigation is an ability so second-nature that most don't recognize it as a privilege. The general population doesn't think twice throughout the day about leaving their home without assistance, finding their way to the grocery store, or taking a walk alone in a public park. But for those with blindness or low vision, these tasks are more challenging.

A nonprofit founded in 2019, called Hearsee Mobility, has observed that nearly a third of the blind population would prefer to stay home rather than face the frustration of maneuvering through an inaccessible environment. The organization's mission is centered on alleviating what its founders perceived as an epidemic of isolation within the blind community.

Global positioning systems have been around for years, but companies like Hearsee have taken the concept to a more versatile level by incorporating helpful audio descriptions and cues into their technology. Audio descriptor apps like Hearsee's allow people with blindness and low vision to independently traverse public spaces with safety and precision. While the innovative tech is a huge step toward equity, financial barriers to entry are a concern.

Hearsee has prioritized the inclusion of the traditional walking cane into its navigation system to preserve the comfortability of familiar tools and make its system as tailored to people with blindness as possible. Each indoor or outdoor location registered with the organization is also thoroughly tested by a local person with blindness or low vision who would potentially be navigating the space themselves.

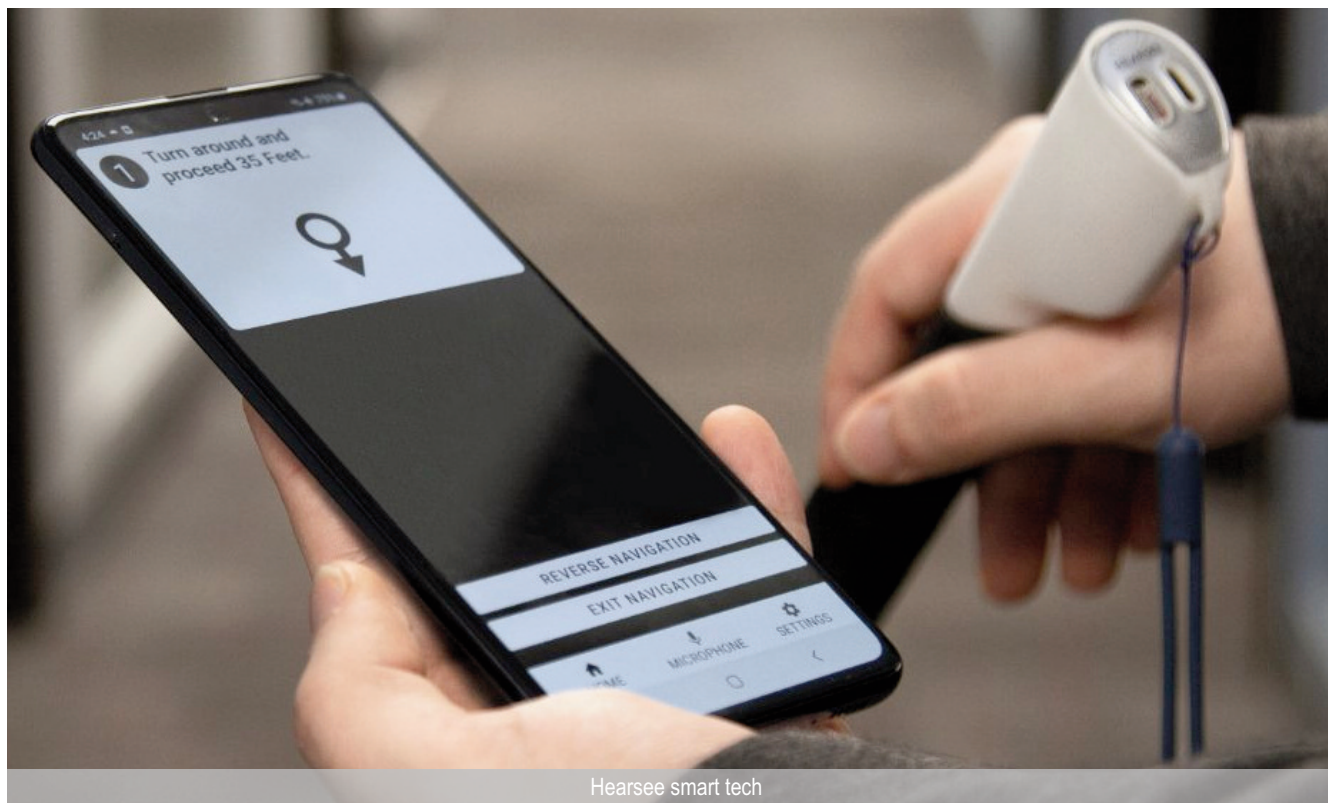
ABILITY Magazine's Isabella Wisinger met with Susannah O'Brien, Director of Development at Hearsee Mobility, in a virtual interview to learn more about the organization's indoor-outdoor navigation system and discuss the implications of Hearsee's model on the next generation of people with blindness.

Wisinger: When I was reading the materials you sent over, the understanding I came to is that Hearsee is developing an app that helps people who have blindness or low vision to navigate indoor spaces step by step. This is happening through the use of an app and a smart walking cane. Is that right?

O'Brien: Yes. There's a third component, too. But those are two of the three.

Wisinger: How does the cane work with the app?

O'Brien: So that's the third piece. It's the bridge between the two. A building that wants to participate, or even an outdoor space or park, we upload a map of that



Hearsee smart tech

space. It can be a Google map, a top-down visual, blueprints of a building, anything like that. We host that map on an off-site website. And then the person who is controlling that site will go into the digital map of the space, and they'll drop in little nodes to say, "This is conference room B. This is Jenny Smith's office. This is the painting of a sunset." They'll go into their digital map to type in all the details of where things are located. That all gets uploaded and stored to the cloud online. That's when it becomes available on the app. Then a blind person will be able to know about all the buildings that have been added, all of the buildings that have that map downloaded.

Now, the other piece that bridges the two, where the smart cane comes in, is this piece right here. I happen to have one with me. This is an RFID sticker. There's this little computer chip behind the number in the middle. You can see it popping in in the middle there. This little computer chip houses the descriptions from the website. So someone puts in their blueprint, they say, "This is Jenny Smith's office", and then they put this flat sticker on Jenny Smith's office door. As the walking cane passes the sticker, it's going to input this information from the internet. The app will play the audio, "Jenny Smith's office. Jenny Smith is the head of 123, and specializes in XYZ." It's the app and the walking cane, and then this RFID piece, working in tandem.

Wisinger: And it's the coordination of the people who are in the space that's being certified to correctly put those chips up in the right spot.

O'Brien: It's customizable to the building, which means that if Jenny Smith ever leaves that office and it turns into Bob Jones' office, then whoever runs that building just logs into the website and updates the information. Or if the stairs are out of order, or the elevator stops working, or they add a wing to the hospital, then they have control to edit anything that changes in the building. We have this whole system organized to teach the building owner how to type all this in on their own. It can be done in a day. It's really simple. All they're responsible for is uploading the map about their building, and then dropping in these pins to specify descriptions of different locations in the space. Then they just put a sticker in that location. The computer chip is activated by an antenna in the walking cane. It doesn't have a power source. It doesn't have a battery. It's not electric.

Wisinger: So the walking cane has an antenna inside that wakes up the computer chip when it approaches. I'm loving that this can be updated in real-time, depending on changes to the location, which is so important because places will have new features or undergo renovation like you said. As far as the cane goes, how does that work? Do people own these? Do people who sign up for the app receive a cane in the mail and then use it at different locations? Or is it that participating locations have these canes available?

O'Brien: So for now, it's the second one. The bigger vision is that enough buildings have the system in place that it would make sense for individual people to own their own walking cane. We've begun conversations

with the ADA and other government agencies to see if the cost of a cane could be covered by insurance or some flexible spending account. But at this point, it's not necessary for everybody to have their own, because not enough places have this installed. So the current plan is that buildings that want to participate will purchase the system. They'll receive all the materials to make that happen, including a set number of canes. We'll do an analysis of the area to say, "This is how many people might reasonably be in your area at one time." So if it's five, you're going to have five canes. If it's 12, you're going to have 12 canes. And then they can distribute them at their will.

What we suggest is similar to a museum checkout service. Have you been to a museum where you have to put your backpack behind a counter? They'll give you a ticket or a coat check? We propose something like that. The front desk has a couple of canes, and somebody walks in and says, I want to check out one of your canes, and they do an exchange, and then the blind person can use it in that area.

Wisinger: That seems like a good way to go about it for the time being. I love the bigger vision- hopefully this technology permeates more and more spaces, and it becomes feasible for people to own a cane because the system becomes so widespread that they can use it at a multitude of places that are a part of their daily life. So, it's a perpetually ongoing project that's expanding as new buildings and the locations are added into the app.

O'Brien: Any business that wants to install a system, we have a training course with them on how to install their map, and how to place the stickers. There will be a training process on our end to make sure they understand all of that and do everything correctly. And then once they feel like their map is complete, part of the cost of installing the system will include a certification from a member of the blind community. It's creating jobs at the same time. We already have a waiting list of blind participants who want to be certifiers. What we'll do is contact somebody in that region and have them walk exhaustive paths in that building to make sure everything was set up correctly. Once they have a good report, it'll be released to the app.

Wisinger: You answered my next question, too, with that. I was going to ask, who are the community members that are approving these spaces and what's their process? People who would be going to those places any way and utilizing the tech, it sounds like.

O'Brien: We're all about supporting the blind, and this is just one way of doing that. 54% of the blind population is unemployed, and more than that are living below the poverty line. And it's because life is so frustrating that they're either not very able to take advantage of education and skills training opportunities, or they can't find employers who are willing to take a chance. One of

our initiatives is to get them feeling more comfortable and feeling more welcome in their general communities for a higher quality of life, but to also change public perception and try and create jobs if we can. It's part of that mentality of once you understand a problem, you're responsible for working on a solution. And this goes way beyond people deserving the right to explore their communities. This goes back to being able to receive an education, being well qualified for jobs, and then enjoying your communities. If we can incorporate some employment through all of this, that's one of our big goals.

Wisinger: I love that you're incorporating the employment aspect. And the stat is what? It's 40 % of people who are blind or have low vision are living at or below the poverty line? And then Hearsee's data says 30% rarely leave their home, which is the driving statistic behind this your mission, which is that people deserve to enjoy their lives and explore.

O'Brien: This all started between 2018 and 2019. That's when the idea came up, but it was an idea from a sighted person. It was an independent philanthropist who was traveling to China, and he was going by train from city to city in China. He went to this multi-story train center, and all of the directions were in Mandarin, and all the people speak Mandarin. He said he felt figuratively blind. He had just no idea what was going on. He comes home from this trip and says, "I want to serve the blind population with my money." And so he spent two years hiring a team and talking directly to the blind community to say, "This is our idea, but we're sighted. What do you want? What will work for you?" A lot of people say they want to help, and then they don't follow through. The blind people they worked with said, "This is what we want, and this is how we want it to sound, and this is what we want it to do, and this is how it should feel."

And they [the blind community] really designed the whole thing. I spent two months during the COVID phase living in a foreign country where I wasn't allowed to leave my house. I was within an apartment for 60 days. And I know how I suffered in that experience, and how my family was affected. To understand how many hundreds of thousands of blind people have felt like that, their whole lives, is really upsetting.

Wisinger: Yeah, that's tough on so many levels, psychologically and socially. I know that social support is one of the most integral, foundational things that people with disabilities need to have a better quality of life. And not being able to leave your house independently is a huge barrier to that. When I was reading about this, I was amazed by the thoughtfulness that's been put into this idea. And I like to hear that the man who founded this company, brought it directly to the community and asked them, what do you need? How will it work for you? Because I think so many people are very well



intentioned. But if you don't include the people from the communities that you want to serve, that's when things tend to fail or go wrong.

O'Brien: It's really important to us that we are working directly with the blind community instead of trying to tell somebody what to do.

Let me add a little bit of a complication. I'm not sure if this came through in the materials, that we are operating as a nonprofit. It's because through that initial research and realizing how many are living at or below the poverty line, there's a big hesitancy in the blind community to accept new technology because it's expensive, it may not work properly, you've put in all this money for something that you can't always rely on. If it breaks, you have to replace it. It was paramount that we developed this in a way that was not a financial burden on the blind population themselves. That's why we were organized as a nonprofit and have set up all of these procedures so that the blind will not have the direct burden of having to purchase the cane, of having to subscribe to any service, because there are a few out there that are subscription-based off how many minutes a month you can call up and ask somebody to describe your surroundings.

There are a few services like that, but they're cost prohibitive to the majority of the population. It was important that we find a workaround for that.

Wisinger: For those who want to be a part of what you're doing, what are the actions that people can take?

O'Brien: Sign up for our email list. We're also building our social media presence. I can send you some of those links if anybody wanted to just help us spread the word. That's really the best thing. We do need to raise money, but we mostly need to raise awareness, too, and support for the blind. So what our newsletters generally do is

teach a little, bit by little bit, about blindness and about interacting with someone who's blind so we can create a more inclusive environment at the same time.

That's one of the big initiatives of this overarching project. If we can serve the blind and empower them to enter their communities in higher numbers, then the ripple effect is that the general population becomes more exposed to those with disabilities. Then it becomes normal and it becomes fun. You can build these bridges for respect and dialogue. Then who knows, the next generation is going to be more comfortable with blindness, and maybe they'll be inspired to do something even better. But it all comes from that exposure and respect. That's what I found is that many people don't understand

blindness. And the blind are the ones suffering because there's a huge lack of support. So I'm personally dedicated to just raising the exposure of blindness so that we can all, as idealistic and cliché as it might sound, we really can have a better society if we're exposed to differences and learn to respect and love each other. I know I'm preaching to the choir.

Wisinger: I couldn't agree more. What are some of the most popular location requests that you're receiving at Hearsee for the app?

O'Brien: The one that surprises me the most is museums. I hear a lot of blind people saying that they want this service in all sorts of museum settings. They've been stretching their minds for years to memorize things, to do mental mapping. They have to pick up on all sorts of social cues that most of us take for granted. And they want more. They want even more opportunities to learn and grow as people. And they really have a deep appreciation for art and 3D museums, dioramas. One of our big priorities is getting buildings set up that are art-related and museum-related, like a public learning garden, because this could be placed outdoors as well. You just need a hard surface, one of those description placards to put the RFID sticker on. We're even working with a charter school right now, that's an arts-based charter school, whose building is full of artwork.

We're tagging all... We're describing all of the art on the walls as well as the classrooms, and the chalkboard in the classrooms, and that stuff. I have one blind friend who's a young mother. She's 27 years old, I believe. She's been blind since she was a child, and she's a stay-at-home mom of two little girls. She said she wants to go to the museum and hear a description of the dioramas so that she can teach her children and learn more.

Wisinger: On social media, we have alternative text and everything to describe images and content. This is like

an advancement of that concept, putting that into the real world so that people can have the same accessibility in real life, not just digitally.

O'Brien: Exactly. And something that we incorporated because the blind asked for it is a feature of the Hearsee Network that we call "tour mode". So there's navigation mode where someone can say, "I'm in the lobby of a hotel, and I need to get to hotel room 307." And it'll say, "10 feet straight, turn left, take the elevator." And it'll give them the step-by-step directions to get from one spot to another spot. But there's this optional feature where someone can choose tour mode, either by itself or with navigation, so that as they're walking, they'll also hear, "To your right is a baby grand piano, to your left is a painting of such and such. You're walking on floor that's Calcutta marble," whatever it is that the place wants to describe. And someone can choose the description service so that as they're walking somewhere, they're understanding the environment for the first time because we take for granted how we feel based on what a place looks like. Architecture and interior design, they're all very intentional art disciplines to elicit a connection from people. So being able to get where you're going is one huge barrier, but being able to enjoy where you are in that process is just another level of human experience, and it's another level of someone's quality of life.

Wisinger: That's a different take on cultural integration. Enjoying things together is such a human instinct and mode of connection.

O'Brien: It's not all about navigation. It's more about the environment. If I couldn't see the flowers around me, if I couldn't see the artwork on the walls, how would I be reacting to this experience?

A testimonial I love is from my friend Everett, who is a Cowboys fan, and he wants to go to the stadium. A lot of people are like, why would you care? This is so visual. Well, it is a visual experience, but there's multiple ways to experience.

Wisinger: The audio is half the atmosphere. I've never been to that stadium. I imagine it's much bigger than what we have in Little Rock, but I've been to a Traveler's game here in town, and hearing the announcers narrate the game, hearing the crack of the bats, all these little elements, the crunch of people eating popcorn, there are many things that are immersing you in the moment. So being able to comfortably move around that environment, you're still getting so much pleasure and enrichment just from being there and listening.

O'Brien: Well, it's like you said. It's being able to connect with other people and having that shared experience. And that's huge for sporting events or concerts. And so him saying that he just wants to get to a seat, go buy a hot dog, get back to a seat by himself. I'm like, there is so much that I have taken for granted. And he's

been saying this for years. He just wants to go buy a hot dog by himself. I'm like, AT&T Stadium, are you listening to this? This is your marketing opportunity.

Wisinger: My last question I had for you is more of a personal one. What brought you to this role?

O'Brien: I wish I had a better story. I really I do, but I don't. To be honest, I've worked on and off in the non-profit field and then in private marketing for years. And one of my first positions was within the deaf community and learning sign language to represent the deaf. This was in New York City, where they had one of the top five clusters of deaf populations in the country. For years, that was a huge focus of mine. And deafness and blindness are often put in the same box. They're not necessarily medically related, although you do have deaf-blind. But the general public doesn't understand the difference between a hearing impairment and a visual impairment. It's through that world that I fell into an opportunity to represent somebody new. Partly it's because I live in Utah, I'm in Southern Utah, and Utah is one of the other top five clusters of the deaf community in the US.

I was doing my research, and there's not a single other nonprofit that's dedicated to the blind in our state. There are a few others that are dedicated to disabilities in general. We have some that are again, the school for the deaf and blind, things like that, but there's nobody else who's just advocating for the blind. And it's a shame. I wanted to help. And that's really where it came from. I started learning more and more, and I've become really passionate just through personal research.

We all have different challenges and different strengths. I'm so grateful for what I've been able to learn and experience by surrounding myself with people who are different than I am. I know many people are not comfortable doing that, but until they are, nothing's going to change. It's really exposure that will change the world for the better.

I have a little boy. And when I learned about Hearsee I was like, that's what I, as a mother, want for my son. I want my son to see thousands of people served at one time. Because if I can facilitate a way for my son to develop respect and kindness toward people who are different, then I'll have done my job as a mom to make the world a better place for my child. So it's a little selfish in that way.

Wisinger: I wouldn't say so, but it is that intergenerational focus, focusing on leaving things better than you found it. That's awesome. Thank you Susannah.

O'Brien: Thank you so much for saying so. Well, this was great. Thank you. Bye. ■ ABILITY



Dr. SUNAURA Taylor

When considering environmental disasters like industrial pollution, it may be hard to fully understand the scope of impact such an event has. The interwoven relationships between earth, animal and human become undeniably clear when the results of environmental injury manifests in poisoned ground water, sick fauna and human disability. Could looking at the broad scope of human experience, perseverance and policy related to disability help reform our environmental initiatives?

Dr. Sunaura Taylor joined *ABILITY Magazine's* Chet Cooper and Jennifer Woodall in a remote interview to discuss the human-environment connection, the potential impact disability can have on environmental rehabilitation, how ableism impacts communities dealing with environmental disasters and the release of her new book *Disabled Ecologies*.

Jennifer Woodall: Hi, how are you doing?

Dr. Sunaura Taylor: I'm doing good! It's been one of those mornings whereby my dog didn't want to go for a walk because she knew that I was going to put cat food out and everything. My kiddo was late for school, but I'm good. [laughs]

Woodall: Yeah, of course. I totally understand. Where are you located? Are you still in Arizona?

Taylor: I'm in Berkeley, actually. I moved back to Berkeley in 2020. I really would have stayed in Arizona because I just loved it so much, but then I got my dream job so then, that took me out here.

Woodall: Assistant professor at Berkeley?

Taylor: Yeah, my partner and I had lived in Berkeley for a long time. I got my MFA out here, and we always wanted to come back. But then we lived in New York City, then Arizona, and we really fell in love with Arizona, and I thought that I was over Berkeley. Then it comes on in with this wild card, and I'm like, "oh!"

Woodall: Can you give me some history of your background and also your personal connection with Tucson?

Taylor: Absolutely. So I'm a painter, a writer, a professor at Berkeley in the Environmental Management Science Policy and Management department. I work in all sorts of different kinds of mediums, all sorts of different kinds of audiences. *Disabled Ecologies* is a book that I really always knew that I was going to create. I didn't know how I would create it or what it would end up being, and that's certainly in part because of the personal connection that I have to this story. The story I



tell of the pollution on the south side of Tucson caused by Hughes Aircraft is also the story that I was raised as being essentially the reason why I was born disabled. So, I always knew I wanted to return to this history to learn more about it—because we moved away when I was six—so I have this connection through my own story to the site. I will say that that’s actually not really what drove me to want to write about it.

What really drove me to want to write about it was that having this origin story of pollution—military pollution specifically—really shaped certain ideas for me about disability and also about nature. For example, I understood from a really early age that nature is not something apart from us. That human beings are nature, that injury to the environment injures human beings. I also understood that disability isn’t this individual, medical, isolated problem that it can emerge from social injustice, and essentially that disability is a political issue. I think those two kinds of ideas, these two concepts that would become really, really important to me grew out of this experience—my own origin story. That’s actually really what led me to want to write this book, is that those two things have become an obsession of mine. What is disability? What is nature? What do we mean by these concepts? How do we bring them together? So when I knew I wanted to write a book about that, I was like, well, it should certainly take place in Tucson, and it should be grounded in Tucson because that’s what

brought forth these ideas for me. It’s a circular way of thinking about it, but I didn’t go into this project thinking, “Oh, I want to write a memoir,” or “I want to write about my own personal narrative.” That’s part of this book, but that wasn’t what instigated the desire to write it.

Woodall: Yeah, so you moved back to Tucson in 2017, is that correct?

Taylor: Yeah.

Woodall: Were you moving there with this idea that you wanted to write this book on your way there, or was it something that once you got there and you looked around, you were like, this is something really important to talk about?

Taylor: Absolutely. Great question. So, I was a PhD student at NYU in the American Studies program, and I knew that I wanted to research and write something that was specifically bringing disability into the environmental conversation. I knew that I wanted it to, at least in some way, address defense industry contamination and pollution, and I also knew that I wanted it to address this paradox that I see within disability, of disability being caused by extreme violence at times—violence and exploitation of tragedy—but then disability also having this other set of meanings of: disability as identity, dis-

ability as community, and disability as an integral part of life that can generate its own values, of interdependence, of vulnerability. Those were the things that I wanted to write my dissertation about. I didn't want it to just be up high floating around in the theoretical realm. I really wanted it to be grounded in an actual story, an actual event, an actual space. As soon as I realized how important that element of it was, then it clicked and I was like, "well, I have to go. This has to be grounded in Tucson." So luckily, I was able to do that. I was done with all my coursework, done with my exams, and my partner and my daughter who was three at the time—almost three—he was super up for the adventure and applied to nursing school there, and we moved our family out there. So I moved there specifically knowing. I had a dissertation proposal all written and I was already writing this theoretical framework. So, I moved there explicitly to return to this to write the book.

Woodall: Great. You mentioned in your book, in the introduction, about your family moving there while your mom was still pregnant with you, and swimming in a pool, blowing bubbles in the water. Your mom told you later that the contaminated water is what contributed to you being born with a disability. At what point during your life, since this is such a from the beginning experience for you, did you make the connection between environment and disability?

Taylor: I don't actually remember a time when I didn't have that understanding. I think it probably came along with the moment of epiphany when you, as a kid with a disability, realize that you're different than your friends or your siblings. Because the story was so much a part of growing up, I don't remember a time when I didn't know that story. My parents are very politically engaged, very active. So they were like, "this was military pollution. These bad companies put contaminants in the water." So, I also grew up in a family that helped us all make sense of the world.

Woodall: In your book, you talk about how Indigenous, land-based, and poor people, as humans, understand how deeply intertwined we are with our environment, but that's not always the case for communities outside of those specific experiences. Can you expand on how the human-environment connection is so important, specifically in the space of disability?

Taylor: I think on some visceral level, I think on some common sense level, we all know that we are a part of the environments, that we are a part of nature, that what we breathe is part of us. But, I think we're surrounded by all of these regulations, all these laws, all these frameworks within in at least a US context and a Western context that really divide human beings from the environment. One of the things I look at in the book is just the way that public health and departments of health are separated from the EPA, from the environmental departments, and that wasn't always the case. Those

things used to be much more merged. When the EPA goes into clean a site, their idea of remediation will often end at the threshold of the human body, which makes it like the human isn't part of the cleanup process, of the remediation process. So even though on some level it's common sense to us that, yes, we are a part of nature, that our health is dependent on a healthy environment, we're also constantly put into this situation where that idea is separated—there's human health on one side and the environment on the other side.

I think disability is such a vitally important part of the conversation because injury is where we see those connections, where we can't not look at those connections. In Tucson, this pollution injured the aquifer, and it injured the wildlife that was drinking from the contamination, and it injured the human community, in terms of various cancers, and lupus, and other kinds of illnesses and diseases. Those paths of connection that are always there between humans and the environment are suddenly so evident when there's disability and illness involved. The other, maybe more of an optimistic or generative way of looking at the connection between disability and the environment is that through my decades of being involved in disability community and disability culture and activism, I also think that disability has something really important and valuable to offer. I think that we can take those insights and lessons to help us better understand the damage and impaired and disabled environments that we all live with now.

Woodall: So, just so I understand, we can take our experiences of what it's like to live with a disability and navigate these systems with a disability, and apply them to environmental rehabilitation?

Taylor: Yeah, and I don't exactly know what that will look like. I think that's part of a disability. When someone newly becomes disabled, it is a learning process. There is no clear roadmap for how to live with a disability. Every person is different, and that's going to be the same for our environments. I think that the simple, humble goal of this book is to just make the case that disability is already part of the environmental conversation because what we're living with is environmental injury. So we need to bring disability insights into these scientific realms of ecosystem health or whatever environmental arenas there are, and also environmental movements, so that we can even start figuring out what those next steps of care, and creating access, of creating networks of support would even look like.

Woodall: I love that goal, and I also think it's interesting. You touched briefly on the social model of disability and how it's so related to the built world, the built structures, and trying to apply that to the natural world. That's a connection that I haven't made before, but after reading it, it makes so much sense. I love that goal, the intention behind it.



Taylor: Well, it's interesting because there are these moments as a researcher where you get really excited. For me, some of those moments were reading these ecologists or people writing about environmental remediation and themselves literally making these metaphors that are like, "like someone who is paralyzed, a contaminated environment needs different kinds of supports than an able-bodied person would." And it's not just metaphors, these scientists are also working in these fields that are like soil health or forest health or river health. So, if health is this thing that we are trying to achieve for our environments, well, we have to ask, "what is health?" which is a question that the disability community is, of course, always asking, and we also have to ask, "well, what is there now if there's not health?" and for me, a language of disability and illness could be really helpful there.

Woodall: In your book, you talk about ableist ecologies. Can you expand on that term?

Taylor: One of the things that I'm trying to show is that disability is already everywhere within the environmental arena. Often it's invoked in a way where it's purely this thing that we are trying to avoid, that environmentalists are trying to avoid, that very easily veers into this

fear mongering tactic. Not only fear mongering around disability, but it can veer into fear mongering around gender—I'm thinking of the example written about contaminants that alter the sex outcomes of different amphibians. There's a way in which disability can become this fear mongering. It's what we're trying to avoid, whether we're trying to avoid disabled and ill communities because of environmental harm or disabled and ill environments. That in and of itself I don't think is a bad thing. I'm not promoting a world in which disablement is just celebrated, but what I'm thinking about with 'ableist ecologies' is the way in which disability is used as this fear mongering tactic or what we're trying to avoid, but it's not for the benefit of the disabled people or environments themselves. It's not to then say, "wow, let's figure out how we can make livable, accessible, thriving worlds for the disabled communities that are already here." Instead, what happens is most often it's, "how do we protect the rest of us? Those people, they've already been damaged. How do we protect the able-bodied environments or human beings that remain?" There's various different examples of this that I give. I named this 'ableist ecologies' because I wanted to help expose a way that disability and environment are brought together that I don't think is helpful and that I actually think is very dangerous. Because what happens

in this framework often is essentially a system of abandonment, where those who are injured are abandoned. We see this all the time in terms of communities that face environmental racism. We see this in climate negotiations for those communities that are the most vulnerable. We see this in this NIMBY attitude of ‘not in my backyard’, let’s put the contaminant somewhere else. That there’s an awareness that injury and disability happens, but let’s keep it over there. That there’s sacrifice zones. So ableist ecology becomes a way to name that so that we can figure out what a more liberatory way of bringing disability and environment together are or would be.

Woodall: The abandonment idea is actually what I was going to touch on next because it was so interesting to me that it’s often connected to colonial perceptions of ‘nature as commodity’, this expendable thing that when it’s gone, we’ll just dip out because we have enough money to do that type of situation. To the connection that you made between that and disparaged communities generally getting the short end of the stick when it comes to where they’re living being exploited, can you go into how you saw that happening when you were researching the history of what happened in Tucson?

Taylor: I can start by saying that a lot of the official documents and official history start in the 1940s, when certain aircraft companies and a lot of electronic manufacturers moved into Tucson. But, community members will often talk about this much longer history, this history of colonial dispossession of the land, of displacement of communities. They see this harming of the environment and the community, and then the negligence that followed, the abandonment that followed as just a continuation of this longer legacy. The contamination took place for about 30 years, from the ‘40s the ‘70s, and most intensely from the ‘50s through the ‘70s. There were lots of signs that it was happening, but city officials and others turned away from it. Then, when it finally became just undeniable that there was contamination in the groundwater, it was still hushed up. Wells were closed, but there was no effort by the city or by the EPA, by different departments to actually figure out who had drank that water until an investigative journalist collaborated with the community to do that work. Then in 1985, her series of articles came out, the community organized, and then what they faced was just intense accusations that, yes, maybe they were disproportionately experiencing illness and disability, but it was their own fault. It was because they were genetically disposed to illness or because of lifestyle and diet. All of these accusations that are, of course, profoundly racist, but that are also ableist. Even though there’s pollution, this is your fault because you’re predisposed to illness.

Woodall: Or you’re eating “chilis and beans.” That was quoted from what the company was saying, which is wild to me.

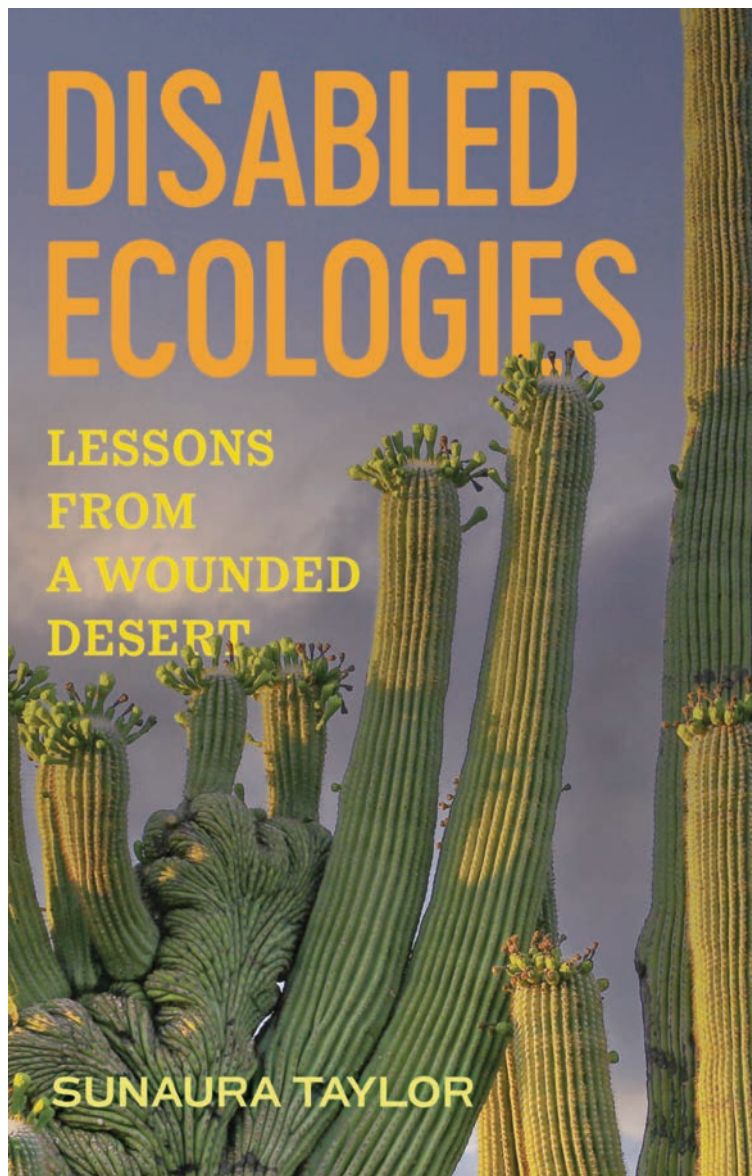
Taylor: It’s mind boggling, right? Here it’s known by city officials that this huge, huge, extremely powerful, Hughes Aircraft Company was dumping all this pollution that they were like, “No, it’s not that. It’s because you’ve got the beans and chilis.” Just so insulting. I think that you can see this repeated history of negligence, of abandonment, and of just of denial and refusal to listen to and take seriously people’s experiences and stories and their knowledge. When they were saying, “we know this pollution is coming into our neighborhoods,” even before it came into the groundwater, because it would go through the desert wash. Just total denial of what was happening.

Woodall: Time and time again, consistently, I see a pervasiveness of stigma against disability, sometimes even manifesting in internalized ableism. In your opinion, do you feel like the denial from these companies was rooted in disability stigma, or was it more like just not wanting to accept the responsibility of this contamination?

Taylor: I think it was rooted in wanting to protect their profits. That is rooted to a whole set of things that include ableism and include disability stigma, and also are just inseparable from the racism that was just embedded in all aspects of Tucson society and Tucson culture, and that we see again and again across the country. Your question really also makes me think, though, about one of the risks that I see, that I found, and that I really grappled with in writing this book, is that there is so much disability stigma, right? So I don’t want to add to that stigma by being like, “look, disability is suddenly akin to climate change, or akin to this polluted environment.” Because those things are so negative, and heavy, and scary in our minds. So, there is this risk there in making that connection. That is where the analysis of the ableist ecologies becomes so important. The reason why I felt like it was important to write this book despite that risk is because the intense and fascinating paradox to me about disability is that it can be caused by horrors.

It can be caused by extreme systemic violence and exploitation, and yet there’s also the undeniable—I quote an amazing disability activist, Harriet McBryde Johnson—the undeniable reality that disabled people can live great, thriving lives. That that is where I hear Disabled Ecologies, and I hear the potential for hope there. Far more than saying our ecosystems are dying or that there are these two paths that I think we imagine of going back to some pure state, where suddenly we’ve figured out how to live in harmony with nature, whatever that means, or the Apocalypse of the dead earth. Disability is something else to me that could hold some hopeful aspects. So I hope that when one reads the book, that it doesn’t create disability stigma, that it actually is not foreboding, but actually creates the possibility that people can think about disability otherwise, in other ways.

Woodall: Talking in a broader sense, there’s been stud-



ies that are talking about the increase in younger generations, specifically Gen Z, about depression as it's related to the looming climate crisis. What are your thoughts on this and how it ties into disabled ecology?

Taylor: Such a great question, and actually. Of course, this always happens when you finish a book, you're suddenly like, "oh, wait a minute, there's this whole other section I wanted to write!" So, I think that there is so much space for another scholar, or writer, or artist to come in and explore the relationship between *Disabled Ecologies* and the mental health realm. There's a really important study that actually just came out post-publication of my book from some great researchers in Tucson who are looking at statistically, the level of trauma that the South Side community has just from worrying about their water. Imagine every time you turn on your tap, you're like, "Is this water safe?" "This water might have led to my mom dying." "Can I drink this water?" That kind of trauma. What I love about that research is that it's not about proving a correlation between a contami-

nant and some disability. It's really just showing the harm that just living under this history leaves people with. I think that's what's happening to some extent, just on a large scale in terms of the climate grief that people are experiencing.

So, the question becomes like, "what are the lessons that we can learn from disability community, about how to utilize that grief in those conditions?" I think Greta Thunberg is such an amazing example of someone who also has really explicitly described, not in terms of depression, but just in terms of the own way in which their experiences and lived reality with autism impacts the way in which they have become this incredible climate organizer, because they have this other relationship to how they think about climate. I can't remember the exact quote, I don't want to paraphrase. But again, I think there's all this space for really learning from people who are in these communities for how they're thinking about these things.

Chet Cooper: Can we talk a little bit about your art? I really like some of the pieces that you've produced.

Taylor: Yeah. I'll just start by saying that I really see my research and writing and my art practice, my painting and drawing, as really all part of the same conversation. That's just how my brain works. I often will start these big research projects, actually, as drawings, as paintings, because that's an area where you can just make all these different connections, and you're not worried about what your citations are or about what your research backing is. I have this sense of freedom when I'm drawing, of bringing ideas together.

So, both these two books, my first book, *Beast of Burden: Animal and Disability Liberation*, and *Disabled Ecologies*, both actually emerged from drawing practices. *Disabled Ecologies* actually includes a drawing practice within it. I describe how one of the main characters in the book is the contaminated aquifer on the south side of Tucson, and my own trying to get to know an aquifer and actually just understand what even an aquifer is. So I started this drawing practice of essentially trying to sketch what my changing perception of an aquifer is, and I include this in the book. That that's an example of the dialog between writing and research and visual creation that my work often grows out of.

Cooper: I've done the same, but with stick figures.

Taylor: Yeah. Well, stick figures can be quite expressive, so as any comic book artist will tell you.

Cooper: Throughout your conversation, your books, your writing, you go back and forth with the word disability and disabled, whether it's within the environment

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or not, but the word keeps changing meaning. And meaning in the sense that if the environment, because of pollution, causes you to have a disability, that's negative—I would think anyone would think that's negative—yet there's this other side of the coin about disability pride. There's this controversy in my head, back and forth with the word disability. That's why everything we do is 'ability' related, because I think the idea would be everyone wants to focus on their own abilities and not focus per se on "If I acquire a disability, all of a sudden I'm happy and I'm proud I have a disability." I wonder what your thoughts on that.

Taylor: This conflict that you're describing, I think that that's what I have been in this interview describing as this paradox that I'm obsessed with. That this this word, this idea of disability holds both truths. I don't feel that we have to pick one as more true than the other. Disability can be a really devastating experience, and it can be also a source of pride, a source of community. It can be all the things that you were just describing. I think both can be true and also simultaneously. So, I'm very familiar with the controversy over whether you use the word disability or ability, and also whether to use a slash disability/ability. There's a lot of those kinds of conversations in academia. I think that they are both important words that have their place. I don't want a world where people only associate disability with negativity, or where we want to get rid of disability. I really do actually think that it's not just my abilities that I'm proud of or

that I want to expose. I also would say that I can't separate them. All of my abilities have emerged from the fact that I also have this extreme lack of ability that has forced me to explore the world in other ways. I would say that the disability/ability thing is so entangled that you can't really separate them. I also think the word 'ability' risks being associated with a certain bodily normativity, with a certain idea of how a body should move, how a body should look, how a body should be abled. I think that I can understand the perspective of wanting to center the incredible abilities that disabled community has and offers. I would just say that in my own nerdy way, I don't think those two things can be separated. I think our abilities come out of our disabilities.

I really appreciate you guys reaching out about doing this. This book is literally nine years in the making. It's as old as my kid. I started it when my daughter was just a tiny little baby, and I was doing my qualifying exam. So, it's so exciting to be actually able to talk about it.

Woodall: Thank you for talking with us today

Cooper: Have a good day.

Taylor: This was lovely. Thank you. ■ **ABILITY**

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Aurora, the City of Lights, Shines on Disability Inclusion — Katrina Boatright

About an hour outside of Chicago sits Illinois's second largest city, Aurora. With a name synonymous with the vibrant and colorful northern lights, Aurora's diverse city life is rich with tradition. Building off of the history of being the first city in the U.S. to use electric lights for the public, Aurora continues to illuminate cultural diversity and inclusion. Katrina Boatright, spearhead of Aurora's Senior and Disability Services Division, is passionate about bringing light in to her work, "We're known as the City of Light, which is something I really like to advocate for. I use it as the foundation of a lot of the work that I do, because I think we have great opportunity to bring light to so many things, opportunities, people, populations and work. I take that very seriously when I bring light to things." Katrina started the Senior and Disability Services Division when she came on to work for the city of Aurora. "I'm the manager of Senior and Disability Services Divisions. I've been able to build it from scratch. I've been able to give it meaning. I've been able to place the value around it and not just become an advocate for these spaces and for families and persons living with disabilities, but to really magnify their presence, their capacity, their contribution, and bring that to life for so many where there's that reciprocated benefit."

The Senior and Disability Services Division was created out of a recognized necessity to increase disability and senior support within the community. Building a new

program from the ground up takes extensive work and community outreach. "I went out and did listening sessions all over the city, and I invited families, caretakers, and persons with disabilities to come and share with me. I'm like, "Help me see and understand from your lens. I don't want to advocate for what I think should be. I want you to tell me what should be." Katrina said about the community outreach she undertook while building the program. "I availed myself to every possible conversation, those that wanted to share. I asked the question, "How do you feel living in our city with the abilities that you have and the support that you need for the city? What can I do? What can the city do? What do you want the mayor to know? What do you need put in place to continue to age well in our city and feel like you're independent and you're doing your best to be a strong contributor?" They gave me their ideas. They told me what they needed, and I took them back. Then I developed my three-year strategic plan based on all the information that I received." Part of that three-year plan was the creation of the Advisory Commission on Disabilities. Within the duties of the advisory commission, there is an effort to zero in on the individuals that are likely to fall through the cracks of established programs by increasing program awareness and outreach, making events more accessible and increasing available resources and access to information.



The aptly named Bright Light program, one of the initiatives that spawned from the Advisory Commission on Disability, allows members of the community to nominate someone they feel has made a positive impact on the city, whether it is giving back to the community or someone within the disability community overcoming adversity to achieve a goal. “We get to bring them before our council and recognize them and give them value that they are a contributing citizen, no matter what barriers they may have overcome or may be overcoming, and they love it. I highlighted a couple last month, and the young guy—the mother didn’t tell him he was being highlighted. A friend ended up telling him and he saw the articles posted, and he was like, “How can a mayor in a city so big know me? I’ve never felt more proud to be in my city.” And it becomes a bright light for those being honored. It helps other people see others as bright lights.”

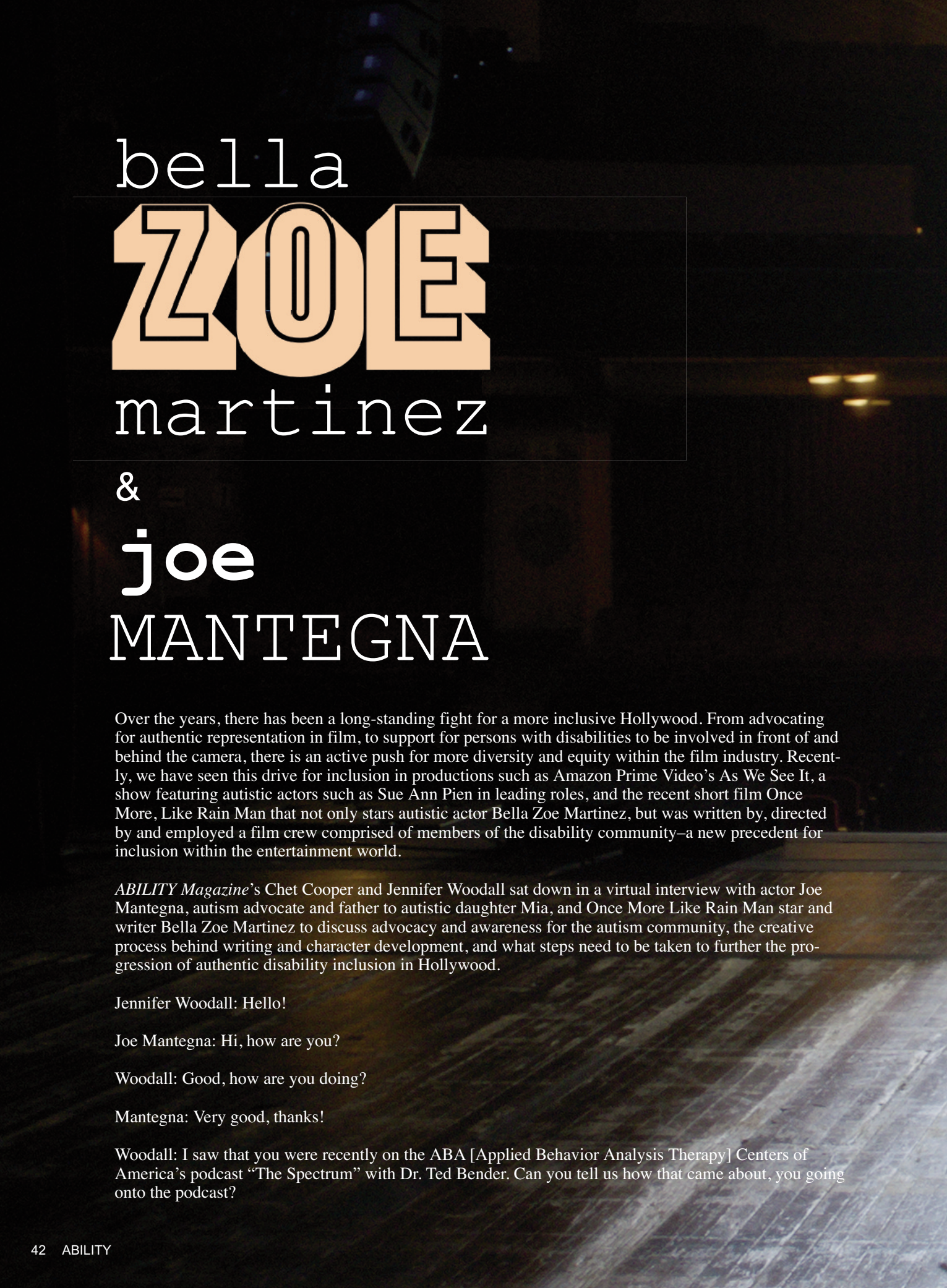
The vibrant art and theater presence in downtown Aurora and the numerous multicultural flag raisings and celebration ceremonies that take place within a year create a social atmosphere that requires accommodations for people with disabilities. The way Katrina strives to achieve inclusion in these various events is by hitting the streets and finding members of the community that may have experienced accessibility issues in the past while asking the questions like “What do you need?” “How can we make this more accessible?” This grassroots approach allows the members of the disability community to be heard and involved in accommodation improvements to events; an effective strategy utilized in various cities across the country. On the Senior and Disability Services website, Katrina uses the term ‘inclusive city’ to highlight this initiative. “I’m a believer in ‘we shape atmospheres, we shape cultures.’ How are we intentionally being inclusive? Every time we do something, are we looking at, “Is this presented for everyone to be included?” We’ll say yes, but is it set up to support our yes? That’s my goal. Inclusive means everything we do. We’re being intentionally mindful—intentionally supportive. I think accommodations are needed and they’re great, but that’s reactive. Accessibility is proactive, and I want us to move to being proactive. I want us to make sure everyone can be included”

Among the various events held within the Senior and Disability Services Division, there is the Disability Family Resource Fair which is an event held once a year where various resource organizations from around the city come together and build community connections with citizens that may not have known about their available support options. “It builds a connection. It builds a relationship. It builds a network. It gives them access. It allows the organizations to be able to follow up with them to make sure needs are being met.” Katrina remarks. “Nothing feels more vital to me than making sure this city operates as an “us” and a “we.” The more we build relationships, we have our networking amongst our partners, the better they work together, right? The more resources we have, the more we can serve effectively.” An integral part of community awareness is information and education. To bolster this, Aurora has educational training sessions that cover various topics such as mitigating social security and disability, navigating IEPs and potential stigmas related to that. Part of this educational outreach includes having an open conversation with the special needs education departments within the school systems to get a better understanding of learning atmospheres and opportunities for support.

If your own city does not have a disability-focused program started, and you want to see that change, Katrina has this advice: “It’s an opportunity for those that are around you. It’s always starting in your neighborhood, starting in your school, starting your program and then send that information to your city. Send it to your mayor, send it to anybody that’s in community service in your city and increase that value. Anytime you’re doing or involved in something, wherever you are, send that to them, let them see and put it in their face like, “Hey, we’re here, and we want to be here, and we want you to help us be here.” I think that advocating space is so vital. I tell them all the time, “I will echo your voice, but you got to give me your voice. I’ll illuminate it, but you got to give it to me.” I think that’s what it is. You have to create a space to echo their voice, to magnify, to make big what they are, who they are, and what they can offer. I think the most important thing is you’re creating a space. Once you start doing that, people will start getting it, they’ll start rallying around you, and you’ll find that advocating circle growing.” ■ **ABILITY**

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bella

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MANTEGNA

Over the years, there has been a long-standing fight for a more inclusive Hollywood. From advocating for authentic representation in film, to support for persons with disabilities to be involved in front of and behind the camera, there is an active push for more diversity and equity within the film industry. Recently, we have seen this drive for inclusion in productions such as Amazon Prime Video's *As We See It*, a show featuring autistic actors such as Sue Ann Pien in leading roles, and the recent short film *Once More, Like Rain Man* that not only stars autistic actor Bella Zoe Martinez, but was written by, directed by and employed a film crew comprised of members of the disability community—a new precedent for inclusion within the entertainment world.

ABILITY Magazine's Chet Cooper and Jennifer Woodall sat down in a virtual interview with actor Joe Mantegna, autism advocate and father to autistic daughter Mia, and *Once More Like Rain Man* star and writer Bella Zoe Martinez to discuss advocacy and awareness for the autism community, the creative process behind writing and character development, and what steps need to be taken to further the progression of authentic disability inclusion in Hollywood.

Jennifer Woodall: Hello!

Joe Mantegna: Hi, how are you?

Woodall: Good, how are you doing?

Mantegna: Very good, thanks!

Woodall: I saw that you were recently on the ABA [Applied Behavior Analysis Therapy] Centers of America's podcast "The Spectrum" with Dr. Ted Bender. Can you tell us how that came about, you going onto the podcast?





Sue Ann Pien, Glory Simon and Joe Mantegna on the set of "Once More, Like Rain Man"

Mantegna: I do these things, I base it on basically what they're about, and if I feel there will be some benefit to it. Being a parent of a special needs child, those kinds of things, I feel, if somebody can benefit from it, why wouldn't I do it? That's all. But to be specific, I couldn't pull that one out of my head as to when and where and how I did that one.

Woodall: That's totally understandable. On the podcast, you were talking about your daughter's early education. One of the things that you mentioned was how there was an undercurrent of inclusion in her early education that you felt was very beneficial to her.

Mantegna: Right.

Woodall: Can you talk more about that?

Mantegna: I would say this: when we were put on that path, the path of being parents of a child who obviously is on a spectrum and has personal needs, this was all new to us. This was not something we could relate to. We couldn't point to other members of my family to be able to say, "This is the process, this is what you do." We did all the things that seemed the obvious things to do. In other words, when she was of school age, we enrolled her in a preschool at four years old that had a special needs class for kids with different kinds of—whether they want to call them "disabilities" or "other abilities." You do that and you say, "OK, all right, this seems like a safe, encouraging educational fun environment for her."

Once she got into kindergarten and first grade, you do all the things you do in this country. We got an IEP, you go through all the steps so your child is able to get these

kinds of therapies. These things are provided for her, or him, as it may be. But what we found out was, because of the nature of my work, I've had extensive travel in my life, all over the world, it was important to me that we all would do this together. My feeling was, "Hey, if the kid misses a certain amount of school, it's okay, because we're all going to experience this together." But by doing that, it exposed us to other forms of kinds of education per se. In one specific instance that had a huge impact on us, I was doing a movie in Chicago, and my daughter Mia was about six years old then. We'd go to Chicago, thinking maybe we could find a school that we can put her in for the one semester that we'd probably be there. There was a small, little private school in the neighborhood where we would be living, the Catherine Cook School.

We explained this to the principal. "We have a daughter, she's on the autism spectrum, she's six years old. By any chance, rather than trying to go into the whole public school system, especially for this short period of time, maybe you have something that is apropos." She said, "No, we don't have a special needs or special class for kids with special needs, but let me turn you on to this one teacher who teaches one of the first grade classes." Her name is Karen Pfendler. That began an odyssey that exists today, and we're talking something like almost 30 years later that we got close to this woman.

We went to this class, we took our daughter by the hand, we go into this first grade class, and there was Karen Pfendler, this teacher. We explained to her, "This is our daughter Mia," we explained briefly what the situation was and that the principal suggested that we talk to her. She took Mia by the hand and walked her to the front of

the class and she said, “Kids, this is Mia. She has a thing called autism. She may do things like laugh or talk to herself or walk up to the blackboard. We’re going to help her with this.” We had never seen anything like it. This was inclusion in its purest form. Here was a first grade teacher who had a brother who was on the spectrum. She got it. She felt like, “No, no, don’t worry about it. Mia will be fine in this class.” It was just a regular first grade class.

She was there that whole semester. By the time we got back to California after that experience, we realized that we couldn’t accept anything less than that. It won’t always be perfect or exactly the same, but we realized that we can do something better than to put her into one class where all the kids have some kind of issues. It’s not the best situation. You’ve just got mimicking each others’ disabilities. We learned that these kids profited as much by Mia’s involvement with them as she did by her involvement with them, in the sense that they understood that not everybody’s the same. There will be children who are a little bit different and who need support and help.

And this continued on throughout. Every once in a while, we’d have to pull her out and put her into a special ed class, and that was okay, but for the most part we really tried to work on inclusion. Some classes, some teachers had never experienced it before but they were game, they were willing to do it. And once they did it, they said, “Oh, yeah, this was great for them!” It was quite an experience, that whole educational thing, right up until she took classes in junior college as well. That’s a long answer to your inquiry, but it’s the root of our school experience with her. It also made me realize that in other countries, in Canada, they tend to lean more towards that. They don’t normally have special ed classes. They say, “What does your child need to function in this class?” Which is just the regular class. “If she has autism, we’ll provide whatever, if you need an aide or this or that. If she’s blind, does she need this? If they’re crippled, do they need this?” But they’ll still be in that environment with everybody else. To me, that’s key.

Woodall: For sure. My cousin who lives with me in on the spectrum. She’s still in high school. I’ve seen firsthand—she has an IEP and everything—how many difficulties she’s experienced navigating the public school system in my area. Do you have any advice to other parents or other family members about how they can approach their school system to advocate for more inclusive class structure?

Mantegna: You’ve got to be proactive. Having the IEP is a good thing, not a bad thing. It gives you the freedom—it opens the playing field. At least in California, you’re not restricted to going to the school where you live. By having that IEP, you can check out other schools, and if you feel that there’s some place else

that’s out of your district that’s a better fit for your child, you have the ability to do that. But then I think you have to have skin in the game. You have to be involved, proactive, go there and talk to the principal, to the teachers themselves. We would always do that first without our daughter, just to engage them with our feelings about where we were at, and if they said, “Let’s check this out, see where we’re going,” then we’d bring Mia in.

The other thing we’d do is, we’d talk to the class first. Let’s say we have a situation where we’re at a school and the school agrees, “Yes, this sounds interesting. We’ve never done this before in this class, but the teacher’s game. Let’s give it a shot.” My wife and I would go and speak to the kids themselves, whatever grade it was, and we’d explain. We’d say, “We don’t want to just spring this on you. We’ll show up with our daughter Mia later today or tomorrow.” Just as Karen Pfendler did on that day when she was in first grade. “She might do this or that, but she can sure use your help and guidance and support,” and the kids embraced that. They gravitate toward that, especially when it’s a girl. Sometimes there are issues with boys and it’s a little different. Boys will be boys, and they can be tough on somebody who’s a little bit different, but for the most part, our experience doing that was just great. And because of it, Mia made lifelong friends. To this day she sends birthday cards to these friends she made 25 years ago.

Woodall: That’s wonderful!

Mantegna: That’s something we did and something I would encourage other parents to do. You can’t just say, “She can go to this school and they have a special ed class? Great. I’ll just drop her off and pick her up at 3 o’clock.” No. You’ve got to be willing to put in the time.

Woodall: That definitely makes sense. It’s incredible what a huge impact inclusive environments like that can have in such a positive way.

Mantegna: Oh, yeah.

Woodall: Switching gears, in 2022 you played Lou Hoffman, Jack Hoffman’s father, on the show *As We See It*. Can you talk about that experience and how you got involved in that?

Mantegna: It was a wonderful, wonderful experience. What had happened was, my show *Criminal Minds* had ended at that point, we thought forever, but that’s not the case, as you may know. So here I was fancy-free again to do something else, and my agent sent me the script. I read it, and it knocked me out. When I read that first pilot script, I went, “Wow, we live this life. I get this. I know what this is,” and Jason Katims, who created it, has a son on the spectrum. He’s a brilliant writer.



He created *Friday Night Lights* and some other very popular shows.

When I read the script, I was so taken by it, I went, “Wow, this is something. The lead characters will actually be on the spectrum. They’re talking about bringing people on the spectrum in as crew members,” which was unheard of out here in Hollywood. You’ve got to get the cooperation of the unions and all that. The one thing my agent told me was that they would shoot the series in Chicago. I’m from Chicago, but I really had no desire to go back and do a TV series, so I told the agent, “I like the script so much, would you please tell them I’d like to meet with Jason Katims anyway? I just want to tell them what I feel.” So, they arranged it, and I met with him and _____ the rest of the staff, the producers, whoever was with the show. This was Amazon Network. I walked in and said, “Here’s the deal. I read the script. I love the script. I would love to play this part. I’m not going to Chicago. If that’s what it means, I’ll have to take a pass, but God blesses you all. I just wanted you to know I wanted to meet you because as an actor, writing is everything. If it ain’t on the page is ain’t on the stage, is my motto.” I wanted to let him know that being a parent as well of a child on the spectrum how much I appreciated what he had done and wish them well.

About a week later I get a call saying that they were taken enough—I’m not saying that was the only reason, bottom line, I think Jason would have preferred to shoot it in north California, because it was going to disrupt his life as well. He lives here and his son lives here. Between the two of us, we had enough juice to where Amazon said, “Oh, all right, we’ll let you shoot it in California.” I told him, “If you move it to California,

I’m in.” Two weeks later when I got the call, they said, “We were able to move it. Are you in?” I said, “I told you I was in. I’m in.” And we did those 10 episodes. I loved every one of them. I loved what it was about. I haven’t felt that way since I did the series *Joan of Arcadia*, which I had similar feelings about, that it was a show about something, a show that moved the needle forward that was positive, that wasn’t just—there’s nothing wrong with frivolous entertainment, whatever it may be. Or in terms of *Criminal Minds*, somewhat educational and frightening entertainment.

Woodall: (laughs)

Mantegna: Everything has its benefits, but this show I thought was important that we do it. I was able to bring two children, two sons of friends of mine who are on the autism spectrum to work on the school.

Woodall: Oh, that’s cool!

Mantegna: Couldn’t have been better. My only regret is we only did one season, 10 episodes, and we were out. Unfortunately, that’s the nature of the business end of it. It rears its head. But I’m so glad I did it. I made lifelong friends through that. I hope there’s something else out there like that on the horizon, I hope that that allowed other things like it to ultimately get done.

Woodall: I know that seeing that representation as someone on the spectrum in different situations, someone having other disabilities, seeing that representation on the screen can be so impactful and important. You can feel seen. So it’s really cool, stuff like that getting the green light and getting put on large platforms like Amazon, that’s great.

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Sue Ann Pien & Bella Zoe Martinez in "Once More, Like Rain Man"

and I think the license plates were one. I have a Fat Tony bowling ball, I have a Fat Tony watch, there's all kinds of stuff out there. It's my longest-running character, 32 years now.

Woodall: You're one of only three voice actors who have appeared as yourself and your character on *The Simpsons* at the same time. That's pretty cool!

Mantegna: Yeah, I've heard that. In fact, I have an animated cell, there's me as me, as a little figure, my hair was black then, so that little me is Joe Mantegna, and then of course me is Fat Tony. That's pretty good.

Cooper: abilityE, I don't think we had created this when we last talked. This is a talent resource for people with disabilities. It relates to both in front of and behind the camera. If you ever do any feature or tell anyone you know who's looking for disabled actors in front of the camera or behind the camera, whether it's voiceover, acting, etc.

Mantegna: Oh, sure! My daughter Mia was involved with me on *As We See It*, because she went to makeup school. For a while there she did a thing with Joey Travolta's group where she would do the makeup for their productions.

Cooper: Oh, nice!

Woodall: Mia's Makeup Corner?

Mantegna: Exactly right. There have been elements of that. But yeah, that's great.

Cooper: Netflix came to us looking for some help in casting someone. They were looking to cast for the role of a wheel chair user, and they could only find a handful

of people to audition. We put the word out through the magazine, through our employment program, and we sent them hundreds of auditions. This young girl got the part because of us. That caused us to say that we needed to make this permanent.

(Bella joins the call)

Cooper: Hello, Bella!

Bella Zoe Martinez: Hi! Hello!

Mantegna: Hi, Bella!

Martinez: Hi!

Woodall: How are you today, Bella?

Martinez: I'm doing great, thanks for asking!

Woodall: Of course. Thanks for taking the time to talk with us today.

Martinez: No problem! Great to be here!

Woodall: We'll ask some questions to both of you about *Once More, Like Rain Man*. We'll start with Bella. Tell me about your role in that.

Martinez: Sure. I play an autistic actress named Zoe. You follow her throughout the day, this long day of audition after audition. You see what it can be like behind the scenes. It's a little dramatized, but that's what it is. It's also showing how the stereotype can be sometimes. Sometimes the stereotype is a little misinformed. I'm not sure of another word, I'm just happy to be here.

Woodall: That's great, thank you for that. How about you, Joe? Can you tell me more about your role?

Mantegna: That's difficult for me. I came in and out on one day. I remember enjoying the experience. Was I a parent? This is what I do every day all my life for the last 50 years, memorizing a thing, doing a role, moving on. It's a unique when it's an experience that only takes that one day. I was so taken by Bella, by the whole experience, by Sue Ann, the director. It was a wonderful experience. I remember thinking it was great. It was so comfortable. But for the life of me, I'd have to go back and say, "Oh, yeah, this is what the material was." Do you know what I'm saying?

Woodall: Yeah, absolutely.

Mantegna: But I know the genre of what we were doing and what it was about. But I can't recall specifically what it was, because it took me a couple hours to do it and next thing I know I was back in the pretend FBI for the last year or so. It was great, an offshoot of—and

again, had *As We See It* not have happened, this would not have happened for me, because of the relationship with Sue Ann and to work with Bella and everybody. It was really, really great.

Cooper: Bella, do you remember the scene?

Mantegna: Do you remember, Bella, what the scene was?

Martinez: I scared you. It was the fake scene at the beginning of the film.

Mantegna: Oh, right, yes!

Martinez: I got slapped, I remember that. (laughs)

Mantegna: I remember it was really well-written and well done. I was excited to be able to be part of it.

Woodall: Bella, can you tell me about how with this role you're trying to break common stereotypes for autism and how they're portrayed in Hollywood?

Martinez: It's kind of the reason we named the film *Once More, Like Rain Man*, because Rain Man was the starting point of—it was the first time anyone had ever really seen an autistic person on-screen and portrayed. It got other autistic kids the help they needed, because they weren't seen as retarded, but like they could be so much more. I had never really seen myself in media. It was always an obstacle or another character's growth. I'd never really seen an autistic person who was also an artist. I am an artist. I love to draw, to sing, to do a lot of things. I never really saw that. The autistic person was always good with, like, computers or tech. That's a start, but it felt like it was kind of bundling a lot of neurodiverse people into a box. A lot of autistic people, it's a spectrum. We have a different array of hyper fixations we can be fixated on 24/7. Even at the weirdest of times, like 3 a.m. or something. (laughs)

Mantegna: I can relate. You're absolutely right. They can have a myriad of talents and contributions, never knowing when one will take the lead over something else. It's great.

Woodall: My cousin is on the spectrum and she's an artist. She does digital art mostly on her tablet and a lot of anime drawings. She could draw for hours and hours and hours and hours and be so happy. Her art's amazing. It is awesome to see a push towards showing people on the spectrum as an array of people and not just one specific thing. It's really awesome to see something like that come about. It's really cool.

Martinez: I drew one of the pictures. There's a scene where Zoe's in the casting office and she sits down to draw. During those takes, I was actually drawing a picture live. That picture is completely original to the film.

I still have it.

Mantegna: Great!

Woodall: Bella, about your inspiration for how you acted out your character in *Once More, Like Rain Man*. In the behind the scenes video, you said you pulled in inspiration from your siblings as well. Can you talk about that?

Martinez: My siblings are both autistic. In the autism spectrum they wouldn't be as high-functioning as me, but they're both autistic and so am I. Alex can be not subtle at all, but Kennedy is very stubborn, can be a little bit rigid. She takes everything literally. Alex takes nothing seriously. (laughter) I know he also makes stuff look ridiculously easy. He made a thing in ice skating look easy, and when somebody else tried to do it, it didn't end well. (laughs) He almost slipped on the ice or something. But that's how my brother always was. He learned comedy from vaudeville and the two old guys from "The Muppet Show."

Woodall: Oh, yeah, they're classics!

Martinez: He thinks if it's funny once, it's funny a thousand times, but not in a row! (laughs) Alex and I try to outwit each other with puns.

Woodall: That's awesome! I love that! Can you talk about why you decided to include inspiration from them in your character as well? What was the motive behind that?

Martinez: I think making Zoe a blend of not only me but my brother and sister felt not only a character who is like me and is similar to me, but is also similar to my siblings out there. There's not a lot of characters who act like them, either. My brother is literally a living cartoon. He does a really good impression of Jim Carey's *The Mask*. He loves doing character voices. My siblings both did the animation for the end credits. I've never really seen either of them portrayed in media either. My sister sings opera. She loves opera. She actually met David Hasselhoff. She only knew him from the *Jekyll & Hyde* musical. She didn't know him from the talking car. She knew him as an opera star. He spent his lunch with her. He told his parents and his girlfriend at the time that the one person who knew him as an opera star was my sister. (laughs)

Woodall: That's awesome! I love that. I was interested in hearing about the inspiration from your siblings and also the representation that you're trying to show by including little bits of them as well. Thank you for sharing that with me.

Martinez: You're welcome! It was wonderful to share!

Woodall: You also are a writer on *Once Again, Like*



Sue Ann Pien & Joe Mantegna

Rain Man as well?

Martinez: I wrote the script.

Mantegna: You wrote the script as well, that's great. How did you get into writing?

Martinez: I love writing a lot of stuff. I loved seeing stories when I was younger, and I loved playing video games, watching a lot of shows in different mediums. I didn't read as much as I drew, because sometimes my eyes loved to just skip lines of dialogue for no reason. But when I could listen to a story instead of reading it, everything felt like it came alive. I love the process of creating my own characters, creating my own world. I did that with my friends. That's kind of how I got into writing. It was also coping for being bullied.

Woodall: My cousin really likes D&D, Dungeons & Dragons, the same way she likes writing as well. It helps her be creative. That's really cool, to have that expression.

Martinez: I have not played D&D myself, but I do want to learn. It looks really fun.

Woodall: It is. It's a lot of fun! You wrote the song "Distant Goodbyes" for the film as well?

Martinez: I did. It took a lot of love and dedication. That was my first-ever song that I've written. "Distant Goodbyes" is based off of a character story that I wrote named "Bella Days," unironically. She is also a parallel to Zoe's story in this case, and she's also the character that I drew for the scene where Zoe almost melts down. It fits nicely into a neat little bow.

Woodall: For sure. The song is beautiful. It has a haunting waltz melody that I really like about it. It's really beautiful. Since it is your first song, can you tell me about your songwriting process?

Martinez: When I was writing "Distant Goodbyes," I was listening to a lot of songs. I remember writing stuff down. I remember, like, in sixth grade, I'd always try to figure out how songwriters wrote songs because I could never figure it out until eighth grade. I think I was playing Doki Doki Literature Club! or something, unironically it's a horror game. (laughs) I was like, "Wait a minute! Lyrics are just as poetry!" In the game, it's like a poem mini-game, and I was like, "Oh, my God, it's just poetry!" (laughs) That's when it clicked. I always found it quite funny, how it clicked in my head how songs are written, not melodies, but lyrics are just poetry.

And the melody was in my head. I listened to a lot of video game-themed songs. It's not a typical song. I love video game theme songs, anime, and just indie games and media. That was a lot of my inspiration. I remember coming up with the melody and it stuck. The early lyrics I came up with were a little more choppy, but hey, it was my first attempt!

Woodall: It's an amazing first song!

Martinez: Everyone's first attempt at writing lyrics can be a little rough, but the finalized version was the one where I sat down and rewrote it with my mom to get everything out. I told her Bella's story and everything just kind of flowed naturally after that. It's definitely one of my favorite things I've ever written. I loved doing the word play in very clever ways, telling her story without giving too much away, but making it in a way that's both beautiful and relatable to people who have probably been bullied and don't want that for people they also care about.

Woodall: Can you go a little bit more in—if you're comfortable—to talk a little bit more about your experiences with bullying?

Martinez: Of course. I was bullied in sixth grade. I was around 10, 11 and it was at a school called Walter Reed, I remember that school. Not exactly the nicest place, kind of dirty sometimes. Sometimes I'd find really gross stuff on the ground. I didn't want to question what it was, but it wasn't like how you'd see in media, in the movies, where a big kid is pushing you against the locker. It was more emotional and psychological torment, like making me believe stuff that I normally wouldn't or abusing my generosity. One time I gave some money to someone I thought was a friend, and they kept taking it and taking it. I'll use names, her name was Faith T*****, the one I remember, and the other one who made me believe stuff was Peyton W****. They weren't exactly nice people. I know hurt people hurt

people, but I don't know what made them hurt.

Woodall: When you say you started writing partly as a way to cope with the bullying, how would you—do you have any recommendations or words for somebody else who might be experiencing like in your situation bullying as well, how to deal with that.

Martinez: I do. For those who are being picked on and who have no one and they feel like they're alone, they're not. You have people who care about you. You have people who do love you and look out for you, and even if you can't see that right now, if you have friends who care about you, that's your light. If you have a world you want to build and then make that your safe space, you can do that. Just hang on a little bit longer until you can find the courage to tell somebody. I wrote down stuff to keep myself sane. I drew Bella and her stories and adventures. I remember being inspired by magical girls, because they were magical and they kept my hopes up. I remember wanting to go into a fantasy world because it was better than the reality at that time. If I can create something that helps those who are facing a certain trauma, it'll be worth it. They'll be able to not feel as miserable. If I can make somebody smile that way.

Mantegna: You make me smile!

Martinez: (laughs)

Woodall: That's wonderful. I have a question for both of you. We'll start with Bella. What changes do you think could be made within the entertainment industry to make it a more inclusive space?

Martinez: I think a big change is for people on the spectrum to be the storytellers. Also, for actors who are neurodiverse, they can act like anything. You don't have to put them in a box. They can be the mean girl, the villain, whatever. They're acting as somebody else. Even in voiceover, they don't have to just be one thing. They can be a whole array of things. [in a different voice] I mean, I can make my voice sound like a little kid, [deeper voice change] or I can sound like the evil bitch.

Woodall: (laughs) Mm-hmm!

Mantegna: (laughs)

Martinez: [in another voice] I can sound all kinds of wacky, you know what I'm sayin'? (laughs)

Woodall: How about you, Joe? What are some changes that could be made in the industry?

Mantegna: I think what Bella said is right on the nose, right on the button. Things happen that help move the needle in that direction. As We See It did that. Sue Ann's film with Bella hopefully will do that. There was a time when it was not even on the radar, but now I

think it is, more and more. You have to help keep that forward motion going. People like Jason Katims have done the work and gotten it out there, who have the ability and the position to make a difference. And the networks, people paying the bills, if they can be more inclusive and understand that maybe it costs a bit more money to do this, to make concessions so we can incorporate people who might need more help than the average person. That's all you can do, but it's certainly better than it was.

Martinez: I would like to mention that half the cast and crew were neurodiverse, both on and behind the camera.

Mantegna: That's great. That's as it should be.

Martinez: I remember my mom told me the first time I sang "Distant Goodbyes" onstage everyone was crying because of how beautiful it is and how they related to what I was saying and what I was singing. It didn't really cost anything. Everyone was—it was just there. The accommodation, it was just probably the most welcoming set I've ever been on. It was the most fun I'd ever had, working on that.

Woodall: Bella, I just wanted to mention that part of *ABILITY Magazine*, we have this thing called abilityE, which is ability Entertainment. It's an online talent resource for people who identify as having a disability within the entertainment community. It allows them to be in contact with industry professionals, people who are looking to cast people who may be neurodivergent, things like that. That's something we would love for you to take a look at and check out. It would be a good resource for you to find future castings and things like that.

Martinez: Thank you so much!

Cooper: Hi, Bella. I'm behind the scenes. I just shared my screen with Zoom. This is the magazine, if you're not familiar with *ABILITY Magazine*. This is where the article will eventually show up that you'll be in now.

Martinez: (laughs) That's crazy!

Cooper: We interviewed Joe a few years ago. Let's go back to the home page. This is abilityE, part of our nonprofit. It's a database and a talent source for performers with disabilities in front and behind the camera. It's free for everyone. You could put your profile online for free, you could tap into both in the sense that you could find talent and you are talent. You're wearing multiple hats. You could also create what we call an abilityE Challenge. People will post their challenge. I'll play one now.

[sound from the video] "Lynn Julian, non-union. I'm an injured survivor of the Boston Marathon bombing living with brain, neck, and back injuries, hearing loss, PTSD,



Bella Zoe Martinez & Matt Jones

and nine rare diseases and conditions. I'm a committed character actress, easily learning accents, mimicking body language, and taking direction well to give you fresh reads. My strength lies in playing believable villains with cutthroat comic sarcasm. Find me on abilityE."

Cooper: The idea I was trying to share was, abilityE.com, either one, is a great resource for full inclusion for performers with disabilities in the entertainment industry.

Martinez: That's wonderful!

Cooper: Hopefully you can take advantage of that and share it whoever you may run into in the future. Where are you right now? In school?

Martinez: I do online college classes. It's not a whole lot, just a couple. I'm based on Los Angeles, California.

Cooper: What's your schooling? Are you taking classes related to entertainment?

Martinez: I do take classes related to some things I want to learn, like social media marketing or Spanish. I also take a game theory class. (laughs) Because I love video games. And narrative. And music theory, because I want to learn more music theory so it's a little easier to write more music! It's with the University of Edinburgh, I think.

Woodall: That's in Scotland?

Martinez: Yeah, because it's online.

Cooper: Have you taken singing lessons? How did you feel comfortable singing?

Martinez: I took some vocal coach sessions with a tutor, but mainly before that I was learning how to sing with music and songs I really like. I performed in two talent shows, well, three. One was an open house and the other two were for my school, both with my interests in mind, with just nerdy nerd-core video game-themed songs, because I love video games. I did a quick change onstage with the second song, the second year I performed in that talent show, with the song "Doki Doki Forever," and I was doing, like, four characters. It's hard to say. At that time, it was kind of tricky to sing in different voices, because you had to make each one sound distinct, but it was really fun. The first time I had ever done something like that, and I had a lot of fun doing it, too.

Cooper: Do you get nervous singing in front of a crowd?

Martinez: Not really. (laughs) I don't have stage fright. I remember asking what it was. "Stage fright? What's that?"

Cooper: (laughs) If we were to say to you right now, "Can you sing us part of that song you wrote?"

Martinez: Of course, I'd love to. [sings excerpt from "Distant Goodbyes"]

Cooper: Wow. Very, very nice.

Martinez: Thank you so much.

Cooper: Thank you, Bella. It was great meeting you and learning about your talent. Hopefully your siblings can get into the industry as well. And get your siblings to put their profiles on abilityE. We have a lot of people who are doing voiceover who have put their profiles up.

Martinez: That would be amazing

Woodall: Thank you so much for your time today, Joe and Bella.

Mantegna: My pleasure. Great spending time with both of you. See you Bella hopefully at some sort of premiere or something. I'm sure we'll be crossing paths before not too long. Thanks, Jenny, thanks Chet.

Martinez: Bye! Bye Joe! ■ ABILITY

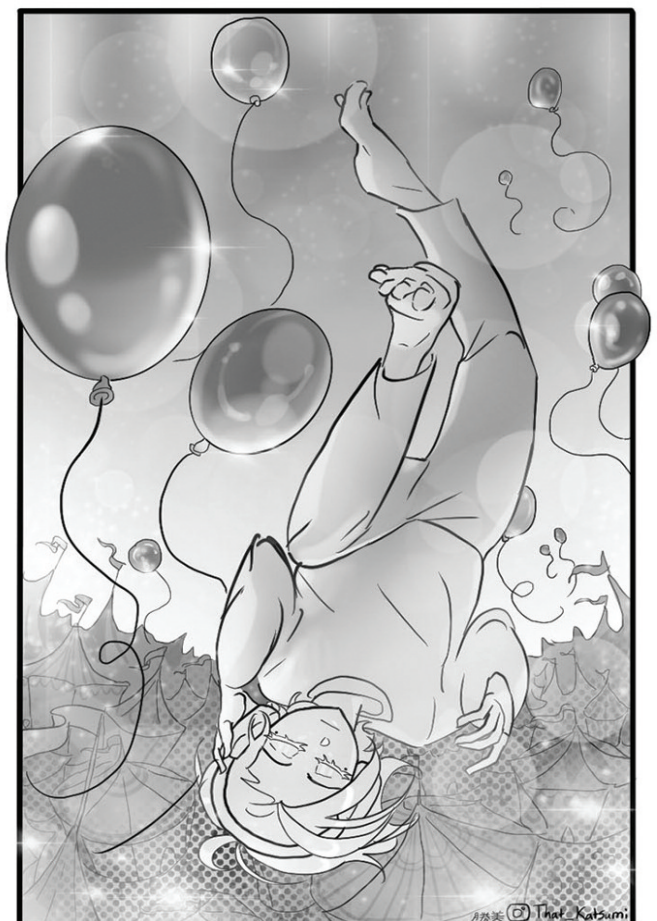
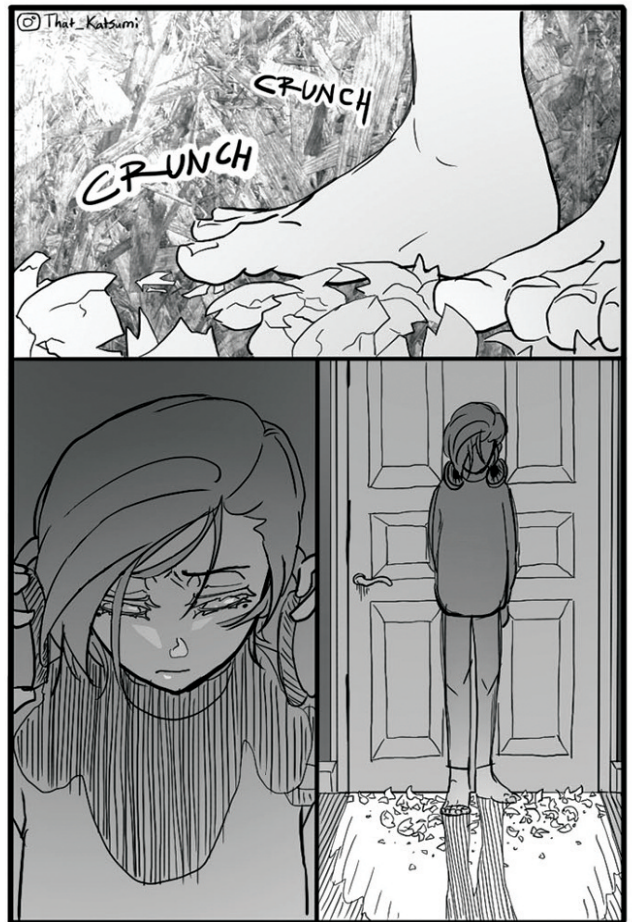
filmfreeway.com/OnceMoreLikeRainMan

Autistic artist Katsumi Fukuda expressing the importance of music:

This is a manga sheet I made depicting how most autistic people (I personally have known) tend to gravitate towards music being very emotionally stabilizing in their lives, myself included.

Like taking you away from reality helps me somehow be grounded in reality, in a complicated way.

I just love music.





The end of a life is, often, an impossible time. Grief can feel as though an intricate, musical movement has stopped before its final song. Anyone would feel fragmented while waiting for the closure. Emily Cavanagh, a songwriter with a love of helping people, has found a meaningful way to offer solace through the experience.

A Song for You is a non-profit, born out of the pandemic, and continuing beyond. The purpose is to create individualized songs for hospice patients that tell their stories and remain as powerful, lasting mementos for their families. While it is now comprised of many professional musicians and volunteers, the work began with Emily and her compassion for those dealing with the coronavirus alone in hospital rooms.

“I wanted to find a way to send a little bit of peace or joy or comfort to those people in such a crazy time. What started as just a single call asking, ‘Do you need a song?’ or ‘Can we send a song?’, grew into a larger concept of ‘Can we tell the stories, through songs, of the people that are in these rooms without their families?’ I couldn’t imagine what that would feel like, as someone who’s so close to her family, to not be able to be with mine. What would I want someone to do for me in a time like that? That was my answer to it.”

She started with a cover of The Beatles’ song ‘I Want To Hold Your Hand’. Chosen for its relevance to the pandemic and symbolic of the desire to connect through the loneliness- that cover was the first step toward the eventual influx of interest in the work. As requests accumulated, it became more apparent that the initial intention, to write original songs of the patients’ stories, would become deeply appreciated.

A moving example included a woman, in hospice, who wanted to marry her partner before she died. The song was written as a tribute to her love story and was adored

so sincerely by the couple that they danced to it at their wedding under an oak tree in California.

“There’ve been a lot of sad stories that we’ve had to all go through but that was a powerful example of love to transcend something.” Emily expressed that writing the music, though at times an emotional process, has been empowering:

“The fact there was a need for something like this kept a lot of us going because it was a way we could be trying to do something even though it was something small.”

It has even been a way for her and the A Song for You team to show their own appreciation too.

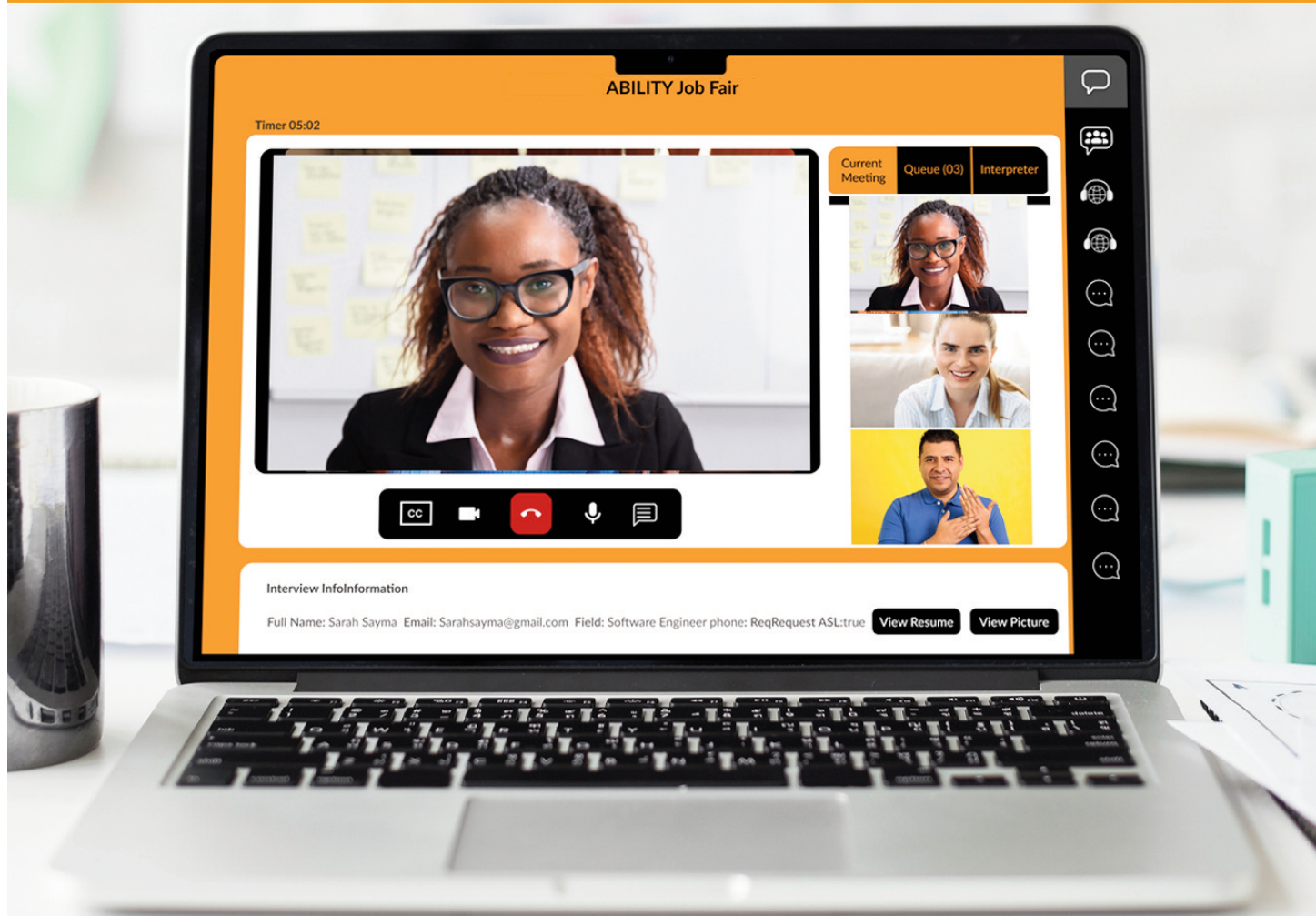
“We wrote for 15,000 healthcare workers. We got to say thank you. That was one of the things I didn’t ever see coming. To say thank you to frontline workers, healthcare workers, first responders and the people who were doing the real work when the rest of us were inside; that was such a gift to me. I don’t even feel like that was something I did for them. That was a real gift for me.”

The process ended up becoming a positive force for Emily in her own health journey, too.

“Anything can happen. I say that in a powerful, bright, cheery way and then I’ve also seen that anything can happen. I went through a bit of a health scare in the pandemic where my legs didn’t work for a solid 3 weeks. It was something they now think may have been triggered by a (the) virus. It was followed by nine months where I walked with a cane I, fondly, named Caney. I had great doctors, and my family and friends really rallied around me. It was ironic to be in and out of a hospital while writing songs for folks in hospitals, but it gave me such perspective. I remained hopeful, and grateful, to the people who kept me laughing and looked after me.”



Virtual Job Fairs for Employment of Talent with Disabilities



Online Career Fairs for Job Seekers with Disabilities



Sign Language



Talk2Text



Screen Reader
Ready



Voice and SMS

<https://abilityjobfair.org> — partners of [abilityJOBS.com](https://abilityjobs.com)



Many other artists wanted to jump aboard the project during the pandemic, too. It was an opportunity for action in the deactivating period.

“One thing I found so beautiful was that in such a crazy time, everybody said yes to sending a song, sharing a song, writing a song. People that are small time artists, to people who are big time artists to people who have won grammy awards; everybody was like ‘of course!’ Everyone’s experience was different, we know that, but as a musician- we were all stuck inside, and nobody could play their shows or their songs or their music. We got a gift of getting to write and share songs.”

A Song for You is still overwhelmed with requests. It continues to be an option to gift the patients covers of their favorite songs, but Emily has found that the most interest is in the music to tell the patients’ stories.

When writing an original, the songwriters of A Song for You begin with collecting information the families wish to share about their loved ones. Questions about the patients’ preferences in music, their personality, and what their family members wish to say to them, provide details that are crafted into the songs that are then recorded and given away.

“I’ve always been lucky to work at the intersection of music and service, but I don’t think it ever felt clear how seamless it was. It just feels like a very natural fit to be able to do this work having gone through some of my own loss and then to be able to find ways to help people keep going.”

What Emily says A Song for You really needs right now are professionals interested in the fundraising side of the non-profit. They’re looking for individuals with development backgrounds, non-profit experience, board members and corporate sponsors to get involved so A Song for You can help as many of the people reaching out, as possible.

“It’s a very emotional thing to go through, but you always feel gratitude. It’s what I come back to every time; I just feel so grateful that we get to do something where there’s a little bit of joy. In a time when the world is dark, there is a light we’re able to shine on things.”

■ ABILITY

by Olivia Austin

hereisasongforyou.org

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timke, PhD

*Can Ads Create Empathy
for People with Disabilities?*



THAT I CAN BE I WILL

Our negative assumptions about people with Down syndrome can lead us to treat them in such a way that these assumptions become reality.

As a kid, I thought disability was a dirty word. It was something I avoided describing myself even though it was undeniable I was born without ear canals. As I got older, though, I recognized the benefits of having a hearing disability and using assistive technologies. There is a power in being able to navigate the world with and without sound at the push of a button. At a dance club, I could switch off my hearing aids to enjoy the pulsations of the bass and remove all distracting chatter from the crowd. In the office, I could tune out the colleague who noisily slurped every single last drop of soup at lunch. Because of my hearing aids, I have been able to experience the same world with and without sound, which has only made me more observant and empathetic toward others who are different from me.

I have relied on a bone conduction hearing aid to navigate the world for most of my life. My first hearing aids in the 1980s were quite large, so the rechargeable batteries didn't last very long. To conserve battery power, I often turned off my hearing aids when commercials interrupted the latest TV hit. To compensate for my loss of sound during those sponsored messages, I would sit closely to the TV to try to read lips or hear whatever I could through vibrations in the speakers. I often would just focus on the visuals and imagine what was being said. I never really felt like advertisements were made for people like me, and they rarely showed anyone with a disability.

Those early experiences of selective listening and



Subaru Forester Wilderness advertising commercial, 'A Beautiful Silence', features a father and his young deaf son driving in a national park where they experience an epic sensory experience at the base of a waterfall.

intense watching seemed to have sparked a lifelong passion for understanding how people are included in our media. I am now a university professor specializing in analyzing ads and how the ad industry works. In fact, I now turn my hearing aids on blast when I see ads to explore how they might foster empathy and break down barriers for historically marginalized communities, especially people with disabilities.

The question of how to build empathy for people with disabilities through media is more than an academic exercise for me—it's deeply personal, as it is for others who are in a small but ever-growing community of dis-

ability media scholars and activists. In the past, various strategies have been proposed to build empathy for people with disabilities, including simulations where individuals temporarily experience a disability. For instance, someone might put a scarf over their eyes to navigate without sight or use a Cochlear simulator to hear through a bone conduction hearing aid. However, these methods have sparked controversy. Critics argue that such simulations are a form of disability tourism that focuses more on the lack of a particular ability rather than genuinely understanding the lived experiences of people with disabilities.



Despite this, and it might sound odd, I sometimes wish I could swap bodies with someone when they are frustrated with my requests to repeat themselves, or when I feel embarrassed when I over-compensate when I can't hear everything someone says. This desire stems from a longing for others to truly grasp and respect the nuances of my living with a hearing disability. While such body-swapping scenarios are the stuff of Hollywood fantasy, it's imperative to find alternative, respectful ways of fostering authentic empathy and understanding through vicarious experiences. I think advertisers have the tools to make such experiences possible.

In mid-2023, Subaru released an ad called "A Beautiful Silence." It puts viewers on the border between audible and non-audible experiences of the world. The ad's beauty lies in its movement from a world of sound and no sound, mirroring the experience of those like me who can control their auditory environment through technology.

The minute-long video, part of Subaru's partnership with the National Park Foundation, features a father and his 10-year-old son, played by Emmy-nominated actor Keivonn Woodard, who is deaf. As they drive through

Yosemite National Park in their Subaru Forester, the father and son communicate using ASL and go between no sounds and hearing the hum of the car, splashing water, wheels over gravel, and a waterfall. This portrayal not only highlights the serene beauty of the natural environment and the need to make it accessible to all, but it also emphasizes the unique ways in which some people with disabilities experience in-betweenness in world. It also shows how bridges can be made between the disabled and non-disabled through shared experiences of nature as well as how people might have different sensory experiences of nature.

“A Beautiful Silence” effectively builds empathy by providing an authentic portrayal of the experiences of a deaf boy, his father, and their interactions. It allows viewers to see the world from the perspective of the deaf son and the hearing father, offering a poignant reminder of the diversity of human experiences.

Similarly impactful is the 2024 Global Down Syndrome Day ad, “Assume That I Can,” created by CoorDown, an Italian non-profit organization. This campaign addresses societal prejudices head-on, demonstrating how negative assumptions about people with Down syndrome can limit their opportunities and potential. The ad features Madison Tevlin, a young woman with Down syndrome, who confronts and challenges these low expectations. Each time she is denied an opportunity—whether it’s having a cocktail, studying Shakespeare, swearing, being intimate, or living independently—she asserts that the limitations are imposed by others, not her disability.

The ad draws on the psychological concept of the self-fulfilling prophecy by highlighting how positive assumptions can lead to positive outcomes. If society assumes that people with Down syndrome can achieve, they are more likely to be given opportunities to do so. This powerful message encourages viewers to change their perspectives, check their biases, and support the potential of individuals with Down syndrome.

Both the Subaru ad and the CoorDown campaign exemplify how advertising might create and build empathy for people with disabilities by facilitating perspective-taking—imagining what the world is like for others who are different from them. These ads go beyond superficial representation. They provide authentic insights into the experiences of people with disabilities. They challenge societal prejudices. And they start conversations about the need to recognize and respect a broad range of various abilities.

Based on my research and collaboration with the advertising industry, the following strategies are a starting point for creating more positive representations of people with disabilities that are rooted in empathy and respect:

1. **Avoid Pandering:** Pandering involves superficial or insincere attempts to appeal to a particular group, often without genuine understanding or commitment. Advertisers should ensure that their campaigns are built on genuine insights and respectful portrayals, avoiding empty gestures that merely seek to win favor without substantial support for disability communities.
2. **Steer Clear of Tokenism:** Tokenism is the practice of making a perfunctory or symbolic effort to include members of underrepresented groups, often to deflect criticism rather than to genuinely embrace diversity. Authentic representation requires more than just placing people with disabilities in advertisements; it involves giving them meaningful roles and ensuring their stories and experiences are accurately depicted.
3. **Resist Inspiration Porn:** Inspiration porn refers to objectifying people with disabilities by portraying them as inspirational solely because of their disability. This type of portrayal can be demeaning and reduces individuals to mere symbols of overcoming adversity, rather than recognizing them as complex and capable individuals. Advertisers should focus on portraying people with disabilities in a way that respects their dignity and individuality.
4. **Involve People with Disabilities in the Creative Process:** Authentic representation begins with inclusion. By involving individuals with disabilities in the brainstorming, scripting, and production stages, advertisers can ensure that their portrayals are accurate and respectful. This collaboration helps avoid stereotypes and clichés, resulting in more genuine and impactful narratives. Powerful image makers should use resources such as those offered through the Ability magazine network (e.g., abilityE and Ability Job Fair) to find and recruit talent with disabilities.
5. **Focus on Lived Experiences:** Rather than relying on simulations, advertisers should emphasize the real-life stories and experiences of people with disabilities. Documenting daily experiences and moments of joy provides a more nuanced and empathetic portrayal. These narratives allow viewers to connect on a human level, fostering deeper understanding and empathy.
6. **Highlight Abilities, Not Just Disabilities:** Advertising should celebrate the abilities and achievements of individuals with disabilities. By showcasing their talents, skills, and contributions to society, ads can shift the focus from what individuals lack to what they bring to the table. This positive framing helps break down stereotypes and encourages a more inclusive mindset.
7. **Inform the Audience:** Part of fostering empathy involves educating the public about different disabilities. Advertisers can include informative elements in their campaigns, such as facts, statistics, and resources, to help viewers better understand the context and

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challenges faced by individuals with disabilities. Education is a crucial step toward building a more empathetic society.

8. Commit to Long-Term Change: Empathy-building should not be a one-off effort but a sustained commitment. Advertisers and media organizations should integrate diversity and inclusion into their long-term strategies, ensuring that the representation of people with disabilities becomes a norm rather than an exception. This ongoing commitment can drive cultural change and promote lasting empathy.

Years since my days of turning off my hearing aids while watching TV, I still think about how far we must go in building true understanding and empathy for people with disabilities. Ads like “A Beautiful Silence” and “Assume That I Can” show a potential way forward, but it’s up to all of us to ensure that these efforts are genuine, respectful, and sustained. Even if we aren’t sitting in a board room creating an ad that shapes how society views disabilities, we can continue to demand that better work is done. We can also share good work with others when we see it.

Just as I once strained to stay tuned to commercials, it’s vital that we continue to demand powerful image mak-

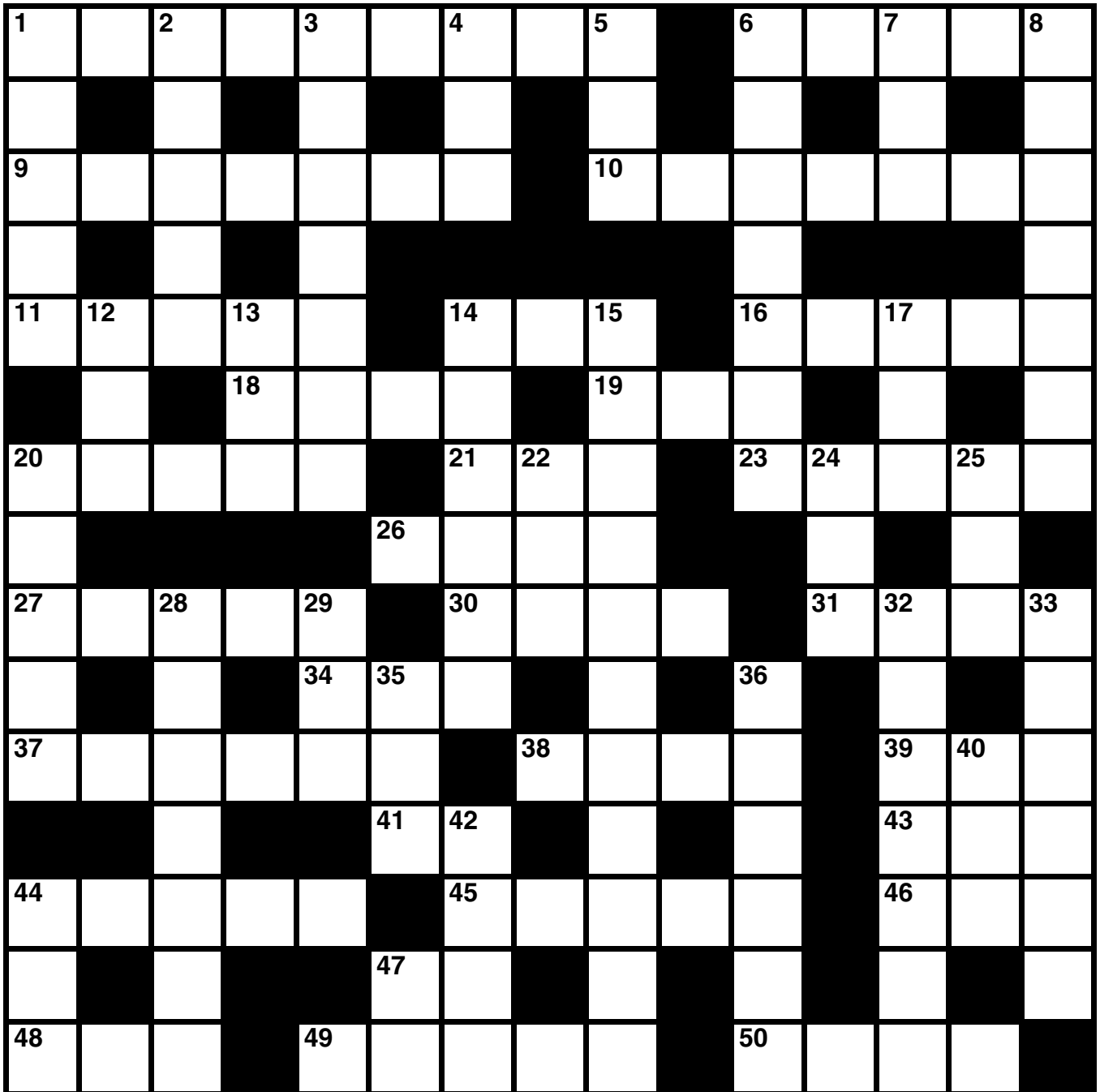
ers to listen more carefully to the voices of those with disabilities and see the world through their eyes. It’s not just about better advertising; it’s about a better, more inclusive world for all of us.

For several decades, *ABILITY Magazine* has been at the forefront of empathy building by destigmatizing the concept of disability and humanizing people with disabilities. This publication has provided a vital platform for disability perspectives, especially when other media outlets couldn’t or wouldn’t. As you page through the latest issue, take a close look at the various ads that support these efforts—how do they build empathy, foster respect, and create opportunities? What are your thoughts about what you see?

Ed Timke is an assistant professor of advertising and public relations at Michigan State University and an editor of the academic journal *Advertising & Society Quarterly*. His research and teaching focus significantly on disabilities in advertising and media. Feel free to reach out to him with your thoughts on the issues he presents in this article. He will share reactions in a future article in his continuing series on reflections about how corporate America represents and includes people with disabilities. He can be reached at timkeedw@msu.edu. ■ **ABILITY**

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ABILITY'S



Crossword Puzzle



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ACROSS

- Celebrity actor and comedian who plays the autistic character Hank, in "Parenthood"- 2 words
- Ashley Fiolek's dog
- Actor with DS in "The Peanut Butter Falcon"- ____ Gottsagen
- "Then ____ Met Alan": BBC drama based on the real-life love story of two disabled cabaret artists
- Character in "CODA" who is a child of deaf adults and is the only hearing member of the family, Ruby ____
- "Big Bang Theory" character
- Indian language
- Expectations for the future
- New Year's ____
- Safe place
- Rock's Bon Jovi, first name
- Superman actor who wrote the book "Nothing is Impossible"
- Cruel
- Isaac Hayes big hit
- "____ Camp: A Disability Revolution documentary
- Barely open
- Humor
- SNL writer and cast member, Kevin ____
- Actor, Gooding Jr.
- Clear the tables
- Santa Fe locale, abbr.
- End of the week, briefly
- Goes with 20 down
- Bahamas, e.g.
- Massachusetts' Cape ____
- St Paul's state, abbr.
- "No Time to ____": film theme song was sung by Billie Eilish
- Wheelchair user starring in the Hulu show "Run" - ____ Allen
- Geeky sort

DOWN

- Gillette product
- Workout spots, for some
- Praise
- "Enchanted" actress Adams
- Sun, e.g.
- Person with cerebral palsy who's the first Swiss national with a disability to become a Fulbright scholar, Claudio ____
- Business degree, abbr.
- Dream for the future
- Out ____ limb, 2 words
- "Every Little Thing ____ Does Is Magic"
- Decline
- Artist in a wheelchair creating art that is a catalyst for social change: now displayed at the Venice Biennale, ____ ____ Wallinheimo-Heimonen, 2 words
- Compass point, abbr.
- Jordan native who was born blind and is now studying a masters in Italian, goes with 44 across
- Blade on a boat
- Org. responsible for climate change initiatives, abbr.
- By way of
- Study closely
- "____ and a Half Men"
- Ability's virtual employment center, 2 words
- "____ Phoenix": Netflix documentary about the history and legacy of the Paralympic Games
- Place to stay the night
- IBM computer that beat the "Jeopardy" champion
- Coffee ____
- Austin Powers role, "____ Me"
- "____ Talks"- influential presentations
- "____, myself and I" Beyonce

answers on page 66

SEE BETTER

AT ANY AGE

AUTHOR

- The Miracle of Pi in Eye
 - LASIK in the 21st Century
 - Cure for Keratoconus

VOTED BEST

- Newsweek Showcase Top Doctor
- LA Daily News Readers
 - VC Star Readers
 - Consumer Research Council

DOCTOR'S

DOCTOR

- Surgeons & Physicians
 - Chiropractors & Dentists

SURGEON

TO STARS

- Actors & Celebrities
- Olympic Athletes

FOR PATIENTS

18-45

- Thin Flap Lasik
- ICL

FOR PATIENTS

45-65

- Superlasik
- Pi in Eye

FOR PATIENTS

ABOVE 65

- Pi in Eye
- Laser Cataract Surgery

OTHER THAN

LASIK

- Pterygium
- Intacs & Cross-linking (CXL) for Keratoconus



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Westlake Village

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Westlake Village, CA 91362
Phone: (805)230-2126



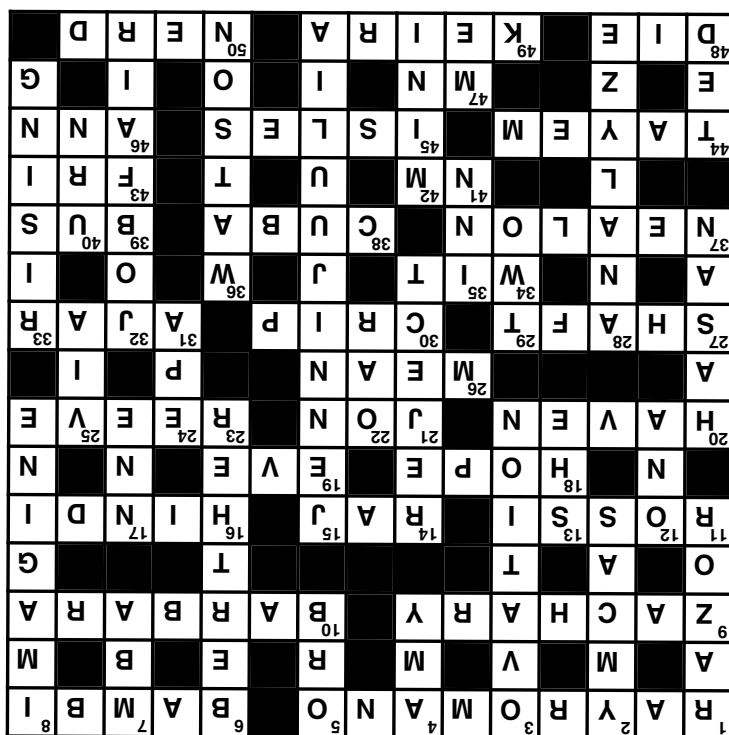
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AARP
Real Possibilities



Crossword Puzzle

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We can connect you to local and online support groups for both patients and caregivers.

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ADA - Affirmative Disability Action

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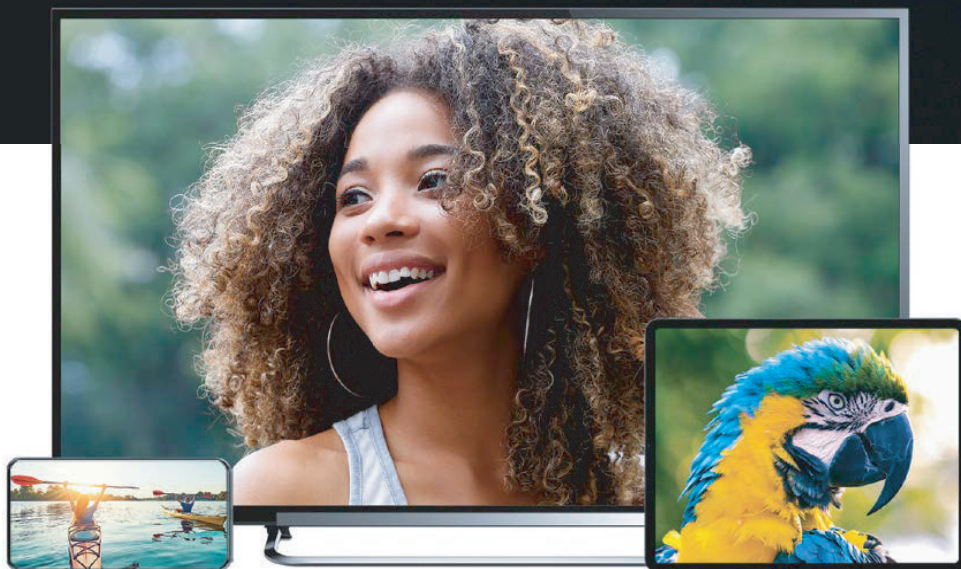
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- **DiversityInc** magazine has ranked Wells Fargo No. 7 on the list of the 2021 Top Companies for People with Disabilities. **DiversityInc** also ranked Wells Fargo No. 25 on the Top 50 Companies for Diversity, No. 17 on the list of Top Companies for Employee Resource Groups, and named among the Top Companies for LGBT employees.
- For the tenth consecutive year, readers of **CAREERS & the disABLED** magazine recognized Wells Fargo as one of 2021's Top 50 Employers of people with disabilities.
- **Equal Opportunity** magazine ranks Wells Fargo No. 15 on the 30th Annual Top 50 Employers 2021 list.

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