ZEREN EDER: Hello, everyone, and welcome once again to the fourth and the last of Sloan-C Accessibility Webinar Series. For this webinar, we have our accessibility specialists panel, with the topic, "Understanding 'Invisible' Disabilities & What this Means for Online Education." Kelly Hermann, Michel Miller, Keith Jervis, and Cyndi Rowland are our wonderful group of panelists today.

Before we start, I would also like to thank our sponsors, who have provided great support throughout the webinar series. We are very thankful to 3Play Media, Perkins eLearning, and University of Illinois College of Education for their contribution. And we are very fortunate to have Kristen Betts, director of online and-- our moderator today is, again, wonderful Kristen Betts, without whom this whole webinar series would not be possible.

And Kristen has recently accepted the role of chief academic officer at Forbes Education. And we wish her the best in her new position. Previously, Dr. Betts was the director of online and blended learning at Armstrong Atlantic State University. She has received distinguished national and international awards in online and blende education. And she also presents nationally and internationally on these topics. And I'm sure many of you are familiar with her. With that, I would like to now hand the microphone over to Kristen so she can start introducing our panelists and start the discussions today. All yours, Kristen.

KRISTEN BETTS: Thank you so much, Zeren. And I want to thank all of you for joining us today. In terms of the agenda, it's going to be focused on our presenters. We are so fortunate to have four recognized presenters in the area of invisible disabilities. So I'll do a brief introduction and actually ask each of the presenters or the panelists to give a more detailed introduction of themselves. We're going to move right into the topic, and then we're going to save the last 20 minutes for questions and answers.

As Zeren mentioned, we will open up chat. When we begin with the speakers answering the questions, we will open up the chat, so you can post your questions. We will then culminate the questions at the end so we can answer them during the Q&A period. So right now it is closed, but it will open up.

As Zeren mentioned, we've got Kelly, Michel, Keith, and Cyndi. If you happen to see any of them at any of your national or international conferences that you attend, I strongly encourage you to grab a colleague, watch their session, because you will walk away with not just tangible

information, but applicable strategies that you can take back to your institution and use immediately.

I'm going to give you some data and things to consider. This is an area that I think is relatively new but growing exponentially. It's one in which everybody needs to really have a full understanding. You'll see a couple of quotes here. It says, "Invisible disabilities is an umbrella term that captures a whole spectrum of hidden disabilities or challenges that are primarily neurological in nature."

The next one, "Invisible disabilities are the most common type of disability among college students." And what we're going to find is, this is our fastest-growing percentile in terms of disability services across campuses. 10% of people in the United States have a medical condition that could be termed invisible disability. And lastly, we're looking at the majority of these individuals having a chronic medical condition, an illness, that's invisible.

What you are going to see in the literature is it's exciting because there is so much more attention being brought in this area. You'll see the terms used interchangeably-- invisible, hidden, and silent. Types of invisible or hidden disabilities, we see, right now on the screen, two large columns. Within each of those areas, you've got subsections that go on.

When you go to this next slide as well, you're going to see, again, two large columns. This does not include the full spectrum. This was a list that was taken off of Disabled World. But again, I encourage you to get your campus as familiar with these disabilities as possible.

Video resources. Probably one of the best video resources is Invisible No More. It is excellent. It is something I would strongly recommend you consider sharing, especially when you hire new faculty, sharing its faculty development sessions, because it brings you face to face with students who have invisible disabilities.

And it's great when one of the students says, yeah, but we look great, don't we? And I think that's really going to be one of the primary things we talk about today, is how we're serving our students. Down at the bottom, there's a great video talking about veterans and invisible disabilities. I encourage you all to watch that.

Most institutions are proactively reaching out to the veteran student population, particularly online. There are a lot of things to consider when you're working with veterans and you look at some of the data that you're going to see here. The data that's being presented right now

comes from 2008, 2009. There's some recent data, but it doesn't cover these figures, per se.

So going back to, really, 2008, 2009, 2010, you've got almost two million American service members who were in Iraq, Afghanistan, 30,000 coming back with what they call visible wounds. And you've got a large percentage that have what are being called hidden wounds or invisible wounds. And this is going to be your PTSD, Post Traumatic Stress Disorder, and traumatic brain injury. And so, again, this is something that faculty need to be familiar with, not just the Office of Disability Services.

Again, more wonderful links. You'll see here there's a national research that's been done, looking at hidden disabilities. So again, all of these links will be available to you. Zeren is going to provide information at the end. But you'll be able to share the PowerPoints as well as the link to the broadcast and all of the information we're bringing to you today.

So our first presenter is Kelly Hermann. She has her master's degree from the College of Saint Rose. She's a current doctoral student, which is exciting. She's currently at Empire State College. And I'm going to ask Kelly to give you more information about her professional background and her area of expertise. So Kelly I'm going to give you the talk button.

KELLY HERMANN: Thanks, Kristen. Hi, everyone. It's really exciting to be here today. This is one of my favorite topics to talk about. As Kristen said, I'm the director of Disability Services here at Empire State College. I come from a background in speech and language therapy. That's where both my masters and my bachelors degrees are in, and my current doctoral work is in educational administration and policy studies.

I got involved in online education because I took a job at Empire State College over eight years ago and realized I had jumped into a new pool, and I didn't know how to swim. So really kind of trial by fire, and I love the fact that we've learned a lot about how to address a whole host of disability-related issues online and that we can be able to share what we've learned here so that others can benefit from that. So I'm really excited to be able to share that with you today.

As it says on the slide, I've also been very active in the Association for Higher Education and Disability. That organization is called AHEAD. Our conference is coming up in July. It's a great conference for those of you interested in this issue. And in 2008, I also was appointed by our then-governor to the New York State Instructional Materials Advisory council, which really deals with those students who have print disabilities and getting their textbooks into

appropriate electronic formats. So I'm excited to share that with you today. And I think I am going to turn it over to Michel, correct? Kristen?

KRISTEN BETTS: Yeah, thank you so much. So we've got Michel Miller, who has her Ph.D. from the University of Miami, her master's degree. And she is currently an assistant professor in special education at Drexel. I was very fortunate to teach with Michel Miller when I was at Drexel University. And it is wonderful to have her talking about this. She has great expertise in the autism spectrum. So, Michel, without anything else from my end, if you could give more detail about your professional background and specialization, that would be great.

MICHEL MILLER: Great, thanks, Kristen. Yeah, I began my career in regular education K to 12. And I was a special ed teacher. So a lot of information I'm going to share today came out of my work with students in classrooms and understanding accommodations in the K to 12 environment. I'm currently, as Kristen said, an assistant professor in special education, and I got involved in online education because I began and developed our special ed master's program here at Drexel.

And although I had some work online in my University of Miami program, I really got thrown to the fire being a program director and developing programs online. Throughout that work, I became involved in our online learning council here at Drexel, and we developed an accessibility committee to begin to address issues that we were seeing with our students who were having accessibility issues with our online content. And now I co-chair that committee, and I'm going to be sharing some of my work that we are doing together with the community. Thank you.

KRISTEN BETTS: Thank you so much, Michel. We have Keith Jervis. And Keith is with Penn State. He has several certificates, as you can see, and licenses. He's got his master's from the Pennsylvania State University and his bachelor's from Hartwick College. He is the interim director right now for the Office for Disability Services and brings wonderful years of expertise in this area. So, Keith, if you could give a little more information about yourself, that would be great. Thank you.

KEITH JERVIS: Thank you, Kristen. As Kristen mentioned, I'm currently the interim director for disability services. And my other role is a disability specialist assigned to the Penn State campuses. Penn State has 23 additional campuses, including a law school and a medical school, that are away from our University Park campus.

Also within this sphere of our campuses, we have a world campus. And our world campuses

are [? online ?] campus environment. And for several years, I served as the disability specialist specifically assigned to the World Campus. And so that's where my experience working with students online comes from.

Now I collaborate, supervise the individual who is in that position full-time. So they saw their growth of students go from about 60 or so students when I last was doing that job as a disability specialist to about 176 individuals identified in their online courses as having disabilities of one sort or another. I've also been a coordinator of disability services at a smaller college for some years. And prior to that, I come from a field of vocational rehabilitation, having been a vocational rehabilitation counselor in New York, New Hampshire, and Pennsylvania. Thank you.

KRISTEN BETTS: Thank you so much, Keith. And we also have Cyndi Rowland who is joining us. She has her doctoral degree from Utah State University, as well as her master's. She is currently involved in multiple roles. And I told Cyndi that I would let her share that with you, because she is integrated across the campus in various positions, as well as integrated nationally across a number of exciting associations. So, Cyndi, I'll give you the talk button.

CYNDI ROWLAND: Thanks so much, Kristen. And good morning, or good afternoon, depending on your time zone today. I have been at Utah State University for quite a long time. I'm currently the associate director at the Center for Persons with Disabilities, which is Utah's University Center for Excellence in Disability.

And every single one of our states has one of these, what they're called, UCEDDs, University Centers for Excellence. So you should check yours out. They are hubs for research, service, technical assistance, and education. And they are different from disability research centers on campuses.

Within the Center for Persons with Disabilities, my portfolio of projects all center around technology and disability. Some of you may be familiar with one of the projects I'm most proud of, which is WebAIM, that was started in 1998 with a grant that I was lucky enough to secure out of the Education Department, the federal Education Department. So that's been going now for about 15 years.

And I will say that I think I come to this particular presentation as a result of that work. WebAIM, as many of you may know, has provided training and technical assistance to

technical people, to web developers, for a very, very long time. We were quite concerned that technical people didn't really have the level of recommendations to help transform their designs to things that would be kind, I guess I'll say, to individuals that had cognitive and/or learning disabilities, which are many of the hidden disabilities that we're talking about today.

We got a grant from the US Department of Education to actually do, not only a lit review, systematic lit review on this, but also some research on whether there really were some tried and true recommendations that we could give developers. You know, everybody do this, and it's going to help folks with cognitive and/or learning disabilities. That grant was very instructive, and I'm going to share some of the lessons from that.

Last thing I just want to mention is that I'm also the technology director at the National Center on Disability and Access to Education. And I'm going to give a really quick shout-out here. We've got a project there, Project GOALS, which is focused around working with post-secondary institutions on how they can really push out system-wide reform on web accessibility. Since it's grant-funded, the help and the tools that we have are available at no charge right now. So give me a shout-out if you're interested in any of those kinds of things. And I'm going to give this now back to Kristen. And thanks for listening to my long-winded self-introduction.

KRISTEN BETTS: Thank you, Cyndi. And as Cyndi mentioned, in terms of the web, everything is moving to the web-- our online, our blended programs. So much of the information that you are going to ascertain today, I would highly recommend that you do share with your colleagues who may not necessarily be teaching online. But chances are, they're posting materials online. They're sending materials electronically. They're sending people to different online resources.

So right now we're going to move in to, really, the heart of the presentation. And we are asking our panelists to share with you effective practices and available resources to support students and faculty with invisible disabilities in online education. And if you've attended any of the prior three sessions, our first session provided, really, a holistic approach from an administration and policy perspective.

The second group included students, all with different disabilities. Then we had our faculty, who had a variety of different disabilities as well, talking about what it means to be a faculty member and the importance of support. So this is going to bring together everything holistically. So again, please do share the resources. So, Kelly, I'm going to turn everything

over to you right now.

KELLY HERMANN: Great. Thanks, Kristen. I want to kind of set the stage when we talk about some of the effective practices that we look at in online education. I think one of the first, kind of the basement, if you will, the foundation that we need to talk about, is what the federal law tells us, in higher education, that we must do for students with disabilities.

And there are three or four federal acts that kind of pertain to the work that we do. The first and, probably, the very first foundation is Section 504, the Rehabilitation Act of 1973. But other acts came later and have kind of built upon the access that 504 has set for students at institutions that receive federal funds.

So if you work at an institution that receives at least $1 of federal financial aid, federal grant money, any sort of federal money, your institution is subject to the provisions of Section 504. And you are required to ensure that your students have access to your programs, courses, activities, services, whatever it is that you do.

One of the things that always struck me when I've looked at this list-- and I've talked about this list a lot, both nationally and at my institution-- is that, 1973, we weren't using the internet, period. Most of us didn't have computers in our homes back at that point in time. In 1990, when the ADA was first passed, we did see the rise of computer use. But it wasn't necessarily something that was well-integrated into the classroom. And there may have been some early adopters with the internet, but certainly we weren't at the same level as what we are today.

And then I'm going to skip over 508 for a second and just kind of talk about the ADA amendments passed back in 2008. This, in my opinion, was a missed opportunity for Congress to really look at some of the educational technology that we are using, and we were using, pretty heavily back in 2008. But what that law did was kind of reset the definition of disability.

So if you think back to the slides that Kristen showed you earlier [INAUDIBLE] and the sheer number of diagnoses that are listed on those two slides, a lot of those are conditions that folks wouldn't necessarily think rise to the level of a disability. But they do. And the impact is variable and person-dependent. So I mean, I tell my students, I tell the faculty here, any condition that a student is diagnosed with could potentially rise to the level of a disability and require that the student needs accommodations to ensure that the courses that they're taking are accessible.

So what all of these three laws tell us is that our programs have to be accessible. They don't necessarily tell us how to do that. Section 508, as a rehab act, gets quoted a lot. If you are someone who goes out on the conference circuit, and you go to the exhibit halls, and you're talking to software vendors or vendors of other devices that are being used with students right now in online or other education, they're going to tell you either one of the two things, has been my experience.

One, I'm ADA-compliant, which really, in my opinion, doesn't mean anything because there are no standards for them to follow within the ADA Or they're going to tell you that they're 508-compliant. If they're 508-compliant, what that means is that they have voluntarily chosen to follow some of the accessibility guidelines that are built into Section 508. But 508 only pertains to the activities of the federal government when it comes to software procurement.

On this list, on this slide, the most important thing that we all need to pay attention to is the 2010 Joint Dear Colleague Letter and the associated FAQ document that came out a year later. This was in response to the Kindle cases that were brought in conjunction with the National Federation of the Blind. And it talked about the accessibility of e-readers but also made some other statements applying these provisions within the Dear Colleague Letter to other educational technology applications being used on campuses today.

And so it really made a lot of us kind of sit back and take notice and say, even when we're piloting something new, we need to be paying attention to accessibility. It's really, really important. If you haven't reviewed those yet, I highly suggest that you do, especially the FAQ document. There's a wonderful example of what they have told us in terms of our programs needing to be of substantially equivalent ease of use to those being used, such as the Kindle, in other settings of students who do not have disabilities. And there's some really good examples of how we can accomplish that.

And I look at this list. And when I talk to my faculty, and they get nervous, and they get scared about this, I say to them, stop, don't think about this as an opportunity to be kind of-- you know, your creativity to be quashed. This really is an opportunity for you to think outside the box and for your creativity to bloom.

So one of the things that we talk about a lot here at Empire State College, and that we really have attempted to integrate into our online courses as well as our regular curriculum, is the idea of universal design. Some of you may have heard the term "universal design for

learning," "universal design of instruction." There have been a few different flavors and varieties of what universal design is. But it all comes back to these original seven principles that I'm going to talk about in a second that is an architectural concept that was developed by an architect named Ron Mace in 1985. And there's a link here to the North Carolina State University project on universal design.

And what we see with this are seven principles-- I'm going to go ahead and advance the slide-- that look at what we can do to make our environment more usable for all learners. This isn't just about accessibility. And I think if there's one takeaway that you bring home today from what we're going to talk about is that the list of diagnoses that can be covered on those two slides that Kristen showed us earlier, some of the other things that Michel and Keith and Cyndi are going to talk about later is that anyone-- disability really is the great equalizer. Anyone, at any point in their life, can become disabled.

I see this in my daily practice with the students that I work with. The average age of our student here at Empire State College is 36. Most are coming to us because they have been in a car accident. They have had cancer diagnoses that have resulted in loss of function. They have fallen and have orthopedic issues.

Traumatic brain injury-- we see a lot with our veteran student population, but we also see a lot with our general adult population here at the college. These are individuals who, at some point in their life, have acquired a disability and now can no longer do what they have done once before and are coming back for retraining.

Online learning, in the eight and a half years that I've been at Empire State College, is so attractive to students, adult students and students with disabilities, because it offers them a level of invisibility. There are a lot of identity issues around that diagnosis and then being able to say, I am an individual with a disability. That is very, very difficult for some of these students to say.

And so what we can do with these principles of universal design is to make these environments more universally usable for any student who is [INAUDIBLE] variety of learning needs. So if you look at our Blackboard Collaborate screen that we're looking at here today, the first two principles are in work in every way that we're talking today.

When we open up the Q&A-- even though because of the number of participants, we're not going to be able to use your microphone today. But there are choices built into the system.

And there is a lot of flexibility in [INAUDIBLE]. You can write your comment in the chat. You can choose to use the audio and the microphones set-up. Or you could choose, if you wanted to put yourself on a webcam, be able to interact in that way.

So there are choices automatically built in so that if we have students who have a disability and can't use one of those choices, there is some flexibility built in. Or if you happen to be just averse to seeing yourself on video, you don't have to necessarily use the video in order to be able to chat with others. So I think that's really, really important.

Some other ways that we see universal design at work in online courses. In terms of tolerance for error, the fifth principle that's listed there, these I've seen in Moodle course rooms-- we are moving from ANGEL as our learning management system to Moodle. And then some of the things that I've seen in Moodle that are different from ANGEL is that, when you go into a discussion forum and you go to post as a student in that discussion forum, there's a pop-up that can come up that says, are you sure you really want to post this?

And so it's an opportunity for that student to go back through and read over that again and say, is this really what I wanted to say? And there's a number of reasons why that's important, both for the student without a disability, to make sure that they're-- you know, we've seen some students who get a little too angry and free with some of their choice of vocabulary. And these discussion forums, to be able to check that, but also for the student who has some level of cognitive involvement from a disability to be able to proofread it again and can make sure that it's actually what they want to say.

Low physical effort. You know, kind of some of the principles of good web design, of not having too much text on a page or screen so that there's a lot of scrolling that's involved. And you know, if you're able to go into your screen, look at it, get the text that you need, and then be able to advance to the next screen, that, again, is low physical effort.

One of my favorite examples is a module at a glance. And I'm sure a lot of you who are using online courses may have seen this used before, may even be using it yourself. I call it kind of home base for that module because there are links that go out to all of the lecture material, go out to the learning activities, to the readings, to the discussion forums, to the assignment. So if the student gets lost, they can go back to that module at a glance. And it allows them to have to have that simple and intuitive use of the online course space.

Some other resources. As I mentioned, I'm very active with AHEAD, the Association for Higher

Ed and Disability. And we have an online and learning distance education Special Interest Group. That's what SIG stands for. We've been working on a wiki with some resources and some other tips and strategies from some of our members who've been active in this area. We are hoping that that is going to be out in June in advance of our conference so that's something that we can share at that point as well. But there are other resources on AHEAD's website.

WebAIM, I'm one of Cyndi's faithful followers in terms of some of the resources that are available on WebAIM. W3C, if you're not familiar with that, they have some web standards. And then one resource that I put as well from Empire State College, is online learning for me? And I think one of the biggest barriers for students with online courses is making an informed choice on whether or not they can handle an online course. Many students will say to me, I'm coming back to school for the first time. This is the first time I've had a disability. I'm going to do this online because I don't have to worry about transportation, but I really don't like using the computer.

Well, I can tell immediately that that student is going to struggle in that first term, the second term, if they get through it because they're not used to using the computer for learning. And now that's going to be their complete and total classroom and learning environment. It can be really difficult for them.

So definitely, there are some questions that we ask of students to get at their comfort with technology, how comfortable they are with managing the signs and symptoms of their disability in general. There's really important considerations that they don't often think of. And certainly, we keep trying to develop that list a little bit more, because every day there's a new situation that students present to us. We're like, oh, we never thought about that before. But our goals with this is to really kind of make the students think. So I think now I am going to turn it over to Michel, who's going to talk about her slides.

MICHEL MILLER: Great, hello. So building on what Kelly talked about, in education, we have build on this concept of UDL and promoted Universal Design for Learning. And in UDL, we want to create lessons and learning activities that consider all of our students. Using UDL, we want to ensure students can access and engage with the content.

But our question today is, how can we apply those awesome concepts that Kelly just shared on UD and those principles to course design. So I'm going to share one strategy we at Drexel

are using to promote the development of accessible course content during the design phase of our courses. And it's the use of personas. According to Pruitt and Adlin, personas are detailed descriptions of imaginary people constructed out of well-understood, highly specific data about real people.

Personas actually came out of the world of product design. And they were also, like UD and UDL, kind of wanting to design their products with the end-user in mind. They wanted to design products that were able to be used by a diverse group of users. And commercial web designers also began to use this idea.

And the power of personas is that they put the end-user in front of each person involved in designing process of the course. What I found too often is that we don't consider the end-user until one of our students is having difficulty in one of our courses. And as part of the online accessibility committee at Drexel, we have developed five personas.

And when we have introduced these to our faculties, faculty often share, oh, I wasn't even aware or thinking about students with disabilities in my course until I encountered a student with a hearing impairment. And then I was backpedaling and trying to redesign my assignments and my courses to be accessible.

So that is one thing that we want to do on the front end, is design courses based on our possible users. We actually have developed five personas at Drexel-- one representing a student with a visual impairment, one representing a student with a hearing impairment, one representing a student with a physical disability. But I'm going to talk about our two others today. I'm going to talk about our student with a cognitive impairment and a student with a social or emotional disability.

So let's look at our personas. And, again, this is a tool that people who are designing courses at your college could have in front of them as a poster. When we look at the structure of our personas, each persona has four components. First off, you see a picture, and that helps to make the user a real person, so that when a faculty or instructional designer is designing the course, they can actually visualize Jenny.

We also have a list of characteristics that give more detail about our person. And then we have, at the bottom of this page, you see a quote that actually really gives them a voice. And on the next slide I'll share you, our fourth component is a detailed description of how they work best.

So let's go through Jenny. And Jenny, as you can see, is 21 years old. She's a third-year undergraduate in business administration. And she has difficulty with reading, linguistics, and verbal comprehension. Most likely, she probably is diagnosed as a student with a learning disability. And in her quote, you find that she often finds online course content confusing.

So we have this person, Jenny, in front of us, this persona now. And we want to consider how we could design our course on the front end based on Jenny's characteristics and how she works best. So here's how Jenny works best. And one thing I want you to know about a student who has a cognitive impairment is, a lot of times they have a lot difficulty with executive functioning and organization.

So you'll see that a lot of these techniques of how Jenny works best considers those deficits or difficulties with executive functioning and organization. So when you're working on designing a course and you're thinking about Jenny, one thing that you should keep in mind is that content should be structured with headings and bulleted lists, something that helps organize the content for her and helps her make sense of the content that's posted.

You want content broken into paragraphs, and no more than one important idea in each. So when you're designing a course, and if you look at a course that's walls and walls of text, that is gonna be very difficult for Jenny to work through in your course. Also, labels are used consistently across your weeks so that we always know, OK, this is the label for reading, this is our label for our assignments in the course.

Definitely providing a layout that is very simple, removing a lot of distracting images and animations that can take her attention away from the important content in your course. And one thing that I find that's very helpful for students with any type of cognitive impairment is that when you create the course, you think carefully about your navigational elements, so that in each week they're at the same place, whether it's a week or a unit division, but that those navigational elements are in the same place.

So if you always have your learning objectives first, and then maybe you have your reading assignments second, and then your lecture third, that that navigational order is the same each week so she begins to understand and know exactly where to find the material in your content. Also, weeks or units are structured to provide an online. And then textbooks are available electronically.

A lot of students with a cognitive impairment will use screen reading technology and electronic text books to take out some of the reading and the difficulty with the coding that they experience so that they can get a better understanding of the content. And then also using icons to identify different types of content is very helpful because that helps them with them with a memory cue. It gives them that visual cue to help them.

So these are all kinds of techniques that focus on the design. But we also don't want to forget that when we talk about universal design for learning, not only do we want to provide access to the content, but we also want to create multiple ways of engagement and providing consideration of the assignments. So on this next slide, we see that due dates for assignments are clearly stated and easily located in the course. It's really important that these students that have difficulty with executive functioning, difficulty organizing themselves and getting assignments in on time, is the fact that if we make sure that we have due dates for assignments clearly stated.

Also, one thing that I've noticed, the more I work on designing courses, I am constantly improving my assignment descriptions to make them clearer and provide information on to what is to be submitted. And many times in my courses, I have submit, semicolon, and a bulleted list. So my students know exactly what I want submitted.

I often provide my students an opportunity for early submission so that I can provide them feedback and let them revise it. And I break down large assignments into scaffolded substeps. I teach an action research course. And it's a huge project. And I have my students submit pieces of the project, get feedback, and then submit the whole project.

Also, choices are important, providing choices when possible for how students demonstrate learning. Use a variety of assessments in your courses. Don't just make it all about writing. A lot of our students with cognitive impairment do have difficulty writing. That's one of the processes that's hard. Of course, we encourage our students to use the writing center. But we also want to make sure that we allow them to be evaluated based on learning based on their strengths.

And another thing that I do is a duplicate quiz. A lot of our students, in their accommodation letter, get extended time on the test. So one thing we can do is make a duplicate quiz that has the extended time limit and assign students to which quiz they take. They won't know that one has a longer time limit than the other.

When we look at Matt, he's our second persona that we're going to talk about today, Matt is 24 years old. And he's a graduate student. And he's an engineering major. And he likes taking courses online. And he has an autism spectrum disorder which, again, is an invisible disability. And it really impacts his social abilities, his way he interacts with his peers and his professors. It impacts his need for routine and sameness.

And if you look at Matt's quote, is, he likes online courses because he doesn't have to do the social interaction which is difficult for him, that he would have to do in a face-to-face course. And it helps him avoid some of the sensory overload that he experiences in physical environments, which can cause him anxiety.

So let's look at how Matt works best. One thing that you see is information that's provided on how to get started in and navigate the course. I believe Kelly mentioned this also. It's really important for this student to have predictability. Students with autism often have anxious and anxieties when they cannot predict their environments. And especially with an online environment, the more we can help them predict and know how to work through the course, the better. So again, a get-started intro is very helpful to tell them how to navigate the course.

They really do need clear expectations for discussion board interactions and group assignments, because this is where their deficit in social skills can impact. So sometimes a student who has autism may have some difficulty interacting appropriately on the discussion board. And so clear expectations are very important for these students.

And just like Jenny, navigation elements are in the same place. That helps them predict the routine and reduces their anxiety in taking an online course. Same thing with the structure of the units. Another thing, again, that helps them with that difficulty with predictability is rubrics, templates, or exemplary models provided for assignments.

Again, thinking about our assignments, some of these are just best practice. You're like, oh, I already use rubrics. And I didn't realize that using rubrics or providing a template does help my students with autism spectrum disorders, and even students with cognitive impairments, because it provides those expectations. I began using exemplary models in my action research course. And the level and the work of my students has dramatically increased because they see these models and they know what we're looking for.

Also really important with a student with autism is the fact that they have difficulty with change.

So if you are making a change with a course assignment or a structure, it's really important to give our students prior written notice. Use an announcement and let the student know a change is coming. And that will, again, help reduce that anxiety and help meet that need for predictability in the course that is part of this condition.

And then the other important thing is to refrain from using slang or sarcasm in audio content. Students with autism are very literal. And even students that are very, very bright, they do interpret social cues literally. So if you're lecturing and you're using a lot of slang or difficult terminology, that can be difficult for our students with autism.

So those are just some quick overviews. But if you would want to use these personas, one of the way I suggest people use them is to post them on their wall. And as they're designing, they're like, oh, will this content works with Matt? and begin to look at it. We're actually in the process at Drexel right now of converting these to a checklist so our faculty and designers can say, OK, did I consider Matt while I designed this course? Is the information provided on how to get started in the course and to navigate the course? And I can check and look and see if that's included.

Are there clear expectations for discussion boards? So these, how they work best, we're actually converting into a checklist that can then accompany our posters and be in front of all of our course designers and faculty when designing the courses to help them create accessible content. And that's it [? for ?] my presentation right now, so I'm going to hand it on to our next presenter. Thank you.

KEITH JERVIS: Hi. This is Keith Jervis. For today's discussion, I [INAUDIBLE] hidden disabilities at the World Campus and compared these also with our University Park campus. As Michel mentioned, autism spectrum disorder, and I categorize that with mental health disabilities for the examination for today's discussion. What's important to note about either of those is that they may impair social functioning.

We also have a number of individuals experiencing traumatic brain injury and neurological impairment. This is certainly prevalent among some of our returning veterans. And the most frequent category of disabilities generally found on a brick-and-mortar campus is a learning disability or ADHD.

So what differs in terms of the hidden disabilities at University Park and our online environment is the way in which they're distributed. At University Park, for example, the largest single

category of disabilities are students having a learning disability and ADHD. And that's about 54% of our students with a disability, versus at the World Campus, it's about 26%. At the World Campus, the most frequent disability that we see are mental health disabilities and autism spectrum disorder disabilities, with those being about 34% of individuals in our online environment, versus about 16% at University Park.

What might be some of the reasons for those differences? Well, one of the reasons may very well be that people with a hidden disability or, excuse me, people who want to maintain some anonymity, that may have difficulty with social functioning, may tend to gravitate more towards the online environment.

Another reason for that may be is that the World Campus population tends to be a little bit of a nontraditional population of individuals that are a little older. And they feel more comfortable coming forward with disabilities such as a mental health disability, whereas our University Park students are certainly more traditional-age students, and may have more reluctance at that point to disclose some of these hidden disabilities, particularly a mental health or autism spectrum disorder.

We look at accommodations. Michel mentioned creating two different exam formats for extended time tests. And that's a very common, reasonable accommodation that students receive. It's really the most frequent one. About 70% of our students, both at University Park and the World Campus, do receive this accommodation. And that extends to individuals with hidden disabilities as well.

However, where things really differ in terms of accommodations are consideration for extensions to complete assignments. This accommodation is typically provided for students whose disabilities wax and wane in their presentation. And so for many of our students with psychological disabilities-- for example, a bipolar disorder, where they may experience a period of very high productivity and be able to get a number of things done, followed by a period of time where they're just not able to address any of their work at all. So for some of these students, having the opportunity to sort of address things when they're doing better and perhaps timeout for a period of time when they're not doing so well is often very helpful.

But the difficulty is that we are a traditional campus in the World Campus, in the sense that our courses are limited to 15-week semesters. We have a six-week period of time in which a person can take a deferred grade at the end of the course if they haven't completed the work.

But at the end of that time, that's really a deadline. And the grade then is required by the faculty member. So that consideration for extensions can become problematic as people back up.

So there's a significant difference, then, in the numbers of folks that are requesting this consideration for extensions, so that students who experienced mental health conditions, about 21% of those students at the World Campus are requesting this accommodation, versus 4% in our brick-and-mortar environment.

OK, so what does this mean? Well, one of the things that we are trying to do is to move from sort of being more reactive, or being reactive to students, to being more proactive with our students, and helping students, excuse me, to become more proactive, as opposed to reactive. A reactive student would be one that waits until there's a crisis, and then the student is, at the time of that crisis, contacting and disclosing a disability. Versus students who are proactive, who are disclosing, for example, at the time of admission and ahead of time.

So one of the goals of Terry Watson, who's our disability contact at the World Campus, is to move these students from being reactive to being much more proactive by helping them to be informed of our services. So what he's doing is working very closely with students' academic advisers to help them to key in on certain particular phrases that students might use or disclose, such as, it takes me more time to do my assignments, or I had an [? IET ?] in high school, for example, and then the adviser informing students of the services in Terry's office in disability services.

The other thing that we've been doing is a lot of faculty training. One thing that we initiated this past year is the requirement that all faculty include a syllabus statement informing students of the Office for Disability Services. We also have an online training program for faculty that is referred to as Online 1800. And it's a self-directed course including six common scenarios to familiarize faculty with meeting the needs of students with disabilities.

Now, the other presenters have talked a lot about some of the technical pedagogical things that you can do in the online environment. I've talked a little bit about the soft-skilled kinds of things that are often important, particularly for supporting these students who may have a mental health type of hidden disability.

Now, one of the things that we run into as a problem is that we don't have counseling services in our online environment similar to what we have here on campus, in University Park. So what

we do in those instances is refer people for services. And I'll be sharing with you a link to our campus counseling, which also offers links to community service providers for mental health conditions.

It would be important to have a code of conduct so that, particularly when people are doing group work, which is a large component, interestingly enough, of online learning, particularly in our [? IS ?] teenager, or Information Systems program, some of those courses required a great deal of group work.

Also, you may be online with an individual who is intimating that they may harm themselves. And so having some protocols in place to perhaps notify local authorities that this individual may be at risk of harming themselves would be important. For many of our students to succeed, it can be important that they take more of a part-time course load than a full-time load.

The difficulty is that that change in status can affect financial aid. So it's important for students to know what the implications of that might be, to work with their advisor and financial aid to find that out. And if they're working with a state VR agency, vocational rehabilitation, to perhaps ask for a waiver to any rules or requirements to progress in a certain fashion. Because for many of our students who have these kind of hidden disabilities, being able to participate part-time is really very, very-- it's necessary. It's a necessary accommodation. I think it's also important that you include a discussion with students about internet safety, for students not to post information that reveals too much about their identity, their location, and not to agree to meet with somebody that they've met online in a private location.

On the next slide, I've included some resources. The first two are specific to Pennsylvania. And as I mentioned, the first one is a link to our campus website for counseling and psychological services. From this website, a student in Pennsylvania could locate a provider in an area close to one of those 23 campuses that I mentioned. So there are locations throughout the state that a student could locate a mental health provider.

The medical assistance program for workers with disabilities in Pennsylvania has been really helpful for us when we've had students who, for one reason or another, didn't have insurances or other sources of support to seek treatment for a mental health condition, or any other medical condition. And they're unaware of this program office.

And many of our students, being nontraditional, also work. So in Pennsylvania, they may very

well qualify for this program. And in several instances, a referral to this program has enabled one of our students to seek treatment and get what they needed to continue in a course. The last three links I've included here are national organizations. The National Alliance on Mental Illness, and from this site an individual can find out a great deal of information about mental illness, about support programs in their areas as well.

Technology is often important to consider. Michel, again, mentioned that having books in electronic format is helpful for some students. One of the difficulties regarding that, for some of the students that we've worked with in the past, was that they may not have the software in their computers to then be able to read those electronic books. So this technology resource, these state lending libraries, are places where people can go in every state in the nation and try out assistive technology before they buy it. So it may be a program such as one that would read an electronic book. Or it may be one that would allow a student to dictate something aloud and then have it converted to text.

I should say that one of the solutions we've come up with for technology for our students in the online environment is, we've now purchased Kurzweil Online. In other words, we have an online license for Kurzweil software. And Kurzweil software, what that is is it's a character recognition software that will take print and convert it to speech output. And it also is pretty robust in terms of having a number of tools to help with study skills and doing research and a number of different things that are also part of the Kurzweil software.

So now our students that are in our online environment, we can give them a license to Kurzweil. We can upload books to their Kurzweil space, and they can then read those electronic books as a result of having that Kurzweil license.

And lastly, I've included the State Vocational Rehabilitation agencies. And these can often be helpful for students who are experiencing difficulty. The goal of vocational rehabilitation is to assist individuals with disabilities in preparing for employment. So if your students qualify for these services, they may receive some financial assistance. They may receive some assistance in terms of technology. And in some instances, they may receive assistance in paying for therapy and treatment.

All of that's up to the particular state agency. And many of them are experiencing financial constraints, and therefore they've gone to what's considered to be an order of selection. So some of your students might not meet that order of selection. But it's still worth their while to

apply. And in many instances, too, they will provide evaluations of the disabilities, such as a psychological evaluation to determine a learning disability, for example. OK, I'm going to turn this over to our next presenter. Thank you.

KRISTEN BETTS: I'm going to [? jump in ?] quickly to let you know that the chat function is open. We've had a number of people already posting questions. We've asked our panelists to jump in when they can, to post responses. We will be opening up for the chat and question session in just a minute, after Cyndi wraps up her overview and provides you with her resources. But please go into the chat area now if you want, start posting your questions, either for specific panelists or for the panelists as a general body. And we will be getting to those in just a minute. So, Cyndi, I'm going to give the mic back to you. Thank you, Keith, Michel, and Kelly.

CYNDI ROWLAND: And thank you, Kristen. And I'm going to do what I can to talk really quickly so that we can get to the interactive part at the end here. You know, one of the things that strikes me as I listen to our other panelists is just the importance of you guys hearing the same message over and over again in a lot of different ways.

And I think that's actually what's been happening today. So it won't come as a surprise to you that you'll hear some of the same themes that you have already heard, but maybe coming in a little bit different way, maybe from my area, which will be more of a technical angle.

And really what I wanted to start out with is just a quick reference to where it is that you all, each of you, get hung up on web content, because I think that when we have some of our own issues, where we're busy, we're not looking at things, we're stressed, we're pressured for time, we make errors. And there are websites, web designs, web content, that can aid in that frustration or the inability for us to execute that which we would want to do on a web page. A lot of times, thinking through those, for you, can help you as you move forward in creating content that's going to be a little more friendly to users.

Certainly, for me, it frustrates me to no end when the navigation schema is inconsistent. I go from one part of the site to the next, and I have to figure out all over, now, where's the search bar, now what's the structure, now how do I move to the next. It gets really frustrating. Sometimes if you think about how you interact with forms, there are some forms that are frustrating. For me, it's typically that I fill out a form, and I hit Enter, and it tells me I have an error, but it doesn't tell me where the error is. And it wipes everything clean, and I have to start over again.

So again, thinking of the kinds of things that are irritating to you is actually a very good first step in thinking through not only the personas that you've heard about from Michel, but really from everybody else that has been talking today.

I would want to just caution everyone to think about the students. And don't think about the label. I don't know that it's really helpful to necessarily say, oh, I have a student with a learning disability, and so I'm going to do this, that, and the other thing, because not all students with learning disabilities have exactly the same profile. For some-- and I've listed some here. For some, students with LD have intense problems with verbal comprehension, with visual processing-- you know, looking at a page and figuring out some of the structure, what goes where, what's happening. Some have real issues trying to solve some subtle problems of how they're getting from one place to the next. There's lots and lots of different ways that any of these hidden disabilities manifest.

So to the extent that you can, it's really going to be important for you to think individually about the student. But, as I say at the bottom of the page here, please remember that we really, at this point, don't have universal recommendations. And I'll give you an example here. You'll hear me say in a couple minutes that for some students, it's really wonderful that they have a multi-modal experience-- that to the extent possible, that you pair pictures or videos or other kinds of icons to help with content comprehension.

But please remember that the second that you've done that, you may have now further added a barrier for someone that is struggling with distraction and distractibility. So we can't fool ourselves, thinking that somehow there is a panacea, that if we do these 13 things, that we have taken care of the needs of folks with hidden disabilities, because it's just simply not true.

So I would like to, as we move to the next slide here, ask a quick series of questions. So if you'll go to your little poll, I'm really interested. It looks like we've got about 269 people at this point. If you could answer yes/no, how many of you are in the midst of tackling web accessibility right now? And I'll just wait and see what you will all say.

I love hearing all the ding, ding, dings. And I think my view must be funny because it looks like there's 900 and some that have responded, which could not be true. I'll wait just, like, 30 more seconds, maybe. Maybe not that much. All right, well, it's starting to slow down here. So certainly the greatest number are those of you that are in the midst of it. Some of you are not or are just kind of starting.

And of course, unfortunately, the greatest number of folks that did not respond at all. But this is very helpful. OK, here's the next question. So for you guys that answered yes, that you are, in fact, working on some accessibility issues here, how many of you-- and I'll assume that our n here is 109. So if you answered yes in the first question, answer this one. How many of your are searching with what it is that you can do for students with hidden disabilities? And we'll go with a yes or no.

Some of you may, frankly, feel like you've got a good handle on it. The reason that you would say no isn't that you don't want new information, but that you feel like you've already got information that's actionable and that you can move on. OK, this is very helpful. And I'm going to really encourage those of you that said no-- and I'll kind of assume it's because you have some information already-- that you participate in the chat and help everyone as this discussion goes forward.

All right, I've got last two questions. And you can, Christian, or whoever is paneling this, you can shut that particular little poll down now. The next question is, how many of you guys are a faculty member pushing out online content in the form of classes? Wow, it looks like we're pretty evenly split, almost. Oh, for those of you that need to know where the little poll is, it's the little check box towards the top. You'll see yourself under the Participants screen.

So it's split, pretty much. And then the last one, the last question I wanted to ask is, how many of you would you consider yourself technical staff-- web developers, other technical folks that are helping faculty or helping vendors, what have you? OK, this is going to be some good information for me. And then we will move along, and I'll get this-- all right. Wow, quite a few of you. So it looks like we're about two to one on technical people to non-technical people. I won't call the rest of your non-technical people. But you know what I mean. That's not your primary assignment.

OK, now I'm going to head back here to the slide itself. And I want to just make the point that there really are three levels of support here. So the first and the second level of support for students with hidden disabilities is what it is that we can do before the student comes to our course material or our content.

And that happens, actually, at two levels. One is what the faculty members do in how they are creating the content. And the second are the technical aspects, and how those are designed and developed. So we've done that now. We've done everything we can on the front side. The

student interacts with the content, and then we get to that third level of support. There will always be a need for some accommodation. There will always be a need for some support that has not been thought of. So please remember that we've still got an obligation to do everything we can on the front side, and there will still be needs for some support. So it's not a binary thing that we can get it all taken care, nor should we leave it all to when a student is encountering a problem.

On this slide, I just want to make the point that we have to make sure that everything is accessible, natively accessible, and there's a lot of standards and guidelines. And I am going to be talking more to the technical side of the house here than the rest of you guys. But there are guidelines about what that means, the W3C's web content accessibility guidelines. 2.0 is a perfect example. Go there. Some folks are looking at Section 508, which is being refreshed as that jump-off point of technical guidelines.

We've heard the previous speakers talk about user-centered design as well as universal design. And somehow my slide had both of those on there, and it just didn't end up displaying here. All of the things that you see on this particular slide are in fact things that you've heard about before. So if you're a teacher, if you're a faculty member, make sure that you're doing things like chunking your content. Make sure that you're doing everything you can to reduce distractions or understand which students are going to need a little more time.

Most importantly is, for those students that are using assistive technology, or I'll call it AT, understand how that works. For some assistive technologies, it just simply reads content. For others, it highlights individual words, or it even highlights and moves through sentences to help bring their attention to what it is that they're reading. And that can be a help.

But understanding what that looks like, if you have a private conversation with your students, if you were to ask them to show you, or ask someone from your disability resource office to show you, how their specific assistive technologies work, that's going to help you immensely as you're thinking through what it is that you can be doing for that student.

All right, if you happen to be a technical person, so I'll say web developers, you want to think through the issues. You know, gosh, what if folks have memory problems? What if they have problems with visual comprehension, verbal comprehension? And you want to make sure that everything is accessible to the standards that are available now. Again, WCAG 2 is a wonderful place to start.

I've got two slides that have main headers here. And I know we're running short of time. So I'm not going to pull out some examples of each of these. But if you don't know what it means for your code to be compatible and to conform within these assistive technologies, design to standards. All of these things have to be happening.

The next is making sure that everything's consistent, all of the elements. And actually, I've got to say I should've mentioned this on the previous slide, of what a faculty member can do. But are you aware that if your links are-- right now, the de facto standard is that on the web, a link is underlined.

So if you're a faculty member and you're also using an underline to bring attention to words or concepts, that that might confuse the user. Someone might think that those are actionable links as well. So that would be one example of how you need to be internally consistent as well with interaction elements, form fields, all this kind of stuff.

For those that are coding up content, make sure that you're providing semantic structure. Headings, bulleted lists, ordered and unordered lists are used very successfully for different purposes. But know why you're doing it.

Make sure that everything really can be transformed. What happens a lot of times is that the user, the student, needs to interact with the content differently than you've created it and then that you have displayed it. So they may be enlarging the text. They may be disabling all of your styles. They may actually be disabling all images because that poses too much distraction. They may linearize it and basically render a text-only version because that's easier. Or they may take everything to a visual contrast that helps them-- black background with yellow text.

So make sure that the user can fully take control of your content and transform it in a way that it's not going to break and you're not going to end up by losing content. I think about the importance of alternative text behind images, charts, graphs, things like that, that would then be read instead of viewed as an image.

And I'll mention what I said before. It's really wonderful to be multi-modal because it can aid in comprehension. Think of yourself on a foreign language site. A lot of times, the ways that you figure out what's supposed to go with what is the full environment, the full context. Some of our students, frankly, are feeling like they're in their own little foreign language with some of our

content. At the same time, recognize that, for some students, the ways in which we're providing these multi-modal bits and pieces, that adds some distraction for them. And let's see-- this is my last-- uh-oh, wait a minute.

KRISTEN BETTS: A quick--

CYNDI ROWLAND: There we go.

KRISTEN BETTS: --reminder that the chat is open, because we've got just about 10 minutes left. So as Cyndi's wrapping up this slide, she'll share the next slide with a link. If you want to go into the chat area, that would be great. Thank you so much, Cyndi, and we'll start the questions as soon as you finish this slide and show the next one.

CYNDI ROWLAND: Yes, and I'll do this really quick. Web developers should really think about how to focus attention to important content and how to make sure that we're not distracting away from important content. So sometimes the use of white space can help provide focus for folks. You don't want to use fully justified, right and left content, because then you end up with a phenomenon called rivers of white, where students get lost in white columns, and they can't quite get to the content.

But think about how you can use your visual styling to help bring the focus to it, and how it is that you can eliminate movement, that it can be distracting. So those banners, as an example, or a flashing arrow pointing at something, you may think, well, that's good, that's going to help provide focus. But it can also distract. So these are issues.

We've talked about the user control already. But make sure that the time-based elements are also in the control, unless you can't deal with that. Think of going to a banking site, and you barely get into what you want and then, boom, you're prompted and kicked out.

Keeping language that is clear and simple, that is very readable, is important. And I'm not going to go into this, but WebAIM has some resources on what this all means. And then the importance of preventing errors from even occurring, but if they do occur, that there are some recovery methods for the students.

And I'm just going to go right now to my last slide for resources. WebAIM has a lot of resources. I'd encourage you to go there. WAVE, which is the web accessibility evaluation tool, and it's just freely available, also evaluates many of the elements that pertain to cognitive learning and hidden disabilities. There's a wonderful CSUN presentation. You might want to

look.

And then the last thing I'm going to mention, and I really didn't get a chance to get to this, but our US Department of Ed's project that was looking specifically at cognitive disabilities, frankly, found that there isn't one set of recommendations that we can provide to all web developers, and that we really are going to need to figure out ways to individualize for users. I think we are all aware of the fact that a lot of information is going into the cloud, as are useful helps for people with disabilities. I would encourage everyone to look at this YouTube link that describes the efforts of the GPII, the Global Public Inclusive Infrastructure, as a way to deliver to users that which they need, and that they customize, for their user experience. I think that that's the future, guys, and those are important things that we need to be thinking through in post-secondary ed. OK, Kristen, I'm going to give it back to you.

KRISTEN BETTS: Cyndi, thank you so much. And if you can tell from our speakers, we could have done a whole half-day symposium or full-day symposium by bringing them together just to speak in more detail about their topics. If you go to the chat room, you are going to see there are a lot of questions that have already been asked. There are responses by several of our panelists.

I'm going to have Zeren share information about how you can get access to the presentation. The PowerPoint will be available as an RTF file, a PDF file. You can also access it as a Word file. There'll be an archive to the link. Some of the questions that have come in have to do with personas and whether Dr. Miller is able to share a full spectrum of the personas that they work with. I'm sure she's going to be able to do that. Kelly Hermann has some wonderful links she sent to me as well to post in terms of what they're doing, particularly with veterans.

So I'm going to turn it to Zeren now to look at some of the questions. But please make sure, as we go to this next slide, you have access to resources. So outside of the plenitude of resources in the list, contact individuals and ask them, specifically, what your questions are. So, Zeren, I'll give it to you, and you can look at some of the questions for the panelists.

ZEREN EDER: Well, I think Kelly and Cyndi did a wonderful job of taking all the questions. And I don't really see a question that they haven't addressed. If there is any, please rewrite in the chat so we can, because I've been copying and pasting them. And they have answered all the major ones about personas. And that was mostly the topic.

So if there are any questions that are unanswered, please do put them in the chat right now,

so we can address them. Molly has a question for Keith. She says, "You mentioned PT discussions with financial aid staff. Can students get a PT status approved if they have a documented disability?" Would you like to answer that, Keith?

KEITH JERVIS: So if I understand the question, the conversation that I referenced with financial aid staff? Yes, it would be good for the student to let them know that there may be some relief from that. However, Pell grants and federal grants such as that have certain requirements that the student may not be able to meet as a part-time status.

However, there may be other forms of financial aid that the student can explore. So, for example, students in our online environment also qualify for scholarships that are available through our office. So that might be an alternative for some student who needs to progress at a part-time schedule. Thank you.

ZEREN EDER: Thanks, Keith. And I see Adina has a question for Cyndi, "Could you say something about the balance between web accessibility best handled by faculty versus--" this moved a little bit-- "versus IT, for example, and experience with which way works best for making PDFs accessible?"

CYNDI ROWLAND: You know, I have to say, I didn't get that whole question, and the chat's going so quickly I didn't read the whole thing. So let me give that to you again. You're wanting a quick discussion on the balance between accessibility standards, kind of writ large, those that we've grown to know and love with the W3C and cognitive disabilities, is that correct? I don't yet see a yes or a no. So I will answer that as if it's a yes, and correct me if I'm headed in the wrong direction.

The things that make content accessible for all individuals with disabilities need to be followed when you have folks that have hidden disabilities as well. It's the basis of most assistive technologies. But the dilemma is, as I said earlier, that sometimes some fixes that we make provide a disadvantage for some students. And that's why we've always got to, at the end of the day, make sure that we are engaging in some personalized experience for some students.

In terms of PDFs, you would want to use exactly the same kind of transformations in making sure that PDFs are fully accessible. One of the reasons I say that is that some of the assistive technologies-- for example, if the PDF isn't tabbed and structured correctly, and let's pretend it's in a two-column format, it might read the first line of the first column, and then instead of wrapping around within that document, it might hop right over to the first line of the second column.

So that would be an example where the assistive technology that someone would use to help them just visually, and in terms of their literacy levels, get through the content, but if everything we're tagged the way it should be for accessibility, for a screen reader, for someone who is blind, that wouldn't even be a problem. So all of the recommendations that are present for other folks need to be implemented for those with cognitive and hidden disabilities. I hope that answers it.

ZEREN EDER: Thanks, Cyndi, Thanks for the information. Unfortunately, although we have more questions, we are running out of time. So I will have to wrap it up now. But please do continue discussions using this access Sloan-C hashtag. I'm going to put it right here on the chat window. And you also have the contact information for our panelists. I'm sure they will welcome any questions that you might have.

And to wrap it up, I would like to thank Dr. Betts for her efforts and time for the organization of this whole webinar series. We are very inspired by her enthusiasm and passion for this topic and feel very privileged for having worked with her. And thanks to our panelists for taking the time to be part of this. And finally, many thanks to all of you who joined us today and enriched our discussions with your questions and comments and helped us draw attention to this very important topic.

As I have been mentioning, all participants and also registrants in today's webinar will be receiving a follow-up email and a recording link. But no materials will be attached to that email. The materials will become available on our website within a few days for all four webinars. And we will also be following up with a survey to get your input and feedback, which is very important for us. And I'm putting that in our chat window as well, and that will be in the email.

And I would also like to take this opportunity to highlight some upcoming Sloan-C events that you might be interested in. Our workshop schedule is available at sloanconsortium.org/workshops/2013schedule. And since you have shown interest in this webinar, you might also be interested in our half-day workshop on July 24, which covers some easy course enhancements to improve accessibility of your online courses.

You can find upcoming webinars list available at sloanconsortium.org/webinar_listing. And there's also a link there to the webinar archives, where the materials for the webinar series will be available. Our next conference is 10th annual Sloan Consortium Blended Learning Conference and Workshop on July 8 and 9 in Milwaukee. And the link will take you to the

registration page.

And with that, thank you again, once more, for joining us. And I hope to see you in other Sloan-C events. And to wrap all up, I want to thank again all of our presenters, sponsors, Sloan-C, you online participants, and for making it to become a success, and especially Kristen Betts again. I cannot emphasize enough. Thank you.