LILY BOND: Welcome, everyone, and thank you for joining this webinar entitled Implementing Universal and Inclusive Design for Online Learning Accessibility. I'm Lily Bond from 3Play Media, and I'll be moderating today. I'm joined by Howard Kramer, who is the Access Specialist and instructor at University of Colorado at Boulder. And I'm also joined by Sheryl Burgstahler, who is the Director of Accessible Technology Services at the University of Washington. And with that, I will hand it off to Howard and Sheryl, who have a wonderful presentation prepared for you.

HOWARD KRAMER: OK. Well, welcome to this webinar on Implementing Universal and Inclusive Design for Online Learning Accessibility. As Lily said, I'm Howard Kramer. I work at both AHEAD-- the Association of Higher Education and Disability-- and the University of Colorado at Boulder, and I've got both my emails up there. And the reason I mention both organizations is that the resources that I'll be showing in this presentation today, particularly my part of the presentation, and many of the slides were developed in projects I've done for the University of Colorado, specifically a project I did for continuing education to develop resources for making online courses accessible, and to meet universal design criteria.

So I thought they deserved to have their logo presented at least once in the presentation. And as Lily mentioned, I'm joined by Sheryl Burgstahler. She already mentioned she's a Director of the Assisted of Technology Services and the Director of the DO-IT Center. And she's involved in many projects involved with information technology, higher education, and she is an expert on universal design. And I should clarify that, especially universal design for learning.

So universal design, whether we're talking about universal design for learning or universal design for the web or for the built environment, particularly universal design for learning can be a tricky topic to talk about, because it covers two distinct areas of expertise, I would say, both pedagogy, teaching strategies, and also the design of accessible course materials. With that in mind, we're taking a two-track approach today, or two-person approach, to this topic.

Sheryl will talk about the pedagogical side of it, and I'll focus on the creation of accessible course materials. Sheryl will begin first with providing a high level overview of universal inclusive design, and what it means, and how it's applied in the online learning environment. I'll then talk about the creation of accessible documents and media. And then Sheryl will go into greater detail about strategies for inclusive pedagogies. And then both of us, finally, will talk

about resources you can use to review and go deeper into this topic after the presentation.

I should mention that in my part of the talk I will get somewhat into the weeds with specific processes for checking and correcting the accessibility of documents, such as office documents and PDFs. But I won't be doing too much of that. Since our time is limited, I'll really only be able to scratch the surface on this topic. But in the resources portion, we'll provide links to other tutorial resources, including videos, that you can use to continue what we've covered here today. With that, I'm going to hand it over to Sheryl.

SHERYL BURGSTAHLER: Thanks, Howard. On the next slide we have a list of post-secondary institutions, University of Cincinnati, Youngstown State University, University of Colorado Boulder, University of Montana Missoula, UC Berkeley, South Carolina Technical College System, and so on. Over 15 schools here. And I'm asking the question, other than being post-secondary institutions, what do they have in common?

And if we were in a live presentation and on-site, I'd ask for some ideas about that. And some of you may know that all of these institutions, or networks of institutions, have had a visit from the Office of Civil Rights or the Department of Justice. And the complaint has been a civil rights complaint because of the inaccessibility of their technology, including online learning, which could be inaccessibility to individuals who are blind and individuals who are deaf. So we need accessible documents, captioned videos, and so forth.

But what basis is this on, the complaint? What is the complaint? What does it rest on?

In the next slide, there are three issues to consider as far as the legal cases in this case. And so in the next slide, the first one is the Rehabilitation Act of 1973. So that's been around for a long time, and that legislation is mentioned in the civil rights complaints.

So it's gone back a long way, before the internet was even mentioned in any legislation. And so it's a broad legislation, civil rights legislation, that ensures the accessibility of whatever we provide in our public services, particularly at post-secondary institutions, to individuals with disabilities. The one that we know the most about is the Americans with Disabilities Act of 1990, and its recent 2008 amendments. And then there are state and local laws that sometimes are even stricter than the other two.

So there's legislation that's been around for a long time that doesn't specifically talk about online learning, but talks about making programs and services accessible to people with

disabilities. So let's look on the next slide at what they actually say about accessible. Often when we think of accessible, we think of something like being in a remote area and getting access to the internet. But accessible in this definition is much more specific.

So in all of these legal cases, "accessible," in quotation marks as the defined word, means a person with a disability is afforded the opportunity to acquire the same information, engage in the same interactions, and enjoy the same services as a person without a disability in an equally effective and equally integrated manner, with substantially equivalent ease of use. The person with a disability must be able to obtain the information as fully, equally, and independently as a person without a disability. And the next slide actually has this wording.

I spoke the wording because it's so specific. Often people say, well, what does that really mean? What does it really mean? And they are frustrated because we don't have technical specifications to exactly make this possible, this definition. But the definition of accessible just basically says that a student with a disability-- who is blind, who has dyslexia, who has a mobility impairment, who's deaf-- should be able to access our online learning courses and other offerings at our institutions in the same way and with the same responsiveness and the same integration as other students.

The next slide just underlines the idea that we have a very diverse student population in all of our courses these days. The pictures on the right are all of students who have disabilities, some of them obvious, some of them not. But other types of things we need to consider is just communication skills in general, that may be due to a disability, it might be due to a different language set of skills, but culture, marital status, ability to attend, learning abilities, sexual orientation, ethnicity, interests, these are all different characteristics of students that we should assume are in our classes that we offer online.

They have different levels of intelligence, sensory abilities, interests, physical abilities, values, social skills, family support, learning styles, age, socioeconomic status, religious beliefs, race, and gender. And we should assume all of these individuals with those characteristics could be in our class. Now if we drill down a little bit more specifically and deal with the level of ability, or in some case defined as a disability in the next slide, we're all on a continuum. A continuum from the left-hand side of this arrow, which says not able, to the right-hand side, which says able.

All of us have a certain ability to see along this continuum. Years ago I had an exceptional

ability to see. So I was way off to the right-hand side of this arrow on this slide. And now I am slipping over to the left-hand side. I am still able to see, but I need to use a contact lens to see text to read. And so that ability level can change over time.

And those of us that are providing an online course don't need to worry so much about the legal definition of disability that might say a person's blind, or legally blind, or low vision. We just need to know that everyone is on the continuum somewhere as a part of their ability to see. Similarly, the ability to hear, walk, read print, write, communicate verbally, tune out distraction, learn, manage physical and mental health, all of those are skills or abilities that appear on the continuum somewhere.

So on the next slide, if we're to provide access to people who have this great variety in terms of ability, but also other characteristics that are represented in the circular image, there are two approaches. The first one, and the one that's most commonly used on our post-secondary institutions, is accommodations. Things that we provide after the fact when a student with a disability enrolls. So extra time on tests or sign language interpreters, things like that would be accommodations.

The other one is universal design, or inclusive design. And so what we're talking about today is this category of proactive ways to make our courses accessible. Both are important. On the next slide, we have the most common accommodations, and this is using data from my institution, the University of Washington.

And the first most common accommodation in an online course for students with disabilities is creating accessible documents. In other words, transforming or reformatting PDF files. 26,000 pages each quarter we're converting. And Howard is going to talk about how you can make an accessible file, so I'm not going to speak but that here. But keep in mind, that's what we're trying to prevent, having so many inaccessible PDF files that have to be converted.

The second big expense is for captioning videos. And Howard will talk about a bit about that as well. But it's costing us, at our institution, about 55 hours of re-captioning videos, that's over $10,000 a quarter and it's increasing as more and more faculty members capture their lectures via video. The next slide suggests that rather than relying totally on accommodations, let's think for a minute, and certainly during this presentation, about designing the course to be more welcoming, more accessible, and more usable by a broad audience from the beginning of making the design for that course.

In the next slide, we have an image about universal design. But on the left-hand side of the screen, I've provided a list of proactive ways to deal with accessibility. Some of the terms commonly used are inclusive design, barrier-free design, accessible design, usable design, design for all, universal design, and the list goes on. All of these approaches are similar. They're about from proactively designing something to be accessible to everyone.

Universal design is arguably the most general one and the most inclusive one. And it combines making courses accessible, usable, and inclusive for the broadest audience possible. So the next slide actually gives us a definition of universal design. These other characteristics, these other definitions would be similar, but we're going to just use universal design to make this presentation as simple as possible.

But that universal design definition comes from the Center for Universal Design, and it is, "The design of products and environments to be usable by all people, to the greatest extent possible, without the need for adaptation or specialized design." So the idea of universal design is to be proactive in our thinking in an online course to make it accessible to the greatest number of people that might take our course, but needing at some time, perhaps, of providing an accommodation. But it would keep that approach to the minimum.

The next side provides a little summary and a segue into what Howard is going to be talking about next. So if you're applying universal design to online learning, you should be thinking about providing multiple ways to gain knowledge, interact, and demonstrate knowledge, because, again, we have students with so many different characteristics.

In the later part of this screen, to get into more detail, you should provide multiple means for representing things, content in your course, for engaging students in your course, and then for action and expression. And this is from the Center on Applied Special Technology-- CAST. These are their three principles of universal design for learning. Now I'm going to turn the presentation over to Howard, and he's going to talk about how you could apply these principles to documents and other media that you're using in your course.

HOWARD KRAMER: So I'm going to talk about a little bit, I guess, the technical side of it. So the next few minutes I'm going to talk about methods for making your course documents accessible to persons with vision, print, mobility, and cognitive disabilities. And I think you'll find there's-- at least I found-- that there's significant overlap between many of these areas. What makes a document accessible for a person with a vision disability, for example, making sure that it's keyboard

accessible and well organized, that also assists other disability areas as well. And in fact, coming back to our theme of universal design or inclusive design, it makes them more usable and effective by all students.

Excuse me. So Sheryl mentioned the problems of inaccessible PDFs, and I guess, the PDF that causes the most problem is a PDF that's an image-only PDF. In a sense, this is a picture of text and not true computer text. Screen reader users are completely locked out of these types of documents.

And on this screenshot here, I sort of show a clip that shows you a method to help you figure out if a PDF is an image-only PDF. So if you try to copy and paste text from a PDF, let's say, into a Word document, and you don't get any text, that pretty much indicates that it's most probably an image-only PDF, and if you get, let's say, a lot of garbage into when you do your paste. In PDF documents, the appearance of a document doesn't always match the text that's actually in it. So if you see a lot of garbage, it means the actual text that would be conveyed to assistive technology is not correct and it needs to be worked on.

So one other way to quickly check the status of a PDF is to also see if when you try to select texts if it seems to find the end of words. Does it highlight across the full line? We see on this slide here that it doesn't really have a sense of where the lines are, because it's not seeing text, it's just seeing pixels, an image of text. So again, this is another indication.

And of course, having real text in a PDF is only the first step. We also want to make sure that we properly structure our document with headings. And we'll talk more about this more in the context of Word documents in a minute. We also want to make sure that our images are described. And we want to make sure that we have what's called a tag PDF.

So whether we're talking about a PDF, or a Word document, or a web document, the key to document accessibility is structure provided through properly formatted headings. Another way to describe this is that we use headings to organize and provide navigation to the content of the document. The headings act as a kind of outline for the document. You could see this in the slide. Well, you can see in the slide that we designate headings in Word through styles from the Word ribbon.

You don't want to rely on visual cues alone, such as setting text in a large font size, using color or boldness alone. We want to properly structure a page with headings. Because this also provides important metadata to other computer technologies, such as search engines, so that

they understand the organization of the page. And this also includes providing navigation cues to blind users who use screen readers and people use other assistive technology. I also say-- again, coming back to the theme of universal design-- that it provides a structure to format pages properly on different devices and window sizes.

So in this slide, I'm showing that the title of your document, the analogy to a book would be appropriate. Section, or the book analogy chapter pages, should be designated at heading two and subheadings, heading three, and so on. The headings do and should form an outline to the page. In other words, what appears in a heading three should be a subtopic of heading two above it, and so on.

So how do you know if you have a proper heading structure in your document? So there's a couple of ways to view and check the hierarchy of a document created by headings. One is to use outline view. We can turn on outline view by selecting View from the menu and then outlining, as shown in this slide.

In this slide, heading one is shown as the top level and the largest font. And the heading two items-- objectives and instructions-- are shown as subsections. And then these subsections are further divided and structured into bullet points and number lists respectively. So formatting documents in this matter adds structure, organization, and readability to documents. And this is for both the visual and non-visual user.

And this image here shows another way of checking the navigation or the heading structure of your document, and that is to try to turn on navigation or activate the Navigation pane. And again, this is done through the View option of the menu and then by the checkbox on Navigation pane. And again, this not only serves people with vision impairments, but for anyone using the document.

With the Navigation pane, we can create an outline, as you see, that's navigable. So even a visual user can look at this, see the contents that are in the document. They can select any of these items listed here on the left and immediately jump to that place in the document. So again, I'll use the mantra of universal design. This makes the document more usable by everyone, all the students who might be accessing this document.

So in this slide, I just wanted to show, again, another advantage of using head things. Now we don't select styles only because of the way they look. In other words, we don't make something a heading one or a heading two because we like the font size or the color. We want

to apply those headings where they actually fit semantically, as I've been describing in the last couple of slides.

But when we do that with word styles, we're also creating a document that's more easy to follow visually. So compare the document on the left with the one on the right, which doesn't use a heading structure and hasn't really used very much in terms of formatting to distinguish the headings or the major topic areas of the document from the actual text. All readers find it much easier to scan information when we have a heading structure, when the document is segmented with white space, where information that belongs together is grouped together. So again, the document on the left would be much easier for anyone to access.

And one thing I haven't mentioned regarding assistive technology is that the key thing about headings is that the screen reader user has commands within programs-- such as JAWS and NVDA-- that allows them to jump from heading to heading, to know which heading level it is. So anyway, the headings are a key navigation tool that we can provide to assistive technology users, especially those using screen readers.

Also, another thing to mention is that when we want to create an accessible PDF, a best method for doing this-- if we're creating our own PDF documents from our own material-- is to create a properly formatted Word document. The headings will transfer over [INAUDIBLE]. So we want to start with an accessible Word document before we try to convert that to a PDF.

So I'm also going to mention, as a kind of a pedagogical approach, there's something else wrong with the document on the left. And I'll wait until the question and answer. I will cover the issue in subsequent slides. But see if you see anything in the document on the left that you find problematic in terms of usability and accessibility. And someone can try to answer that during the question and answer.

So moving on to images. Probably the most well-known or ubiquitous feature of accessibility is the use of alternate text or alt text to describe an image. So for every non-text element-- such as images, charts, or graphs-- we want to provide a concise 100 character, 120 characters description of the information conveyed by the image. And again, screen reader users and other computerized technology use this information to understand the information conveyed by the image.

So this next slide shows the location of the tools and outlines a process for entering alternate

text in Word. To start we would right-click on the image or use Control-mouseclick if we're using a one-button mouse on the Mac. In Word we would select Format Picture and then the Layout and Properties option.

And then we would enter our alternate text in the description area. You can enter text in the title area, but that is not provided through assistive technology-- such as a screen reader. So we want to make sure we provide the key description within the description area. And the process in PowerPoint and Excel is pretty much almost exactly the same. Some of the submenus are labeled a little bit differently. But if you learn the process in one of these programs, you'll know it in the other ones.

So this slide introduces the topic of the accessibility checker in Word, which is a very effective and easy-to-use tool to check and [INAUDIBLE] accessibility and usability issues in your Word documents. And again, as with the alt text tool, a very similar tool is available for the other Office products, particularly PowerPoint and Excel.

For myself, I found that even if you know the things to check for, this is a really helpful tool. And it's directed me to problems, such as extra paragraph returns, that I might not have thought of before in terms of being problematic. So it really, I would say, is an invaluable tool. And also, if you're new to this, it really guides you step-by-step through the process of checking a document for accessibility.

So just let me give you a tip for how you would use this and how you would access this tool. You would go to the File menu. And by default, you'll be under the Info menu, at least in the Windows version. You would start select Check for Issues and then Check Accessibility from a dropdown menu that's shown here on the screen. And then an inspection report will then be displayed. And I've got an example of an inspection report here on this slide.

So in the accessibility report the inspection results are divided into errors, warnings, and tips, although tips are not shown in this particular screenshot. So errors are serious issues that need to be corrected. They will block out many users from accessing content in the document, especially those using assistive technology.

Warnings are also issues that should definitely be remediated. And they will make it difficult for some users of assistive technology, or some users with disabilities, to access the content. So tips, which are not shown here, it doesn't really make a document inaccessible, but if you correct those issues that are brought up in tips, it'll make your document easier to use and just

make it more usable overall, I would say, for everyone.

The very useful thing about this tool is that, also, if you select any item in the report lists you'll get an explanation of a problem, and also particularly what that problem causes for particular users. And then you also receive steps for correcting the error or warning. So again, it's really a step-by-step guidance for correcting your document.

So I just wanted to check the time. So I just wanted to quickly review some accessibility tips for PowerPoint. We want to use the built-in designs and slide layouts in PowerPoint. We don't want to add text boxes to a layout.

And the reason for this is that the built-in designs and the built-in slide layouts are designed to be accessible. That should all be read by assistive technology, for example, such as a screen output device. If we start adding our own text boxes and creating our own designs, there are ways to make it accessible. But if you're not really knowledgeable in this area, it's much more likely that you'll make your information inaccessible.

So one way to check to see if the content in your what we call normal view slide view in PowerPoint is accessible is to turn on the outline view and see if all the text is visible. If you see text that is missing in outline view that's displayed in the normal view, that means you have some inaccessible text in the document.

Again, as I've I mentioned with Word documents, we want to provide alt text for images. The process is the same, as I mentioned. We also want to run the accessibility checker. We want to use high contrast text or high contrast foreground-background combinations. So we want to make sure that the text against the background has a sufficient color contrast. And there's many tools for doing this.

One tool that I particularly like-- which I think I forgot to include, I meant to include it in the resources-- is the Color Contrast Analyser by The Paciello Group. It's a free tool. It's very interactive.

You can select any text on your computer screen. It doesn't have to be a PowerPoint or a Word document. Anything that appears on your computer screen, you can check for its color contrast. And it provides you a tool for selecting a higher contrast combination.

So some other tips. And I am going to try to finish, at the very latest, within another two

minutes so that Sheryl has a chance to go over her part. So some other tips, we want to avoid using all uppercase text, often called "all caps." Research has shown that reading all caps slows down the reading process. There's a debate over to why, but the research is consistent that it does have that effect. We again want to provide sufficient color contrast.

And we also want to make sure that the background we use, especially for text, is not busy or in any way undermines the legibility of the foreground text. We can see an example here-- this is an actual background I selected in PowerPoint-- that definitely would inhibit reading of the text. So we want to have a very simple, non-obtrusive background.

And often I would say a common problem or a common combination that's problematic is either a dark gray on a light gray background or a dark blue on a dark blue background. But again, I would use the Color Contrast Analyser if you have any question about the contrast of some text.

We want to use descriptive hyperlink text. So we don't want links such as "click here" or "read this." We [AUDIO OUT] screen readers. And also people who are using large text might go from link to link. So we want to make sure that our links make sense out of context.

And so also captioning, again, Sheryl mentioned that as the other key issue. And captioning not only helps-- again, returning to the issue, a mantra of universal design-- it's shown to increase engagement and attention length for all students, not just students who are hard of hearing. So students who speak English as a second language, students who want to understand technical terms who do better reading the text will do better. So this is something that helps pretty much all audiences.

So another, again, sort of universal design tool is synchronized transcripts. And if you look on the 3Play site, the 3Play interface provides this capability to have a transcript that will highlight as it's read through the video, or that also acts as a navigation tool, or a means for searching through a video for a particular text. So again, this not only helps someone with a hearing impairment, but this just makes any sort of video or video library much more interactive and much more effective.

Oh, OK, so I see that I did get through this. And hopefully, I've given Sheryl enough time to cover this part of it. So I will hand it back to Sheryl.

SHERYL Thank you, Howard. I'm assuming you could hear me. OK. We'll take a look at what your

BURGSTAHLER: syllabus would look like. So let's step back and think about you starting your class. What would a universally designed syllabus look like?

First of all, it would be in a format that's accessible. And Howard's talked about how you can do that. But some other things, on the software side, I should be friendly, welcoming to students with a variety of backgrounds. It should be structured under subheads. And those subheads should be structured, as Howard mentioned.

But also, though, if you just glance at it, it should be a nice, logical organization, logically oriented, but also sections that aren't too long, accessible format, of course. It includes key information, instructor information. How can they find you? Make it clear if you have office hours, or how a student arranges to meet with you, and make sure that that's in multiple ways. Maybe they could be invited to meet with you by Skype, by email, by a chat system, in person, whatever, just make that clear.

Include a course description, include learning objectives, including those that are very specific to your course. Use action verbs. Say what the student is able to do. Rather than say, they'll be able to talk about accessibility issues, say, they will be able to list five ways a course can become accessible, if that was the topic of your course.

On the next slide, we continue with this idea about your syllabus. And the syllabus should include the target audience. You should assume that people already know that by the time they take the course. But I think in your syllabus, you should reiterate that. Maybe they looked at the title, but they didn't look at the target audience that was in the course description.

So on this next page here, it would be very specific about who the course is for. Like an online course on online learning, is it for faculty teaching a course? Or is it for designers of online learning? Or is it for technical people that are developing online learning systems, learning management systems, for example?

What kind of technical level do you require? What do they need to know about using their computer? And sometimes, this is overlooked. And you really have to hold yourself accountable for what you say as well.

If you say it's a low level of technical skills, then make sure you tell them how they can gain those skills that they might use in the course, if they should need them. Don't assume that they have much technical expertise. Remember, online learning can be taken by someone all over

the world, by older students, by people that use technology every day, by people who don't.

Also indicate if there's some content that's optional. I know when I teach an online course, I usually have some content that I think is really cool about the subject I'm teaching about. But it isn't really required for teaching that course.

And so make sure that it's clear that, well, this is an optional video for you to watch that you might want to look at. I always put optional in all capital letters, by the way, in the module, so that they know they can skip something if they get overwhelmed by the content or they're just not as interested as I am in my topic.

Be sure to share whatever the assignments are and grading. It's important to put your assignments in the syllabus. There maybe some exceptions to this, but they should be intentional exceptions and they have a good reason for it. If you put them in your syllabus, that means a student who requires more time can get started right away. I even like to put my syllabus up early, like a week early, so some students can get started.

Indicate how you're going to grade assignments overall. Include what is the required reading there, because some students, again, may want to read ahead of time. So don't give the reading assignments, at least all of them, within the modules. Give at least the major ones within the syllabus.

And include two statements about accessibility. The first one is a statement from you to the student that says something along the lines, I am committed to making this course accessible to everyone. Please let me know if there's a feature I'm using in this course that is not accessible to you and how we might improve it.

The second one is your standard disability related statement, usually from your disability services office, about how to get accommodations for your course. So that's what a good syllabus looks like. A universally designed syllabus is a good syllabus. So there shouldn't be anything too shocking here.

As far as teaching, kind of on the softer side, looking at pedagogy, in this next slide, I'll just go over some things. And some of them reinforce what Howard has said, and also things that I said in the introduction about universal design. So you'll want to teach using multiple mediums and with content relevant to all learners, so two different concepts there.

So can everyone access it? You offer variety. And do all learners relate to the content that

you're presenting? So the first item on this next slide is to basically assume, just assume, a wide range of skills and interests.

Some people say survey your students and ask them their preferred learning style and ask them specific things about their background knowledge. I don't object to doing that, but don't rely on that. Students may not tell you everything. I think it's a better approach, and a universal design approach, to just assume that there's a wide range of language skills.

And so what would you do about that? Spell out your acronyms, avoid or define jargon, use the simplest language that's appropriate for your class. They have a variety of skills as far as technology.

And as I mentioned earlier, provide training them. If they haven't used the learning management system you're using, usually there's a tutorial you can point them to. Point them to that, but make sure they get that information before the course starts.

A variety of interests and backgrounds, so when you're giving examples, give several examples. Imagine that a middle aged gentleman is taking your class from the United States. Imagine a blind person is taking your class. Imagine someone where English is not their first language.

What are some examples you could give that might be relevant to those populations? You don't need to single them out, by the way. But you can just say, here's an example, here's an example, here's an example. And other characteristics, like gender, and age, and race, ethnicity, think about all those characteristics that might be in your class as we discussed earlier.

On the next slide, I share some more examples. And this number two is to provide multiple ways to do things. As I mentioned in the beginning slides about the definition of universal design, you provide multiple ways for people to gain knowledge.

So could you show a video about some content? Could you then summarize it in text? Could you have a collaborative activity, like a discussion that's about the same content? So people are getting that content in that example in three different ways. That addresses different learning styles but also disabilities and preferences of your audience.

Communicate and collaborate in different ways, multiple ways. It's important to be able to use

the discussion board. You might have some real-time, chat type systems or even Skype or other methods like that. But offer people options. Some people are much more comfortable communicating in an asynchronous mode, so they have a time, for instance, to compose their thoughts, not to mention that then they can be on different time set schedules.

And then have a lot of different ways to demonstrate learning. Have some assignments. If you're giving a test, several tests, have them differently formatted, multiple choice versus true and false versus short answer, so individuals with different learning styles or disabilities can shine in different ways.

Using the discussion list that you're using to demonstrate their learning, essays. Have them give a presentation. Think of different ways. And many times, give them a choice of which way they would like to present what they've learned.

Use clear and consistent organization and layouts. Howard has talked about how to make them accessible. But also take a look at them and make sure that the wording and the headings that are structured, of course, are consistent from page to page and the layouts are reasonably consistent.

On the next slide, slip down the number four, things to think about. And again, when you're doing the organization in your layouts, you might want to have one different once in a while just to grab someone's attention. But having a different layout on every page is not a good idea.

So item number four on the next slide is to provide outlines and other scaffolding tools. I like the name scaffolding, because it implies, like if you're painting a building, that you put it up, but then you take it down eventually when the job is done. If you provide students with an outline or an idea on how to take notes on a topic or to take notes as they're watching a video, whatever, that can help them if they don't already have those skills.

And then they can apply those skills for the remainder of your class, because you showed them how to do it. A lot of students may already know how to do it. And you might figure they should know how to do it, they shouldn't need your help with that. But some of them may need it, because they're from a different country, they're not used to taking courses here in the United States for whatever reason. But if you provide the scaffolding tools, then you'll help a lot of people.

Provide specific feedback on a project in parts and offer corrective opportunities. Rather than have one big project due at the end of the term, the end of your course, how about having them turn in an outline early on in the course and maybe some others stop points. So you give feedback, so the student doesn't end up totally misunderstanding what you wanted and turn in a large project that's just not what you expected.

Allow adequate time for practice, and activities, and projects, and tests. Again, sometimes, this is just a matter of giving assignments out early with a due date, so people can look at them and be thinking about them early. Make instructions and expectations clear for the activities, the projects, the readings.

Don't be tempted when people start turning in assignments, and some students do extra things in the assignment, to grade heavily on that, because remember, they didn't all know to do that. And maybe some students would have done it if they knew you wanted it. Make examples of assignments relative to learners with a wide variety of characteristics.

And so this gives a good outline of what you can do to make your course accessible to a broader audience. Now, Howard will talk about some resources.

HOWARD KRAMER: Here, I mentioned that I would provide some other online resources for you to pick up following our presentations. So there's some great tutorials, some great URLs on the screen. And you'll be able to get that from the PowerPoint, which will be posted by tomorrow.

Tseng College at CSUN also has some great video tutorials that take you step by step, and it's more accessible. I've developed a set of-- I mentioned my work with continuing education here at the University of Colorado. So it's still sort of in a semi draft phase, or at least, it isn't put up on the permanent URL. But that URL I have displayed on the screen, you can check out those resources.

OK. So I also wanted to mention that with a couple of other colleagues, we'll be presenting a MOOC on the Basics of Inclusive Design. This is free, MOOCs are generally free, and this'll be free on the Coursera platform.

You can send me an email, but it's best if you sign up to a mailing list that I present the URL here for, accessinghigherground.org/about. You will get information about other things, such as our conference, which I'm about to talk about. But you'll definitely get information about the MOOC.

I also wanted to mention the Accessing Higher Ground conference, which is coming up on November 16 through the 20 of this year. It takes place in Westminster, Colorado. You can see information about it on that URL that I just mentioned. And it has over 90 sessions on topics similar to what we've talked about today, going into the specifics of many issues of accessibility and usability.

It may be too late, if you haven't heard of it. But we also have a virtual component. So you can participate virtually. And it's less expensive that way. And we set up so you can invite anyone from your campus to watch about 30 select sessions from the conference live.

I also wanted to mention, there's also resources there from the Web Access Initiative, Easy Checks. I haven't mention much about web accessibility, but this is a great starting point. I also have listed here the AccessDL resources. And Sheryl, do you want to say anything more about those resources?

SHERYL BURGSTAHLER: Yeah, this is a website and a discussion list that was funded by originally the Department of Education but now National Science Foundation. And so it has a comprehensive list of resources with descriptions of them. If you find a resource that you think is useful and it's not there, it'll be a little bit of a surprise, but do let us know, and we'll add that resource.

And then there's a discussion list. It's an email-based discussion list, that if you go to the website, you can join. Luckily, it's kind of a low-noise group. It's not like a huge number of messages you're going to get flooding your inbox. But you'll hear about a lot of useful strategies, particularly on managing accessible IT, but also how to implement distance learning programs that are accessible.

HOWARD KRAMER: So that wraps up our talk. And I guess we have a few minutes for questions.

LILY BOND: Great. Thank you, Howard and Sheryl. We are going to move into Q&A, so we have a lot of questions that have come in. I'm just going to jump right into them. And a reminder to everyone, if you have to leave, that this is being recorded, the Q&A will be included, as will the slide deck. And we will send out an email with the link to those tomorrow.

So the first question here is, "Is it better to publish documents in Word or PDF?"

HOWARD Well, that's an easy one. Definitely it's better in Word. In fact, our AT lab, it's just a technology

KRAMER: lab, indicates it's just much more likely for a Word document to be accessible, and much more easier for a PDF to be inaccessible. Some people at Adobe may not be happy that I say that, but go with a Word document, or convert a PDF to a Word if you want to make sure that it's accessible.

LILY BOND: Great.

SHERYL BURGSTAHLER: I would agree with that. I would agree with that. But also, you might want to consider just putting your text into your module page on your learning management system, or if you're using a web page, to use just HTML. You'll have the easiest time making it accessible. But I do agree Word is better than PDF in general.

LILY BOND: Thanks, Sheryl and Howard. Another question here. "University of Cincinnati, Ohio State, Miami Oxford were all sued because of their online course accessibility. All of these universities are very proactively revamping their course design. But in other universities who haven't encountered legal issues, universal design is not the hottest topic.

So my question is, how do you persuade your department or university to start proactively designing and redesigning online courses according to universal design principles?"

HOWARD KRAMER: I think I could give that a correct-- but I think Sheryl would be better at answering that. So I'll let her take that one first.

SHERYL BURGSTAHLER: Well, what I would suggest is you just keep talking about it, and you try different angles. My advice to institutions is, first of all, make sure that you have a very competent and responsive disability services office, particularly for captioning videos, and for making PDFs accessible. We're particularly vulnerable in those cases, particularly when they're available to the public. So make sure that those are accessible.

But as far as convincing people, I think you have to figure out where people are coming from. One of the challenges we face at our campus, for instance, is we have an excellent disability services office, and when a student with a disability requests captioning or making documents accessible, we're on it. It happens really fast. We even pay the higher rate for our captioning, because we want an overnight service.

Unfortunately, we don't have a good connection between getting those accommodations and helping that faculty make their course more accessible next time. So in other words, a student might need a lot of accessible PDF files done. Those files actually go to the students, so the

professor can leave that online learning course thinking, oh, well, this is really easy.

If I ever have a student with dyslexia or who's blind, or otherwise needs an accessible PDF, the Disability Services office does that, and they would just start over with the next version of their class and redo all of them. So what we're doing is trying to get within that loop, so that our unit can work with a faculty member to make things more accessible.

One thing that's helpful is to create, and we've done this at a high level task force on accessible IT, and get key players in that task force. And sometimes you can do a lot of selling of the idea there, so we have someone representing our risk management office, for instance, and our procurement office, and the faculty, and our teaching and learning center, and our communications department, and on and on, and start to have them work on spreading the word on campus, because they can reach out better to their different constituencies.

LILY BOND: Thanks, Sheryl. Another question here, Howard, I think in response to your formatting example, they noticed that the links were not descriptive and asked if it is best practice to convert such links to more descriptive titles.

HOWARD KRAMER: Yeah, that's correct. That was the issue in the document that I showed. So yeah, I guess you might think of it as common sense, but I didn't think of it myself when I created that document myself a years ago, first created the first version, is you don't want to have long strings of hypertext, because they're not going to be, you know, sensible to anyone reading it.

So something that says "Thesaurus Online" or a *New York Times* article about the presidential race is going to be much more usable and accessible in the wide way of using the word than something that's a long string of maybe nonsensical characters for a URL.

LILY BOND: Great. Thank you, Howard. Another question here, "Who at your institution actually does the work of converting documents and captioning videos?"

HOWARD KRAMER: Is that directed at me specifically?

LILY BOND: I think at both of you. I think people are just curious about where the responsibility falls most often.

SHERYL BURGSTAHLER: On our campus, the responsibility falls with whomever is creating those documents, so you know, a faculty member or someone who's creating a video to put online. But we have two

units that are pushing the agenda forward. The Disability Resources for Students Office, they do all the captioning and converting of PDF files and other documents for students who have disabilities and are registered in that office and have approved accommodation for that type of modification.

So that's the accommodation side of the house. Various units on campus are proactive, but the primary one is mine, which is Accessible Technology Services. And we reside within the UWIT unit, which is the central computing unit, which is our main computing unit on campus--not the academic unit but the administrative unit.

To a limited degree, as much as we can, we promote captioning. We promote captioning as a best practice for instruction, not just as an accommodation. And so we spread that agenda. I have one person, he only spends one day a week on promoting captioning, but he does a great job at that. And if people ask us for instructions on making their PDFs accessible, we provide it, providing training.

We even have a captioning party format, where people can come as a group, bring their videos, and caption them with some assistance from us. So we provide that proactive part of it, and the Disability Services office provides the reactive. But our unit is mainly a support to other units. We don't actually do a lot of the work ourselves.

We do have a project we've undergone where we've got some special funding to create videos on how to make captions on videos, et cetera, that we distribute around the campus quite a bit. And our unit, accessible technology services, is in charge of our website, which is IT accessibility at the University of Washington.

And on that website we have step by step instructions for how to make accessible PDFs and captioned videos, et cetera. And so those are the two roles, the accommodation role versus the universal design role, and our two units then take on those roles. Who's responsible? The University of Washington, period, is responsible for making sure that its offerings are accessible. So if an Office of Civil Rights complaint came, it would be to the University of Washington.

On our campus a lot people say, well, that's not my responsibility, and they point back and forth. It's all of our responsibility, because we work at the University of Washington, and so we all need to be responsible in this regard, just as we are responsible for complying with other

legislation that impacts the university and our students.

[INTERPOSING VOICES] Sheryl. There's another question here. I think we're going to try to get in another couple questions. I know we're slightly over. But there's a question here, Sheryl, in regards to your slide about the schools that have been sued, or have had complaints filed against them, asking, "Is it true that these suits or complaints name the specific faculty person along with the college?"

SHERYL BURGSTAHLER: I don't believe they mention any specifics. Now, I'm not a legal expert on this, but generally the way they're worded is most of them, actually, they come from basically the National Federation of the Blind in collaboration with a student or two on campus who is blind. And the way those read is they basically say that sometimes it reports the experiences of those students.

And it usually reads something like the history of them complaining about different websites or courses not being accessible to them, and the university or the college repeatedly putting them off and not dealing with the accessibility issues. That's why I say the first step of defense, if you want to call it that, is to have a really good, responsive system when a real person with a disability requests an accommodation. Just make sure that happens. The law says that has to happen.

OK, so usually there's been some history where there have been some complaints, and I don't believe-- someone can correct me if I'm wrong-- that any of them actually mentioned specific faculty members. Maybe certain courses-- I don't believe.

But basically they just say it's clear that the university, or the college has an inaccessible IT, and the Americans with Disabilities Act in section 504 says that it needs to be accessible, and so here are the 7 things, 10 things, or whatever you have to do. But within a reasonable period of time, you have to make your websites compliant with certain guidelines or standards.

You have to have standards, you have to have a policy about IT accessibility, and then you need to be on some kind of program for making those online courses gradually more accessible. For instance, you might have a plan where you were going to update to accessible courses every time a new course is offered, and then any time a course is updated. So you have to have a plan.

The National Federation of the blind has publicly said in general that it's mainly looking for institutions that are just not making any effort. They don't have a plan. So if you look at our IT

accessibility website, again, we have not been sued, or we haven't had a civil rights complaint about this, but we've put that right up on our websites, the history of our steps toward greater accessibility of IT on our campus.

So we've put up there kind of the highlights. Are we perfectly accessible? No, but if you look at that list, you know that we have been gradually developing policies, and making improvements on our websites. I think it's important to be proactive, too. That comes across in these civil rights complaints.

So for instance, we have a process now where we take the top websites on our campus-- the ones that are the highest level, like the president's office, or the ones that are most commonly used-- and we have somebody on our staff that actually looks at those websites for accessibility, does an accessibility check, finds out who the webmaster is, and gives them some advice.

Because the accessibility checker might show, you know, 50 things they need to do, but having a person in the middle, they can say, you know, what I would recommend that you start with is putting alternative text on these images, and might even give them some suggestions for doing that, or your PDFs are not accessible, and point them to the resources.

But maybe even adjust a few of them with that person so they learn how to do it. So again, we're on the proactive side of that, not the reactive.

LILY BOND: Thank you, Sheryl. And I think we're going to do one last question here, which is directed at-- both of you, I think, could have useful responses to this. "If you had the opportunity to build an online course from the ground up, what would be the minimum essential accessibility requirements that you would require from the vendor who is developing the content?"

SHERYL BURGSTAHLER: I can start with that one. I'd look at the Web Content Accessibility Guidelines from the World Wide Web Consortium, and ask them to comply at level 2.0. Those 2.0 guidelines, level Double A. That's kind of what almost all of these resolutions end up with. And by the way, that's one reason to look at the resolutions. They're up on our website.

Because it's not so important, even as a part of what the complaint was, as what was the resolution agreed to? What did the campus and the National Federation of the Blind agree to, jointly, that that campus would do? And some of those things you can do. And many of them point to what I just mentioned as the standard, and that's the standard we've included in our

guidelines for our campus.

And if you something really specific like that, then there are many resources online that can define what those things are. A vendor will quickly agree to those, by the way, if they're selling you a product, but at least you have them on the hook after the fact to continually work with you toward accessibility. Keep in mind, if you take a product like Canvas, it's ongoing change all of the time.

We picked Canvas as the most accessible learning management system available and standardized on that. And then we noticed that some of the accessibility features weren't there anymore, and so after my technical staff communicated, you know, there was a person that has a new job now, or left the organization, and so we had to continually put pressure on after the purchase to help them make their product more accessible.

Because again, we, the University of Washington, is required to use accessible products. In structure, the producer of that product is not legally obligated to make their product accessible, we are legally obligated to make our programs accessible. And so we have to be the ones to put pressure on them on an ongoing basis. So in our contracts, we also try to get in some wording that says that the company will work with us on an ongoing basis to improve accessibility over time.

LILY BOND: Thanks, Sheryl. That's really helpful. And thank you, Sheryl and Howard, so much for a wonderful presentation. It was really valuable, and based on the questions and comments coming in, people really appreciated it. So thank you so much for joining us.

SHERYL BURGSTAHLER: You're very welcome, from both of us. And you notice we put our email addresses on the slides, and I think that's an invitation to communicate with us individually if you'd like to follow up.

LILY BOND: Absolutely. It's very gracious of you to offer that. And thank you to everyone who joined us, and I hope everyone has a great rest of the day.