Module 10

Digitizing 3D Collections

Technical Workshop 1:

How to Use Digital Assets for Documentation, Promotion and Programs

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DAN YAEGER:

Hello, everyone! Welcome to the digital empowerment project, module number 10 on digitizing 3D collections in museums. The digital empowerment project is a nationwide initiative organized by the six US regional Museum associations dedicated to providing free, self-paced training resources focused on digital media and technology for small museums.

This series of online webinars and toolkits is made possible by funding of the Institute of Museum and Library services. We are delighted to have you here with us today. My name is Dan Yaeger and I'm the executive director of the New England Museum Association. I will be your host for this final module of the series. Before we get started, I would like to acknowledge the places in which we gather.

In this era of virtual meetings, and digital spaces may substitute our physical sense of place, it is important to reflect on the land we each occupy. And honour the Indigenous people who have called their home. I am speaking to you from such results, north of Boston, the historical homelands of the

Massachusetts peoples. Wherever we are, I want to acknowledge all Indigenous nations as living communities, elders both past and present as well as future generations. The team recognizes that our organization and those of our members were founded within a colonizing society that perpetuated the exclusions and erasures of many native peoples throughout the United States and beyond.

We ask you to reflect on the place where you reside and respect the diversity of cultures and experiences that formed the richness of our world and our profession. Thank you. Now just a few housekeeping notes before we introduced today's presenter. I would like to acknowledge today's ASL interpreter who is on the left side of your screen, and let you know that captioning is embedded on YouTube with controls to adjuster extremes. We ask you to complete a survey for feedback. We will drop a link and email a link to those of you that pre pre-registered.

We would greatly appreciate it if you shared your experience with us and helped us improve our work. Questions will be addressed after the presentation. Please type your questions in the chat. We will get to as many questions as time allows but we may not be able to address all questions during the session. For this reason, we have set up an online community form for raising questions, posing answers and connecting with your fellow Museum practitioners on the Museum Learning Hub website which you can find at Museum – Hub.org. If you are looking for help in between programs, (Static) will get back to you.

It is my pleasure to introduce today's speaker for our first module of the tech workshop series, Roz McNulty will be presenting on how to use digital assets for documentation, promotion, and programs. Ross is a CLO 3D fashion designer, consultant and online course teacher from motif.org. And is based in Vancouver, British Columbia. She did her first illustration on closing on a computer in 1983 and consulted for companies that wanted information on the road of 3D apparel. She spoke of the Electronic Visualization and Arts Conference in 2019 about the importance of 3D archiving for costumes using 3D apparel software. She is a past President of the costume museum and it’s photography for catalogs and webpages. She has developed a beta version of an online Virtual Reality fashion museum for the Oculus Headset, and her passion is historical fashion, of course, in 3D. It is my pleasure to welcome Roz McNulty.

ROZ McNULTY:

Hi! Thank you for a lovely intro. (Laughs) I am here today to talk about 3D documentation. Historical clothing. It is my absolute passion in terms of basically documenting things for the future in a mathematical way that pictures are not enough. This will be really important for museums to show their collection and attract larger audiences.

Once you have a 3D asset, you have documentation promotion, and programs for 3D, AR, 2D photographs, it is a really important part of the future.

I have with the help of lots of special people I will mention later that created a VR Museum for the Oculus Headset. And it is exquisite! It is a really great experience to be able to put the headset on and walk through this museum. Sorry. To learn more about myself, yes, I teach 3D apparel and a clothing software called CLO 3D. I helped create digital doubles for clothing companies that need sculpin, and I have a 30-year history of being a clothing designer and manufacturer. I have done all the photography in historical fashion. And the past President of the costume society. I started on a colour computer in 1983 with airline uniforms to get the colour placement so they could make a decision on what collar they would choose, very similar to what I'm doing now.

it really did not go anywhere, but clothing deals with math and at the beginning, when I was dealing with a costume using this was the display.

The figure on the right is myself, I have been scanned and imported, patterned, it fits and flatters me, and could be made into that piece of clothing.

I have learned my software by imitating historical clothing. It has been such a pleasure to get it right, but at the same time, you do not know what's always at the back of a garment.

You have to guess, or take photographs, I have no idea what's happening on the back of this. I have come across other variations that have maybe changed the cuffs.

I have used CLO 3D software which is freely concentrated on being good at. This is how it works, where you are creating a 2D pattern and doing a 3D drape and adding the math of the way the fabric looks, drapes, and then you can put prints, and as such on top of it as well as stitches and buttons. you are getting exact measurements, shapes, demographics, and we must remember our clothing is disintegrating especially the older clothing. In detail, how it works as people come up with a concept. And using 3D apparel, you can actually do a prototype. And you can sit there and say, I want the shoulders longer, shorter, let's do two buttons instead of three. Let's change the links. I want to see the same colour as the dress. But either way, you can do a virtual Photoshoot and make a decision on that garment for production. You can do a quick review of your designs, communicate with your customers, your buyers, communicate with your factory because they are all dealing with the same math versus a sketch. And of course, custom sizing the 3D look.

Sustainability. We have heard that phrase a lot, it makes a gigantic difference if you are using digital samples. 70% savings, 90% less wastage, there is creativity in terms of the documenting and 3D as I said, I have given you clues already. That is the real dress. It is amazing how well you can create a digital double. (Laughs)

These are my courses at Motif, and they are very well received by a lot of fashion industry professionals and those that just want to design for themselves.

One of the most influential talks I've ever been to is a conference back in New York. It had the head of IKEA 3D department talking about the value of its 3D assets, and how it works for IKEA. Basically, everything is output to 3D. What that means is it is a one-to-many model and they scan everything for their plants and photography and otherwise. Once you have all your pieces and created, you can use them for planning, configuration, museum display, print, you have all these web assets you are not pre-creating it. In their case, interior design, store design, animation, the whole catalogue is done with computer design. It's only the people that are real. Again, it's the flexibility in having these assets that you can use so many different ways. Especially with the approach of Augmented Reality.

Most important thing is museums. This quote here from Doctor Christopher Brevard talks about from the National Gallery of Scotland, in 2019 talked about how, (Reads) Less than 3% of our collection is visible at one time. 3% think every four months, or that it was the Museum of Scotland – 97% is unseen, and heavily booked for access. That was before COVID-19. There is limited display, storage, and online museums can help. 3D solutions versus 2D. We do not have the space.

The MBT Museum has 35,000 within The Costume Institute. Representing five continents, seven centuries from the 15th century to the present and a lot of it is photographs. Sometimes it's multiple photographs but it is just photographs. You are not always seeing the back of the garment. V&A has 54,000 pieces. Again, 2019 figures – again, it's sometimes just a small photograph documenting it exists.

We want to be able to see what those pieces look like, just that bit more before we go on the wait list to see the real thing. This piece here was really important to me. This is the MBT now. This is a really influential wedding dress of the 1930s.

It is done in the Wallis Simpson blue which has disappeared because the die has faded. You are not able to take copies of these photos from the website. To me, it's a really important dress and also important to be able to see the whole dress. In my VR Museum, you can see the whole dress, and revolve it, zoom in on it, and at the same time there's the right number of buttons on the sleeve, and I think these are really important details of documenting historical fashion.

You do not see them in pictures. And if you do see them in pictures, they can also be complementary to 3D. (Laughs)

Google has done a brilliant job of museums online. If you want to peruse and take a look at all the stuff they have put up there, it is just amazing. They've all got divided into centuries, amazing detail, but again, we are still dealing with pictures. I think at one point they do a Vivienne Westwood corset in 3D or VR, but it's not real 3 The Brooklyn Museum and Netflix.

For the serious The Queen and the Crown at The Brooklyn Museum they did a virtual exhibit. They managed to nail a 2D, 3D effect where you can go to the website, enter the museum and do a pretend Zoom onto the garment, and when you click on it, you get even more information where you can start seeing a movie clip, you can revolve the garment, it's absolutely, totally brilliant at the beginning of what it could be.

It will be. These museums are coming. Again, this is my museum. So, the Oculus Headset's are a little ahead of their time in terms of culture. They are coming. It is a fantastic experience. I was lucky enough to be approached by Vancouver film School, they needed a project, a real-life project for their student in AR. They had heard about my dreams at the Museum. I got a brilliant man, and I am nervous enough. (Unknown Name) (Laughs) Who has done a fantastic interior let alone the details of navigation or should recite math of navigation in terms of going up to each garment, revolve it, have it pop up, explain what's happening there, go off to a special observation room, and at the same time, it becomes now in two languages.

Again, the biggest problem now is Oculus penetrating the market or other 3D headsets during the market. But it is definitely a part of the future. Again, another thing with this whole museum that they have done as well is he's actually made it so, because it's a 3D asset or a 3D asset the two of us created together, it can also work on Mobile or AR. It is also possible to see the old museum piece, or some of the pieces on a mobile app. Remember, this is beta, but you can see it. And you can place it in the room with AR. Again, early days. I would like to see more texture on these fabrics, but it's getting there.

I've had students contribute and they created some beautiful pieces. What I really want to clarify is creating 3D assets. Assets for promotions, planning, and web. It becomes documentation for future generations. We will know how that Charles James dress came together, because otherwise you are guessing. The ability to study and re-create an original garment is part of our education system, one of the ways you learn a lot about pattern drafting is studying clothing that has been made.

And with VR and mixed realities to complement your museums and promotions. These are really important things in the future and now.

So, in conclusion, I've got my contact info if you would like to know more, hopefully I've got the links to appear if you'd like to get an overview on the VR Museum. I definitely recommend taking a look at The Queen and the Crown, and of course, the Google Museum as well.

I am open to any questions you'd like to ask me on this.

DAN YAEGER:

Thank you, I appreciate it. Let's take a look at our chat. They have revealed to us here.

First of all, let me ask you a contextual question here. When we talk about your experience with CLO 3D, specifically design-driven where you are literally designing the closing and fashion in the program, are there aspects of these – in the program that deal with actually digitizing existing garments? Is there a photographing digitization component to this, or is it purely just a design from a designer?

ROZ McNULTY:

For my aspect, you are re-creating the pattern which means you are re-creating the math of what it should be. At the same time, there are possibilities I should've touched on. Of bringing garments in. Which is scanning. The thing with scanning, you get an object or blurb of fashion versus an actual flat pattern piece, that is documentation.

DAN YAEGER:

Walk us through, the Wallis Simpson example. Here's a historic garment she wore – how did that translate into winding up in your museum? Did you actually recreate that from a design standpoint based on the actual garment?

ROZ McNULTY:

Yes. I have done research on that for a couple of years. I even recreated it firstly in another software. Called browse wear. I would find the dress and another picture, I would see another angle I could learn by and think, oh, OK I have to fix that shoulder line, so I have been continuously documenting. I am going in, and I noticed the other day I will have to go back and do something different on the back, neck and shoulder. There is some detail I have not seen. Again, I am doing this all from pictures. From all over the world.

For me, it's been continuously evolving. A lot of those buses are not in front of me. The same thing with Jeffrey Dean. There's always a detail I am not seeing, because I'm not saying the real garment. To fix stuff on the back of the coat.

DAN YAEGER:

Some of the questions come up the whole series is geared for small museums. Translating what you are talking about into what small museums can do to actually take advantage of your wisdom, and how can this work? I know there are a couple of questions regarding specifically that are often in folks' collections.

One of the problems, specifically – the historical societies have when you show the picture of them, the wax of things that are in a museum storage. That is typical of any historical societies across North America. They have donated all sorts of clothing from different folks in the community and the like, the usual phase is grandmother's wedding dress. How could this technology potentially offer some sort of solution, or resolution to that storage problem, and as you note at wherever it was, 3% of the collection is shown. How can this type of technology be translated into a small museum to sell their collections issues, and to get more of their collections online? The textile collections in particular.

ROZ McNULTY:

Well, there are thousands of people that are actually starting to get into design. There seems to be 3D designers, and professional clothing people, and it's a wonderful way to learn. I have been able to reach out to my students and get them to start re-creating those pieces. That is one way of looking at it.

Those pieces are all exportable as well in different 3D ways. In terms of scanning something, I will show you this. The iPhone now has the ability to scan, it's been out in the last version 12, 13, and the iPad. You can go up to anything with your phone and scan it in 3D. You will be amazed at what you can actually create. Then you can take it and place it in the middle of your room. That's your first version of scanning grandmother's wedding dress.

The scanners I have worked with have been reasonable in detail, but you would also be amazed with what your phone can do.

Then you can go up to the next levels of scanners, which might be too much for a small museum. It might be an investment of 10, to 15,000 now. You can start scanning everything with some. I always think – they are continuously coming down in price, and getting better in terms of detail, as well. The

only thing is you cannot quite flatten those out and re-creates them. As I said, you get a solid lump of math versus math of something that turns into a pattern again.

Yes. One should take a look at what you can scan with your phone and take a look at what exists for scanning, at the next levels in terms of price.

DAN YAEGER:

Are there service bureaus that offer this technology that you could bring your textiles to a particular service borough and have them do the work instead of investing in the hardware yourself?

ROZ McNULTY:

I do not know a lot about the museum world. Yes. There are. I am working with – I would look into AR companies. They do exist. I am working with one company that has actually gone and bought $10-$15,000 scanners. Yes, they would do that. It is portable, it is about the size of a shoebox. It can come to your location. Unfortunately, I do not know a lot about the details of that. If you want to know more, email me and I can find out the exact name of it.

Get someone with an iPhone first, and start playing around. I can look up the names of the software for that. With the clothing, because you are documenting clothing and because what we are doing here is getting the math of the clothing, the important thing to do is do the proper patterns for it. Otherwise, it is just an imitation of what it is. It does not have to be exact millimetres, but at the same time, you want to document it in a way – when the material disappears, -- the dress can be re-created. With Wallis Simpson, the pattern industry went nuts in the 1930s and put patterns out of her dress. (Laughs)

Again, what you want to also think about is the bigger picture of creating assets. And also, there is the talent out there that will be able to contribute to your project – as I say, I've got two of my students, one of them did suit from the 1940s for me. Another one is – I am going to forget her name. (Laughs) At the same time, she has done a dissertation on 3D in museums. She did a gorgeous outfit from the 1920s, a beaded chiffon dress. So, there is talent out there that can be brought in to help start documenting this clothing. It is also – either a make work product or make talent project. It is definitely something possible.

DAN YAEGER:

Are the university programs that would have folks coming up in the pipeline in both the design area and technology area that would possibly be resources for the museum field to access? Is this a thing in most universities now?

ROZ McNULTY:

Not really. (Laughs) The problem is that a lot of the industry has been focused on peril, and getting timelines down, and costs down, and such. Working for the industry... the schools have been slow to adopt. They have not been able to decide on which platform they may choose, will it be CLO, will it be other software's, or one of the grandparent companies.

The schools keep sort of teaching the science of the apparel industry such as marketing, etc. But not the science of pattern drafting other than your basic courses. But at the same time, my friend did – or my friend now did write her whole dissertation for her master's thesis on 3D apparel. There is definitely study on what will happen with 3D apparel. There still seems to be a bit of a gap in teaching 3D apparel.

With the online courses, I am amazed at how many students I have from around the world and those that want to learn 3D, sorry – those from the apparel industry. (Laughs) It is going to be a combo.

DAN YAEGER:

It seems to me there might be room for this kind of curriculum in schools that are teaching conservation, for example. Textile conservation. There seems to be sort of some opportunities there where you could... digitally conserve some garment, a historical garment, you know, so it cleans up.

In real life, you may not be able to because of the fragility of the garment. That would be a really fascinating thing to see where that would wind up. I would imagine from a historical standpoint, the value of that is incredible! Again, you would be able to have much more access to the conserved garment. What would it look like if it did not have this giant hole in it, or something like that. (Laughs) Which would be very helpful for something that would be a medieval garment, or something like that.

ROZ McNULTY:

That is so possible. In one of my lessons, I showed you how to take your iPhone and take a picture of a little bit of fabric, and with the dedicated software you can actually create a whole print and use that for your dress. And of course, there are services that do scanning, and it ends up being several layers of texture maps that allow you to get the impression of a wool, or shiny bead, it's absolutely fascinating. There are companies that scan fabric professionally such as swatch books.

In many ways, it is an emerging world. What really changed it in 2016 when Cielo came out and it was an inexpensive program versus an industry software that had a higher price. Once CLO came out it meant the whole world could learn to do it. (Laughs) And they have!

DAN YAEGER:

A number of questions deal with this idea of details and textures. How is it possible to include interiors, and inner linings within the 3D model? The inside of the garment. Is that possible you would be able to construct?

ROZ McNULTY:

Yes, definitely! You can create different pattern components in terms of shirts, or create a shirt and export it, and bring it back when you've done a jacket, and pants. You can also... sorry, I am losing track of the question. Anyways, ...

You can do a sublayer, and layers, and something really racy like a hot pink lace. (Laughs) You can do transparencies, it's... if one were to look up CLO 3D, or any of those on Instagram, it's amazing what some people can do. You can recreate fur, it's up to your imagination with how far you want to take it. That's why I enjoyed the history. You have to re-create fur beading reflection.

DAN YAEGER:

I am a garment technology researcher and lecturer and excited to see the extent to which virtual samples can demonstrate the pattern becoming a construction of historical garments. What do you perceive are the possibilities and limitations of this?

ROZ McNULTY:

Well, I do not see any limitations.

When I see a new dress, I take it apart to see how it came together. Especially if it's an incorporation of something of some sort part of the main skirt fabric. It really is a matter of observing it. I have done reconstructions, digital doubles have things like jackets, custom label jackets, and I bring the jacket in, I start measuring it, and I get the exact sleeve length I want. What I do is I look at it again, and I say it has to be this way, it is a work in progress to do it. Sometimes you can even wear your original pattern for that jacket. Then you make it look like that.

I am working on one dress, which I probably cannot talk about so we will just leave it. At the same time, it's amazing what you can do with dresses in terms of – and other outfits, at one point I got an inquiry from a museum, I think it was in Scotland. They wanted some sort of coat, but I had the whole pattern and coat done based on the drawing before they would say yes, and they still never said yes which was sort of sad. (Laughs) They were just asking for a price, but it was too inspiring for me. (Laughs)

DAN YAEGER:

Another question here – are museums going to need a range of software and tools for creating 3D collections? Different software for digitizing clothing and other materials, and other objects. Another question is – the non-textile types of things in museums including, you know, art sculpture, 3D sculpture especially paper, those kinds of things. What are the aspects of what you see museums needing to invest in? In order to fully digitize themselves.

ROZ McNULTY:

Well, I have a friend who is an inventor and he created something that works with the iPad. For years we have been actually scanning, and I believe he did a whole job for Japan by going around and scanning assets. What I am trying to point out with the phone, and the iPad, and the scanning is you can do it really cheap, or sort of cheap. Again, you can go to that next level of 10 to 15,000. It is a double handhold for the next one up.

Then they go up to $30-$50,000. It is not a hard thing to do, especially when you talk about objects of anything, objects become easier because they will not move once they have been created. If you were doing a cup or a statue, it is easy to get it. taking lots, and lots of pictures that also read the depth of where the photography is. So, that's how it works. You have one capturing the colour, and two eyes capturing the depth.

DAN YAEGER:

The difference in quality between your iPhone and the more substantial investment in the technology – does that show in the output? I mean, it really makes a difference. iPhone, you will get a lot more, I am imagining exultation and that thing, and maybe the colour is not as good. I am putting words in your mouth. (Laughs) You tell me.

ROZ McNULTY:

Almost. The other thing about scanning is you can scan a whole room, and it looks a bit blurry depending on how many passes he makes, and the quality you render at, but you can see the wall is 14 feet. so that is very interesting.

IPhone will not be quite the resolution you want but it is certainly a beginning to see what it could be. The company I am working with uses AR, they have done a lot of work with virtual runners. They showed me the new scanner they got in December. I have not seen a lot of the work. I guarantee with the detail of a new fashionable runner with older textures, and l laces and as such, they can make it look like it's real and on your foot. AR is going to continue to be really, really big. Not many people really can comprehend what that is yet. It still means you can take a scan and place it in your room and walk around it and take a look at it. You can do that – now you can do that with IKEA's place, I believe it's called. You can place a chair in the room and make a decision.

I think where you have to possibly consider some investment is sometimes when you are scanning something, although the software's getting better at this, it will pick up the room or the floor, as well as the object. So, you might have to go in and do some editing or get someone that knows 3D to do some editing.

DAN YAEGER:

What sort of person if you were to have something on staff to supervise this, what sorts of qualifications do they have? Do they need to be technologists, curators, or a combination of both?

ROZ McNULTY:

Well, for some reason I think somebody who is working in 3D. (Laughs) I do not think they really need to be a technologist, other than knowing the 3D software's. I am not going to be able to name them all off hand. It is one thing I have always wanted to go back and do some more learning on. But I have been too busy.

It is not hard to do. Or rather, once you start studying it it tends to become a passion and you can become very good at it. It is someone that is really into 3D creation, and... trying to think offhand, the software's. I think it would be obvious what the software would be.

AR is slightly different from Virtual Reality but they use the same components, VR will need 3D components, same thing with the dresses I am doing. They get exported as an OBJ, or GL B, etc., and become a 3D component. So, 3D maps. There is one software in the back of the brain. (Laughs) They need to be first in 3D software. That might be enough to get the interest of people coming to talk.

DAN YAEGER:

Is there a platform online – is there a platform online where you recommend, we can share these 3D models so people can access them and learn to use them in functional ways?

ROZ McNULTY:

OK. Probably best to send me an email. I have been part of the VR community for some time, and there are quite a few people working on interactive galleries and such. I can think of Joseph, but I cannot remember Joseph's company name at the moment. Yes, those things exist. That is another thing you should not do is build everything. There are people that have built good 3D display spaces out there. You should not try to build the whole car. (Laughs)

You should get a good expert to help you out on that whole simulation, and take that – concentrate on the assets for display. There are a lot of those rooms happening all the time now.

DAN YAEGER:

Here is a question you can answer. How can I see the Oculus Museum? That is your museum. (Laughs)

ROZ McNULTY:

Again, email me directly. Again, I assume we will have the links up yet again. roz@fashionic.ca, that is the Fashion Innovation Centre. I think there might be a contact on the VR Fashion Museum.com page. You can take a look at the page and reach out to me there. I am working on getting it to the Oculus store, and I will. It is a matter of time. It has been a busy Christmas.

DAN YAEGER:

Museum people are notorious for loving detail and cataloguing things and the like. Could you expand the process of embedding metadata in all of this? I imagine that one of the major advantages of this is you are able to really embed a whole lot of stuff in it, but you cannot necessarily embed it...

ROZ McNULTY:

Definitely. You have to think of it like hashtags. When it was made, what fabric it was, what the designer was, who wore it, who owned it, who donated it, all of that becomes information the minute you go and say, donations, the names of everybody will come up and everything that they have donated will be there. So, that is the power of metadata. It is all stuck to that garment, or that 3D scan now. It becomes

searchable in that way. That is a great advantage of metadata. You can take it further and put that into different languages, and such. That can be quite powerful. What city it was worn in. It goes on. Especially with clothing and items. They all tell a story. The object, or field, the easier it is going to be defined.

DAN YAEGER:

A related question – do you recommend a particular platform to scan through the assets? Any thoughts on sketch fab?

ROZ McNULTY:

I could probably do some research on that. It is a good, healthy company. Looks like it will be around for a bit. Again, that is where I would probably reach out to the AR company that I work with. They are working with companies and cataloguing the data.

There is always a VR community to reach out to. Usually in every city. (Laughs) Or online. You can start talking to people, or checking the groups on that one offhand, I do not know anything, but I am willing to look it up.

DAN YAEGER:

What are the links between historical archaeological data where we can re-create certain clothing from the archaeological record? For example, the thing that comes to mind is when you see actual recreations of one of the pharaohs faces in 3D, they used that data. There is always a lot of speculation based on two-dimensional, and the like. What are the aspects we are talking about here that can be used in that historical picture based on archaeological evidence?

ROZ McNULTY:

Definitely. That is really exciting. I have seen the reconstruction of faces, but we should be able to do clothing and one of my inspired projects would probably be the Queen Elizabeth dress they just found the prayer cloth from in the church in northern England, I believe it is. They found something that belonged to Queen Elizabeth I. They have a snippet of the fabric which could be a basis of the re-creation of one of those dresses.

I think the more and more we read historical – whatever has been left as a message of which they were wearing, it gives us the way to re-create especially if it is a body shape and such. The body shapes will

have changed, we can recreate that body shape to be what it should have been in Egypt in terms of height and such.

Again, it's only your imagination that will stop you. There is no such thing as ever stopping as an artist. (Laughs)

DAN YAEGER:

Our related question, I do not know if this is left-field or not – are there any diversity, equity issues that go into the actual – what do you call it? Not body double, but effectively the mannequins you present in AR, and so on. Are there issues with presenting a particular racial makeup or body type, or any of those lines you would look for as you are presenting the garments on a person that is designed or something along those lines.

ROZ McNULTY:

Yes. I have been doing work with the male models or representations in CLO 3D. It was stunning how different – I think there are five or six models within, how they are built differently. There was so much difference between the Asian, and European, and as such. And I thought they were supposed to be a size 40. (Laughs) They actually shaped the mannequins slightly differently. I think they had the same thing for the women.

So, yes. As I said, the 3D scanning, the fact you can do real scans of yourself and dress it is the difference in the clothing versus a generic model is really, really interesting. It looks real. It looks much more real when it is a real measurement versus model measurements. Or versus even a contrived model. Measurement. Does that make sense?

DAN YAEGER:

It is a bit of a left field, but all of the museums in our field are focused right now on equity, and DEI, and how we actually represent different communities in our presentations. It would seem that it is somewhat relevant discussion, as we approach this, especially if these are designed garments and the like to be able to drape them on folks that would represent our communities better, not just the standard ideal body shape, or whatever, but all different types of shapes. And that kind of a thing.

ROZ McNULTY:

I feel that would be a great way to start. Get that body shape you want and scan it. I have done my whole family as tests with 3D looks so I can make them clothing. I do not have to stand there with a

measuring tape. If one can do that, one could do it with the nationalities. And one could have actually resized it for the garment. That is enough of that today. (Laughs)

DAN YAEGER:

In response to our comment about archaeology, I work with CLO 3D and textiles, small fragments, do you know anyone doing this? I have trouble finding a community. Are there any other folks out there that are actually doing this work?

ROZ McNULTY:

I think the best place for the CLO 3D community is actually Instagram. Start doing postings. I/O that sounds silly, but Instagram, I cannot remember, they have 32,000 followers. I have not checked the numbers recently.

They have thousands of views – yeah, thousands of users and they all show off. There is a level of support as well. There is an amazing YouTube community with some great people on it. And there is the fact that everybody is showing their work, which means you find people, you meet people because of that. And you can reach out to them, I'm trying to think who I actually met.

A lot of times, if someone does something that really interests you, you can reach out to them and say, that was great. And all of a sudden, they become an associate or conversation partner. So, it's a great place to start, start publicizing what you are doing, and you will find other people that are doing it in CLO 3D. Make sure to use the CLO 3D hashtags.

DAN YAEGER:

One thing I should suggest, this should be for a museum community hub to post on there and see if there's anybody interested in our immediate small museum nationwide, or a North American community that has experience, and wants to pursue the conversation a bit further. I know each of our regional Museum associations have networks of folks that we can actually reach out to as well and see whether there is a will that want to continue this conversation, because it strikes me a lot of the information is very rich, and the opportunity for creativity for our museum folks to be able to expand their horizons, exercise their imaginations, and work collaboratively with fashion designers, and folks we might not have even thought of. And certainly, the AR and VR piece of it is a new frontier for us. I think this is really ripe for further conversation. The museum hub website is good for that, and also be in touch with your regional Museum Associates. That would be a good spot for us to continue that conversation, and conferences, workshops, and the like. For sure. We have a couple of minutes more here. Which software do you recommend using for matching the fit of 3D clothing aspects to actual scans of people?

ROZ McNULTY:

Hands down, it has this 3D look. You basically take your iPhone, I think they do android, you take a picture of the person from the front, and the side, and it will – it creates a whole 3D scan with all your measurements, and an OBJ you can put into any software. An OBJ model. If you really want to get an accurate scan, I have been really happy with the work I have done with them or with the scans. I have watched the companies. It is pretty well started. 3D look.com.

Again, mention my name if you want. (Laughs) Or get in touch with me, and I will make sure somebody gets in touch with you. I know there are other scanning companies out there. The reason I probably pushed the 3D look firstly, is because I'm working with them or have worked with them. At the same time, they are not coming from the medical profession. They are actually coming from the clothing profession. There is a lot of 3D scanning software that is out there that comes from this. That's why I like the 3D look. It's great. I use it in advance, and classes, in CLO 3D you can scan it yourself and make a garment. I must admit it's amazing how few people will actually scan themselves and make a garment. They borrow me or something. (Laughs)

It is still a great science.

DAN YAEGER:

I think we are ending our timeframe here for you. Do you have any closing thoughts? Words of wisdom, and the like for anyone? For today?

ROZ McNULTY:

Well, please reach out to me at roz@fashionic.ca. I want to create an amazing community of VR fashion online. At the same time, the museum is built in many ways where what we would need is people contributing to it. And probably more than myself doing it, I am so busy, I cannot get anyone to help me at the moment – I will find out if there is help.

And to keep thinking as people are about documenting those materials, and those styles that we are not going to see if we do not make that effort. And to remember perhaps – we are at the beginning of all this. The scanning, and the pixelation, and all of the qualities are only going to get better and starting now means we will be ahead of the game.

DAN YAEGER:

Well, thank you very much for your words of wisdom and expertise, I am very grateful for your presentation. Thank you all for attending today's webinar! Please remember to fill out an evaluation form, and visit the community form space as I mentioned, museum-hub.org. Hopefully we will see you at the same time next week for our second module, presented by Carla, with the Cultural heritage imaging Association in San Francisco. So, thanks again and be well everyone! Take care!

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