

REopening Archives, Libraries, and Museums (REALM): An overview of the COVID-19 research project

Please stand by for realtime captions.

We will be sending a link to everyone after the session. I also wanted to let you know about upcoming webinars. On August 11th we have teaching from home. On August 12th we have another one. On August 14th promoting government information, August 18th, U.S. military COVID-19 information resources.

Welcome to the webinar. Reopening archives, libraries, and museums. I am an outreach librarian here and I will be the host of the webinar today. I also have Ashley on the webinar and she will be doing tech support. And then we have the presenters. Sharon is the direction of Webb Junction. She works to build an active collaborative learning network for library staff and grant funded national scale projects. She is a member of the leadership team for the membership division. She leads the team responsible for executing the deliverables for the Institute of Museum and Library sciences and also Patel. Her work included conducting corporate law research, and managing the publishing division. Kendra works with IMLS. Her primary responsibilities are the delivery and management of the core continuing education services for state and public libraries she's interested in the roles that libraries play in supporting healthy communities and has managed a number of grant funded programs that address this issue. Prior to joining she provided support in libraries is par is the Bill and Melinda Gates U.S. Library program and served as a technology consultant at the Library of Virginia. I will walk you through a few housekeeping reminders. If you have questions you would like to ask the presenters or if you have technical issues, please feel free to use the chat box. We will be sending you a certificate of participation using the email you used to register for the webinar. If you need additional certificates, please email us and include the title of the webinar along with the names and email addresses of those needing certificates. You can zoom in on the slides being presented. Click on the full-screen button on the bottom left side of your screen. To exit that mouse over the bar at the top of your screen to expand it. And then click on the return button to get back to the default view. At the end of the session we will share a survey with you. We will tell you when it is available. We would appreciate your feedback including comments on the value of the webinar. And our presenters will be sharing their presentation. That means that when they start talking, you will no longer see the chat box. If you want to ask a question or if you want to watch the chat, once the screen sharing begins, mouse over the blue bar at the top and when the menu drops down, click on the chat to enable the chat box.

Thank you all for being here today. We are excited to get to present some information for you about this project. I am joined by Sharon streams and we are involved in this project and grateful to be able to speak with you today we are interested in your questions about the project and how it will impact libraries, archives, and museums, and we want to hear from you. We encourage you to use the chat and you will be able to pull up the chat button and we will keep an eye on that and we look forward to your questions and we will use a tool called poll

everywhere. The URL you will use is on the screen right now. We can learn a little bit more about the participants today. The first thing we wanted to look at is understand where you are joining us today. You can drop a pin on your location and we expect that most of you are based in the U.S., but we have been doing sessions recently where we had people joining us from around the world, which is great to see. We know there is a tremendous amount of interest in this topic and we are happy that everyone is interested in learning more and we are interested in learning from all of you. It's great to see such great distribution. Thank you for taking some time to join us. Sharon will talk a little bit about the different roles and responsibilities on this project.

As mentioned, this is a project that has three important organizations partnering. The impetus for this is the Institute of Museum and Library services. They are the funder for this project and catalyzed this research partnership. The ongoing role with this is to consult along the way with the goals and activities and they also coordinated the formation of a steering committee and working groups that are advising the project along the way. The next slide will tell you more about those. The groups are comprised of representative leaders from across the libraries and museums mostly in the U.S. We also have the international federations of libraries represented. And we have representatives from individual institutes from large systems and consortia as well as member associations and other support organizations. These groups met every week for the first couple of months and now we are every other week and we are very active in bringing perspectives and deeds and interpretations from across libraries, archives, and museums. The second organization is Battelle. For those who are not familiar, it is a scientific research Institute that is headquartered in Columbus, Ohio. They have done extensive research across the public health, consumer, industrial, and national security realms including they have a lot of history doing research on emerging and infectious diseases and they use this hard-core biosafety level laboratory that allows them to study things like the plague and anthrax. We are grateful -- it is great to have them bring their expertise to this project. And then OCLC, that is where we come from. We were requested to be in this project to lead and manage the execution of the deliverables. So we are coordinating Battelle's scientific research and we are coordinating the input from those two working groups, the steering committee, as well as other subject matter experts in the collective fields. We have established a cross sector communication network that has dozens of associations and organizations that support libraries and archives and museums that get information from the project and can pass it out to your constituents. And likewise bring information back to us. So this is an example of that communication network. The final task is to distribute the research and information coming out of the project to a constituent communities. We have key activities for this project. One is to do literature reviews of the science to see what is emerging about COVID-19 that can be allocable applicable to museums. And as I mentioned before, it is to continually engage with subject matter and representatives from our field. So we understand what is going on and we can bring that back to Battelle and to IMLS and our project planning processes and we also have to do the laboratory testing of materials. So that is the main research scope of the project, and I will talk about that more, and Kendra will talk about the laboratory testing later. We are taking all of this input and synthesizing it into what we call toolkit resources. These are resources that apply the science to the real-world practices and operations of libraries and museums. I want to make

an important point about this. This will not be in the form of specific recommendations or guidelines to say that this is what institutions do, but it presents information in the context of the operations and workflows so you can have well-informed conversations with your local stakeholders and local decision-makers to determine your own decisions about what you will do. And then it is to share the project information as widely as possible so that everyone knows about it and can make use of that information. The scope of the research comes out of the result of a webinar that IMLS hosted in March where they had representatives from the CDC on the call and the CDC was talking about the possibility of virus survivability on materials and quarantine time for those materials. In the course of that webinar a lot of questions came up from the attendees that had a lot of specific questions and concerns about materials that were specific to libraries, materials that are frequently circulated and handled both by patrons and staff, and so it opened up this whole area of inquiry. The primary research question for the realm research is to determine how long the SARS-CoV-2 survives we began the tests in May and they were published in June. The second test was published in July and we expect to publish test three results this month and we initiated test for we expect those to be published in early September. Each test is testing five different items, although, we tried to combined items that had similarities. In addition to the lab testing, we also had Battelle conduct a systematic literature review of the available literature that was available as of mid-to-late May. That was published in June and we are just going to start a second literature review this month, which will be published in September knowing that the science around this topic is moving quite quickly. There are still a lot of unanswered questions, but we can expect that there has certainly been a gathering of evidence between the month of May and now. Just a final bit about the project construction. It is in three different phases. This was to allow the project to start with the highest volume of materials and the most frequently circulated and then based on what we learn along the way to decide what the future scope of the research would be after that. So Phase 1 was looking in particular at libraries and what would be useful information to support them. We put that at Phase 1 because at the time when we are constructing the project, it appeared that public libraries were on the leading edge of the reopening time line with academic and school libraries tied more to what was happening in the fall. And museum openings being more unknown. So that is what Phase 1 research was. So they do have a very strong library. And we do understand from the working groups that the information is relevant across all the sector types. Phase 2, which overlaps, has a broader scope looking at materials that are common to all of the institution types. This is where we have materials that get beyond books and into some other items as well. And future testing will lean more into the museum -- the museum specific materials. And in phase 3 is what did we learn and what do we do after that and we leave it open with that, what would be the most meaningful research questions and activities to take us through the next year. We also knew that in constructing this project that we could not say how long the pandemic would last and what status it would be at the time, so this gives us the flexibility to react and adapt in real time.

I'm going to dig in a little bit to the literature reviews and the science behind the project. We will start by talking about the literature review. The project has a scientific working group, an operations group, and a steering committee. They are helping to inform the questions We are looking at, making sure that we are representing the three sectors that this project is focusing

on on libraries, archives, and museum. The results -- the searching only went through the middle of May. So the questions that they looked at was how might the virus spread general public library operations, how long does it survive on surfaces. You will hear attenuation come up a lot and that is letting the virus die naturally without any intervention and what types of prevention and decontamination measures are readily available to libraries in the near term. When we did this research it turns out that almost all findings are applicable across different sectors. There was not anything that we found that would've been specific. So we certainly understand that some of the cleaning agents represent concerns for the materials due to the level of sensitivity that they have. But the findings were generally applicable across all kinds of organizations. Part of what Battelle did was look at the state of the research. This only went through the middle of May and the pandemic truly started, if we look at December, there was previous research posted about SARS-CoV-2. It had been looked at by researchers in the past, but an important take away from this research and everything we understand is that the human infectious dose is unknown. We don't know what it takes to get someone infected and to become sick. And then there is a huge range of variables between individuals with compromised immune systems, age, and other mitigating factors. So one of the biggest challenges of this project and our response is that the infectious dose is unknown. There was a limited number of pure review studies out because of the rapid nature of this project. People are trying to get out what they looked at and not necessarily doing the pure review process. A couple of things that did surface through the literature review, and you can find the link to this in the chat is that SARS-CoV-2 is spread via water droplets expelled from infected persons. This comes from singing, coughing, and there is the potential for indirect transmission. Objects can harbor the virus for a period of time, which is what drove this project to be funded. Other areas that people are still looking into are about aerosol particle transmission and human matter. There are a lot of questions, and we looked at the map, we have colleagues joining us from all over the country. There are very different humidity conditions in their libraries and in the region of the country, temperature makes a big difference, but drops can go up to 120 degrees in the summer months and did those things make an impact on that attenuation rate. These are the things that they are looking into. From the published literature that Battelle looked into, survival times varied before it died off and we are seeing very different results from different individuals and it is difficult to draw firm conclusions. And much of this has to do with inconsistent experimental design. So what one scientist decides to test, the temperature and the humidity and the amount of the virus that is applied and how that material is studied are different from researcher to researcher, which makes comparisons very difficult. But we know that it is likely to survive longer on plastics rather than paper products. So there have been some emerging trends, but it is difficult looking at the research that is available to understand how risky an item might be. Another aspect that we looked into his prevention and decontamination. Some of the things that I'm sure many of you have incorporated into your personal and work lives is cleaning surfaces often, practice social distancing, wash your hands and wearing PPE. Other things that I mentioned that can impact survivability are things like heat treatment, sunlight, ventilation systems and open spaces. These are the kinds of things that we will continue to look into as we go into the next literature review. And are questions that are coming up within project stakeholders from individuals in the field who have been asking questions about our project and expectations and activities that will be underway. These

are all things that We are looking at but certainly do not have definitive answers at this point. We wanted to take a minute to do a quick poll and here about the current state of operations at your organization. We have broken this down into a few slides -- a few options, and I will put the address in the email again just to hear a little bit about how your facilities are responding. It looks like the majority are not open to the public but some staff on site. We imagine much of this is dictated by where your organization is located. None of you are fully open. We did another session yesterday where there were a few people who were saying they were fully opened. It is help for us to understand how people are pacing openings and what is helping to inform efforts as they decide to reopen. It looks like 60% at this point only have staff on-site. We will talk about the science of how we are doing lab testing. Sharon and I have had to become layperson scientists, and I will tell you that if questions come up today that are more complicated than we can answer, we will follow up with you afterwards and we will make sure to get those questions answered so that we can fulfill your curiosity and interest. We will do our best to answer questions that come up. A quick testing overview is looking at how at a standard office temperature how it survives when applied to common materials. Sharon mentioned that these tests are being conducted and what the scientists are doing in the biosafety laboratory is applying virus directly to materials, and these materials have come out of organizations that are working on the Rome project including the Library of Congress, the Columbus Metropolitan Library, the national archives has contributed materials, the National Park Service has provided materials. We are getting these things out of people's collections and they are used to materials. So they are trying to simulate real-life usage in our organizations. What they do is apply synthetic saliva that contains the virus directly onto these materials. Sometimes, depending on the circumstances, we either stack those items similar to how they might be found in a book drop or on our shelves or in storage, or on stacked and exposed to air. And then We are looking at four different time points. Those are determined for each test separately. They have been different for each test. One of the things that I mentioned earlier was it is difficult to extrapolate findings because these tests are not all the same and we deal with that as well. Different types of materials call for a longer test period. Things like plastics were some of the preliminary research showed that it lives longer than on paper-based items. We are selecting those time points based on the materials that comprise the test set. So I quick little walk-through of the process of testing let's take a book. We tested a hardcover book material and we sent it over from the Columbus Metropolitan Library and the lab cuts those and you can see examples of this in the picture on the right is that these are strips of paper and they applied the virus solution to these pieces. Is inoculated with the virus. They put them into a test chamber where the humidity and the temperature is constant. And you can find all of these details in each of the test results that are released. But I believe it was about 72 degrees. They look to see how much virus is still bare. There are key points that we look at. The first is the limit of quantitation. We start off with over 100,000 virus particles. So 100,000 pieces of virus are applied in each droplet that goes onto the materials. Once the virus count is below 13.1, so his dropped from 100,000 that is what they call -- they hit the level of quantitation. They cannot see anything using their testing system and they have to now look using a microscope. What we look for is the limit of detection. So when they look with their microscope, if they are not able to see any virus, then we have reached the limit of detection, and they are not able to see anything with a microscope. This is an example of the testing that

was done which included a hardback book, those plastic protective covers that we use to protect materials, a paperback book cover, a DVD case, and then playing pages. Those were returned inside the book. It is almost easier to look on the right side of this chart, but we started off over 100,000 virus particles. And by day one for all of these items, we were below the limit of quantitation, so there were less than 13 items in a droplet at that point. And by the third day, everything was below the limit of detection. You will note that we did not test day one on this chart for this test we only tested days one, three, four and six. We dropped the sixth day. You will see on the next test that we had a different number of days included. The second round of testing were children's board books, and archival folder, that has a different pH to protect items. A glossy page of a book, a page with braille, or something would find in a coffee table book, and a magazine page. And we started out with over 100,000 virus particles, and you can see the rate of attenuation as we go down. For these items the glossy page, which was stored within the book to simulate usage, that item was still above the limit on the first day, but by the second day all of the items had dropped below the limit. But it took until the fourth day with these materials, which were stacked, to reach below the limit of detection. So this is when they had their microscopes out and they were looking to count cells individually to see if they were still remaining. There is an adjustment here or difference compared to the first test. What they found when they went back to test the fourth day of the magazine page, which had previously been below the limit of detection, on the second day they were able to see a cell. Because this is happening manually, it is not unusual. We were looking for a better description of why this happens, but it is not uncommon for a cell to be found intact when previously it was below the level of detection. It was different and they assured us that this does happen when they run these tests.

With those tests, this slide shows the results in a single charge to give you a sense of where we are with these paper-based, except for the DVD case materials, and the different attenuation days. So at what day had the virus gone down below where could not be detected through a microscope. Just to give you more information, you saw on the chart that it started with over 100,000 particles and then it dropped down to single digits and then fractions of single digits. And the question is, well, is such a tiny amount, is that still worth being concerned about. And truly, the answer to that is there is not a clear answer on that. We do not know what is a reasonable amount -- how much virus is in a typical sneeze. But how much is that because looking at other viruses, that number can range widely. And then, when any of the virus that is detected, it is virus that is infected will. So it has -- it is viable that could in fact, so it might be such a trace amount that the likelihood of it transmitting could be very low, but not that it is benign. So we are giving this information out here knowing that there are still very important related research questions where the science is still being directed to those related questions. Want to move on to talk about the third test. Here we focused on plastic materials including a talking book cassette, and then the DVD and the DVD that would be inside that. And then, an acrylic sheet, so basically Plexiglas, which is used in a host of different equipment and then two different types of plastic. A low density polyethylene bag and high density polyethylene. The low density is similar to the one in the corner up there. And the high density is the container that you see like in storage bins that is shown on the slide as well. Both of these are types of plastic that are found in a number of different pieces of equipment. So these results that come

out of this test could likely help inform you around other materials as well. We will publish those results this month. As I mentioned, earlier, the fourth test is in the lab right now and that began on Friday. You can see the test points there in the blue box that we will be doing. This is something that we did not expect we would do until we saw the results. We had materials tested in an unstacked configuration and then we had them in a stacked configuration, and the second test showed that it took longer for the virus to die often that test. That is not enough information to draw a correlation, but it can help to take us toward a correlation by retesting those test one materials in a stacked configuration, especially since you talk about books and DVDs, they are very often stacked either in storage on a shelf. So the community response when we published these results was can you please retest these items. That is what we did with the paperback book and then the mylar type of detected book. We are cognizant that we have been is The Ms that have very key materials that they would like to have researched. And polyethylene foam was the kind that you would see in shipping and packing material that they use extensively. This is helpful because just the way the foam is comprised or how it is made. This will add another data point. With the fourth test we are defining what will go in test five. Museums are an important part of that scope glasses being considered and also textiles and upholstery kind of textiles as well as things like leather. So there are a lot of things that are covered by hard surfaces and textiles, so the hard part is whittling it down to sets of five. And we expect to publish the phase 2 literature review, which explores those related research questions that cannot be answered by lab testing, but maybe it is being explored by other scientists who are publishing. Also you can expect a new project website will be launched. We been hosting the project material on web junction, which is the program that we manage at OCLC, but we are building a dedicated website that we will be launching soon. And we will be adding the resources and you can expect for programming and content to help you. But an important factor is to continue to learn from you and your colleagues about what is going on with your institutions, what do you need, what are you learning. So the questions that we added is a part of that.

We do have another question we would ask you to participate in. You will want to read these. We are planning on creating and distributing a wealth of resources. All of the things on this list are expected to be delivered in some form, but we are interested in knowing what is a priority. It seems like principal materials to communicate information to stakeholders and the public is by far the strongest requests. Everything that we produce under the REALM project and is under a creative Commons license that can be adapted and used. We want you to present the materials to your stakeholders and we want you to feel empowered to adapt them if you need to. Certainly to make your own local decisions, but everything is under creative Commons, including the test results. So please think about those as resources that you can adapt. It looks like webinars to learn about the results and resources would be helpful, and a summary of current research. We will be producing all of these things, and I posted a link earlier to sign up for project updates. This will make sure that you get the latest news and we post an update as soon as something is available and we are committed at the direction of the project stakeholders externally and the steering committees and the working groups that we are getting the information out to you as quickly as possible. It is part of the reason that the results are being released iteratively. We notice highly sought after and we are committed to making

sure that it gets out to us as possible. The same will go for resources. We will get out there and allow you to use it however you need to.

That covers the main content that we wanted to talk about today. We are available for questions. Anything that is come through so far?

I don't have any so far, but if anyone has questions, if you hover over the strip, you can see a chat box. So if anyone has questions, please put it in there and we will ask the questions. Are there any testing items in packaging like in the mail? On the list of materials, which is very long, things like bubble mailers and cardboard boxes are on the list. Will you be simulating tests on computers/computer materials (keyboard, mouse)? If not, is there literature out there already that focuses on that? They are comprised of plastics, which we are hoping will be able to be extrapolated from the results of test three. And we are looking to see if something is made of that high density polyethylene and the same type of material is used to make keyboards or the plastic around our monitors, can we extrapolate and think about how else to apply those results to other findings. The nice thing about some of the harder items is they are more tolerant to disinfection, which might be appealing to organizations to get things back into circulation. Is there could studies about separation of materials before reshelving? I am assuming this would be if people take something off the shelf and use it in a reading room and put it back into a been? We have not looked at that process. If the item has been handled, there is a possibility that someone coughed or sneezed in the presence of that item, it is just as likely to be infected like something in your book drop. If you are having people use PPE in your organization, Are archival boxes going to be tested? that is also on the list. Wood is on the list. Includes a vast variety and not just furnishings and how those items are presented. So are they lacquered or do they have paint and the number of variables are intense. But so are the variables that might be present. It looks like a lot of libraries shifted from 3-4 day quarantines of materials based on Test 2 results. Any comments/advice on should libraries shifting procedures as test results are published? I think this is an important decision to have locally. The biggest unknown is that we don't know what might be infectious or how likely it is to be able to become infected from these items. That is a decision that you need to have with your director or the agency where your institution is located. Many times the local health department. That is an important part of considering steps.

I can add to that that we have this operations working group see the results and discuss what they might be doing with that information for their own symptoms systems. A big part of this is a risk resource assessment as well. So you have systems that are so large where if they were to quarantine for many days, they're facing a big resource issue of having extra storage facilities and containers for that. So they balance that against what they are seeing is the amount that they see between 3 to 4 days and they are making decisions based on that. There are a number of factors to consider. There are decision-makers that are saying we will wait and that shift from test to test. And others say we are going to go ahead and change because This is information that makes that compelling. Both of those seem like reasonable decisions. We are studying that overarching question which is how much -- are we studying transmission of the virus from a surface to someone in the lab work does not test that, but that is an important

question for the literature review to track that investigation to say are there other research studies looking at that. It is hard to trace an infection. It is hard to pick up. How about polishes on wood tables for our archival reading room? We're looking at that along with paints and varnishes. Has there been any testing to determine attenuation differences between acid free paper and non-acid free paper? This has been a big topic of conversation along with the humidity in the room and there are a lot of those who are involved with archives and conservation and this is a big question for them about the difference that pH can make on materials and the attenuation of the virus. At this point we have not specifically tested any items and the other book materials are just common library materials to be as universally applicable as possible, but we know it is the question and something being considered as a possibility. Is there any related research on facility surfaces such as door handles, elevator buttons, bathroom surfaces? Thank you. This is something that we looked at. The reality that some of this should exist. We know this is being looked at by a lot of different organizations and institutions that are publishing results. We hope that we can benefit from some of that research. We are trying to be as transparent as possible with what we are learning and we would love to see other people doing it. Some of the research is proprietary. But it is a key part of this project to keep an eye on what is coming. Has microfiche been tested? It has not been tested yet but it is on the list.

Did we answer the one about putting things in a bag? This is interesting we have tested a plastic bag and so they are putting it in plastic bags and the results of that may help inform that question. There are the possibilities of higher heat and can it speed up the attenuation rate. You have to factor those in. If you put it in a black garbage bag and put it in the sun, you are creating heat that could speed up the attenuation, but if you're putting it in a plastic bag, then that may not be effective at all. We tend to see plastic as more sanitary, but that may not be the case. We hope that the research that is coming out soon will help inform that conversation.

Anything else we should be addressing before we wrap up?

I'm not seeing any more questions in the chat. The only one I received was if we are sending out a link to this presentation afterward. And the answer to that is, yes. Any last minute questions? We have a few minutes. For those of you who need to leave, we have the survey out. Please fill out the survey and it helps us with programming here.

We are glad that you chimed in with your great questions.

We can share this with individuals outside the library. You can share any presentations that we do outside of the library. We have it recorded, so you can send a link.

Thank you. We appreciate the questions in your diligence. We know this is a lot of work for everyone and a lot to take in and your day-to-day operations are challenging. Thank you for what you are doing.

I want to thank you for presenting this webinar. It has been information that the community needs. I want to thank you for doing that and I want to thank the attendees. Thank you for sitting through another webinar and we hope to see for the next one.

[Event concluded]