

*Friday, September 25, 2020*



## The Future of Natural History and Science Museums

Summary and Transcript from the New Mexico Museum of Natural History & Science's Virtual Summit

Lord Cultural Resources is a global professional practice dedicated to creating cultural capital worldwide. We assist people, communities and organizations to realize and enhance cultural meaning and expression.

We distinguish ourselves through a comprehensive and integrated full-service offering built on a foundation of key competencies: visioning, planning and implementation.

We value and believe in cultural expression as essential for all people. We conduct ourselves with respect for collaboration, local adaptation and cultural diversity, embodying the highest standards of integrity, ethics and professional practice.

We help clients clarify their goals; we provide them with the tools to achieve those goals; and we leave a legacy as a result of training and collaboration.

Our Toronto office is located within the traditional territory of many nations, including the Mississaugas of the Credit, the Anishnabeg, the Chippewa, the Haudenosaunee and the Wendat peoples. Our New York office is located on the traditional lands of the Lenape peoples. Our Long Beach office is located on the land of the Tongva/Gabrieleño and the Acjachemen/Juaneño Nations, who have lived and continue to live here. We encourage you to acknowledge the presence of the people who came before, wherever you are.

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A green-tinted photograph of a dinosaur exhibit in a jungle setting. A large, bipedal dinosaur, possibly a Carnotaurus, is the central focus, standing on a bed of leaves and small plants. It has a long, curved back and a small, horned head. To its left, a smaller, four-legged dinosaur is visible. The background is filled with dense tropical foliage, including large palm fronds and heart-shaped leaves. The overall scene is dimly lit, with the green tint giving it a monochromatic appearance.

# Executive Summary



# 1. EXECUTIVE SUMMARY

On September 25, 2020, leaders from natural history and science museums across the United States took part in a Virtual Summit hosted by the New Mexico Museum of Natural History & Science on The Future of Natural History and Science Museums. Below is a summary of the discussion from the summit.

**True disruption is not temporary: the changes wrought by a once-in-a-century pandemic, a transformative societal movement to fight anti-Black racism, and the accelerating pace of human-driven climate change have left many cultural institutions reeling with the knowledge that they cannot — and should not — return to business as usual, even if and when the current maelstroms abate.**

“It would be a mistake to try to reopen the same museum that we closed. This is an opportunity to leapfrog over where we were into some new realm,” said Judy Gradwohl, President and CEO of the San Diego Natural History Museum. She was speaking at a virtual Summit on the Future of Natural History Museums and Science Centers facilitated by Lord Cultural Resources.

Other speakers echoed Gradwohl’s sentiment that although the current metamorphosis of science-based cultural institutions is largely driven by external circumstances, these institutions control how they change, and embrace a future that builds their inclusivity, resilience, and ability to serve their communities.

And while many museums will continue to offer on-site exhibitions and events in one form or another, on-line experiences are also now here to stay. And that not only opens up the possibility for new, creative, truly groundbreaking exhibitions, it also means being able to reach audiences anywhere in the world.

“To divest yourself from the tyranny of the building is a liberation,” said Lord Chief Operation Officer Kathleen Brown, who moderated the discussion.

In addition to traditional exhibitions and on-line experiences, speakers also identified a third type of space that has ascended in importance as a result of the COVID-19 pandemic: natural, outdoor spaces.

“We feel a responsibility towards the wellness of our community to be able to engage them in a place of respite, joy, and learning about the nature that's all around them,” said Lori Bettison-Varga, President and Director of the Natural History Museum of Los Angeles County.

Considerations around institutions’ responsibility for community wellness extend beyond the types of gallery experiences museums can offer — many are also rethinking the kinds of stories they tell, and the points of view they need to represent. That can mean ensuring they include voices and perspectives from groups who have historically been excluded from museum discourse. It can also mean standing up for science itself. On issues as diverse as climate change, evolution, and viruses and vaccines, many natural history museums and science centers feel a greater responsibility than ever to present a science-driven approach to decision-making and education.

““[Science] is fundamentally a conversation with the universe. That's what it is. You're asking nature questions with whatever tools you're clever enough to devise, and it answers with something we call data,” said Ken Phillips, the Curator of Aerospace Science at the California Science Center.

While that conversation typically leads to as many new questions as it does answers, history and science museums have a responsibility to assert science-driven data at the center of many personal and political discussions and decisions.

“I don't know if activist is quite the right term. I think what we would say is that we aggressively tell the truth. The science doesn't lie,” said Jesse Rodriguez, Deputy director of the Carnegie Museum of Natural History.

That doesn't mean that science — or science-based cultural institutions — intend to tell people what to think, believe, or do. It means inspiring them to use evidence, data, and the scientific method to help inform themselves.

“Science is a way of thinking about the world. It's a way of seeing the world. If we can draw that out in the activities or in the stories we're telling in our museums, and connect them to local examples, I think that that helps people see themselves in science,” said Judy Koke the Deputy Director and Director of Professional Development at the Institute for Learning Innovation.

Naturally, museum leaders attempt to live by the same principles that their institutions are based on. They all are asking questions, collecting data, and assessing the evidence that will guide where they go from here. Some truths — such as that digital-first experiences are here to stay, and that engagement with communities will never look the way it once did — are well accepted. But with a potentially volatile future with many unknowns, flexibility, openness, and adaptability remain key attributes of long-term resilience and success.

# NMMNH&S Virtual Summit – Transcript

## 2. NMMNH&S VIRTUAL SUMMIT –TRANSCRIPT

**Please Note:** This transcript was completed by Zoom’s AI algorithm transcription software and might contain minor errors. We recommend that anyone seeking clarity to compare any questionable passages to the original recording linked here: <https://www.lord.ca/resources/tools/the-future-of-natural-history-and-science-museums?return=https%3A%2F%2Fwww.lord.ca%2Fresources%2Ftools>

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**Kathleen Brown – Lord Cultural Resources:**

Hello, and welcome to the session today. This is the Virtual Summit on the Future of Natural History and Science Museums hosted by the New Mexico museum of Natural History & Science and Lord Cultural Resources.

We're glad that you joined us today and very excited that we have you all here and just delighted. Thrilled to have our panelists here today to share their wisdom and information, their knowledge and we're very, very excited to have them here and for their kind participation.

Good morning in the west, good afternoon to those of you joining us in the east. My name is Kathleen Brown I'm COO and Senior Practice Leader of Lord Cultural Resources. We are a specialist cultural consultancy working with museums and cultural organizations of all kinds to help them be the best they can be in service to their communities.

I'm leading the Lord team that is working with the New Mexico Museum of Natural History & Science with Executive Director Margie Marino and colleagues on updating their strategic plan. This Virtual Summit is an important conversation to have. In this work, and we are grateful for the interest and commitment of our panelists who will introduce in just a few minutes.

But first I'd like to take a moment to acknowledge that our Toronto office is located within the traditional territory of many nations, including the Mississaugas of the Credit, the Anishnabeg, the Chippewa, the Haudenosaunee and the Wendat peoples. Toronto is home to many diverse First Nations and peoples, and I encourage you to acknowledge the presence of the people who came before wherever you are right now. Thank you.



Just to give you a short update on the panelists and what we what we're doing here today. We have six panelists who are here as well as the featured speaker.

The Meet the Panelists document that we can provide to you will give you a bigger introduction to who is going to be speaking with us today. But I'm just going to introduce the panelists very quickly right now.

Lori Bettison-Varga is the President and Director of the Los Angeles County Museum of Natural History and Expo Park.

Judy Gradwohl is President and CEO of San Diego Museum of Natural History in Balboa Park.

Judy Koke is Deputy Director and Director of Professional Development for the Institute for Learning Innovation, also based in Toronto.

Eileen Miller is Director of Community Engagement at the North Carolina Museum of Natural Sciences in Raleigh.

Ken Phillips is Curator of Aerospace Science at the California Science Center in Los Angeles Expo Park.

Jesse Rodriguez, is the Deputy Director of the Carnegie Museum of Natural History in Pittsburgh.

Again, my name is Kathleen Brown with Lord Cultural Resources. My colleagues working behind the scenes on the platform today are Sarah Hill, Senior Consultant, and Sophia Sousa, who's running the machine as well as Rebecca Frerotte, who's backing her up.

Our format today is to have opening remarks and then an open conversation forum to explore some questions and ideas that have been shared in advance with our panelists, which we've discussed with the New Mexico Museum as part of their strategic planning process. There are some big questions that we have. There are some smaller questions that we have. And we're going to be exploring a lot of those today.

So, I'll be asking some questions for a while, then we'll open the floor to questions from you about two thirds of the way through our program today. You can use the Q&A function on the Zoom platform and Sarah and Sophia will do their best to queue them up for you. I'm going to turn the mic over to Margie now so that she can add her welcome and to introduce our featured speaker for today's session.

00:06:32.670 --> 00:07:53.070

**Margie Marino – New Mexico Museum of Natural History & Science:**

Well, welcome everybody. I'm Margie Marino. I'm the Director at the Natural History Museum in Albuquerque, New Mexico and I'm just delighted to have these wonderful panelists with us. I know it's a huge sacrifice. They're all really, really busy, and I really do appreciate their time.

You heard everyone will have a chance to ask questions, we'll take as many questions we can as we can. But I also delighted that Kathleen is moderating this because I want to listen too.

I'm so excited to have Kirk Johnson here! Dr. Kirk Johnson is Sant Director at Smithsonian Museum of Natural History, the National Museum of Natural History, as well as a number of other places. I know he's got his hands on everything over there.

And Kirk and I go back a ways, we spent 10 years — as I do with Judy — because I spent 10 years with Kirk creating Prehistoric

Journey at the Denver Museum of Natural History. It was really one of the highlights of my life, my professional life, and look forward to hearing what he has to say. SO THANK YOU. Kirk that's my best introduction for the day. Okay, Kirk.

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**Dr. Kirk Johnson - National Museum of Natural History:**

Thank you so much. Margie, it's really great to be part of this great group of museum directors, many of whom I know and really appreciate and respect a lot. And I'm happy to be supporting the efforts of the New Mexico Museum of Natural History & Science.

I recall that back in 1996 I gave a keynote address at the 10th anniversary of your museum; and looking back 24 years at that address, I really wonder what I said about the future of the natural history, so it's fun to have this thing look back at and see where we are.

The interesting museums, most of them, were built between 1880 and 1920 when people were moving into cities. There was this construction of urban temples to nature and it was a time when people were starting to come to grips with that they lived in cities.

Many of them from rural locations, originally, but they were coming to grips of loss. And I think the best example of this was the first specimens of the Denver Museum of Natural History, when it opened in 1908, was the last bison that lived in Colorado. So the museum replaces a preservation for things that were going away — people expected never to see these things. And fortunately, many of those things didn't go away. But the museum's themselves stayed and became permanent parts of the cities that they were in social places of social learning.

I go back to the first director of the National Museum of Natural History again, George Brown Goode who took over the National Museum 1981 and when it opened the arts and industries, building and the National Mall here in Washington, DC. He had this idea that naturally museums are three legged stools with equal emphasis on collections, scholarship and audience in education-oriented exhibits and many ways that's what museums were by 1980 as well. They were basically places where people were doing some research they add collections, they built exhibits for audiences, and then reached out to education agencies and health education groups as well.

You know, in that place there was also another thing that happened in this country in the end of the 50s was the Sputnik Movement, which caused people to realize in North America that we were really leaving our science education on the table. The Russians were eating our lunch and that caused the formation of science agencies, but it caused the formation of science museums.

Most of the science centers had their start around 1960 or more or less after that. So these are two very different kinds of organizations often competing for the same audience. But as they move into the present time, they're getting more and more similar in many ways, although science centers continue to focus on the audience, whereas interestingly, museums continue to have this three-part mission.

As we think about where we're going into the future, so many things are happening. We are very clearly in the Anthropocene, the Age of Humans right now. I mean the world population was 3 billion people when I was born, it's 7.8 people now. It's going to be maybe as many as 10,000,000,010 billion people by the time I pass away. We're in a world that is changing globally at a tremendous rate and we're becoming much more global.

Museums have responded in a lot of interesting ways. I mean, there's even an increased focus on science communication, how we talk about what science is doing because now, there is some 8 million scientists in the world. When museums were founded there were several thousand scientists in the world. So the actual endeavor of science has grown incredibly large and incredibly complex, its ramifications that technology had become profound as well.

At the same time, there is a huge interest in science and we have the rise of Citizen Science, or some people call it Community Science, where individuals get involved with doing science, even though they're not considered technically trained scientists. There's a growth in the awareness of the fact that audiences themselves are data and the audience of the giant data of audiences and understanding who our audiences are what they want, what they need, how we can influence our audiences.

And then of course there's this massive digital revolution underway. I think back to the time, I went to high school where Bill Gates went to high school and after he dropped out of Harvard and came back home to work on computers. He came to school and programmed our class schedules. Like remembering Bill Gates as a young man, typing my ninth-grade algebra schedules into the math building teletype computer. To think that my high school experience was at the beginning of the digital revolution is kind of remarkable. Imagine how much has happened in such a fast time and of course now we see it manifesting itself in social media where everything is targeted to individual people. And we're wondering, as museums, how do you deal with that? How do you deal the world where it's multiple pointed knowledge access and it's in packs.

Of course, on the back side of the house, natural history museums hold the collections. Really, the three-dimensional record of everything that humanity has collected of last 300

years to understand the planet and our place in it are held in museums. We've learned recently that most of those objects are held in not-that-many very large museums in capital cities around the world. There's something like 100 museums that hold most of the world's natural history collection, probably 1.2 billion objects or something like that.

There's all that data that lives in museum collections that we have not yet accessed via digitization and computerization. And that really is the dark data of the museum world, which is probably the last great resource of dark data in the natural world that has not yet been tapped. So it's an amazing asset that has tremendous potential for future development, both for research and education.

Of course, we've become more and more resource partners for K to 12 education and become training centers for future scientists. Lots of people get inspired to become scientists by going to museums and seeing something interesting. Something that drives their curiosity, often called interesting. Museums' curiosity centers are our curiosity factories.

The other thing is really happening is the same thing was happening in 1900 which is we're aware of loss we now really see pollution. The plastic explosion. The plastic diaries and the oceans habitat loss, a great extent of species extinction and the indirect effect of those things like global climate change. These are issues that were known in the turn of the last century, and they're now being known to actually everybody in the planet as we see the world's population grow. This becomes a center and museums are starting to think, well, we should be thinking about the future. But maybe it's the immediate future, maybe it's not just a distant future. Maybe it's like five years or 10 years or 15 years out because things are changing so fast. The things we care about might disappear in 10 or 15 or 20 years.



And then finally, as we've seen really clearly with the George Floyd murder in the whole focus of the nation on social justice, the awareness that museums need to be real focal points for social justice, but also to address things like decolonization and indigenisation. The awareness that we hold in our collections objects that were made by communities around the world and often in North America and communities that live right with us today that have not had a fair stake in these objects and those communities deserve to be very much part of the construction of our constructs and our exhibits and our educational programs.

So all these things can begin to make us think that we really are relevant that we could be so much more relevant if we really tackled topics. And I think the best example for me is in a couple of our scientists came to me and said, "Hey, there's this guy Tony Fauci and he liked to help us build an exhibit about epidemics in the museum". So I said, "Let's do it". We built an exhibit called Outbreak: Epidemics in a Connected World open in May of 2018. When opened the exhibit, he said, "It's pretty likely that during the run of this exhibit will see a global pandemic". And here we are 18 months later in the middle of a global pandemic and the thing that drives me nuts, as I've been closed for 194 days is the exhibit is dark. Fortunately, we cracked on to a really interesting concept which is what we call a DIY exhibit which is we said "We don't really make money traveling exhibit. So why don't we just give them away". So we made a digital version of the museum. You can print out and put up in your own museum.

And the day that the museum closed on March 14th the Outbreak exhibit was in 148 venues and eight languages and in 42 countries. So the way that museums can spread themselves is by getting outside their walls in a variety of different ways. And I think covenants really shown museums in a new light. We've all rapidly adapted to a digital world. It's amazing how many of our workforce can actually work from home on the museum's collections educational programs and scientific research.

We've also seen the real bite, because we have business models that tie our budget to our attendance fees and that's been crushing for the museum industry. So we get to build a more resilient business model. All I say is ultimately, we live in an incredibly rapidly evolving business that is dead center in the Age of Humans and that's our topic.

This is the time for museums to really shine and I'm dying to hear what my colleagues have to say, so I'll turn it back over to you. Margie and thanks so much for inviting me to be part of this great symposium.

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#### **Kathleen Brown – Lord Cultural Resources:**

All right, well thank you so much Kirk. That was, that was really fantastic. You did everything that I could have asked you to do for this is to set it up well. To keep your remarks short and focused so that we do have time to delve into some of these bigger questions. So thank you, thank you so much for your perspective. I was writing furiously, scribbling some notes down for us to come back to in our questions later.

I'm just going to give the audience participants a little bit of a background. We've been working on an update to the New Mexico Museum of Natural History strategic plan. And we all have lots of questions and through the many, many interviews that we did and work discussion groups there were questions that kept coming up again and again. And we thought, "Wouldn't it be great if we could use our Virtual Summit platform to be asking some of those questions?" So we invited number of museum directors to speak with us and they graciously accepted and right away they got to the list of the big picture questions that we were thinking about and talking about starting with:

- What are the issues that you were considering as your institution opens to the public? Now, as well as into five or 10 years down the road? What keeps you awake at night?
- Will there be an ongoing life to digital content delivery and how will you balance that with changes to your in-person experience?
- What has changed the most other than the obvious shut down in your thinking about how you engage with audiences, funders, members, and staff?
- What lessons will you take with you into post pandemic life?
- What are you thinking about participatory and tactile exhibition elements?
- What has changed about your staffing and organizational strategy? What new skills, will you be looking for and how will this impact your professional development efforts?
- And then finally, to pick up one something that Kirk said, how will your business model change and adapt to all of the issues that you are facing?

These are lots of big deep questions I realized that it's hard to get into that level of meta questions in a in a short concrete timeline, such as this, so I'm going to ask questions that relate to these questions and hope that as the panel has had time to think about prepare their responses.

I'm going to start with Judy Gradwohl. Judy, you heard me mention when we spoke about this yesterday that your blog on the Center for the Future of Museums website, you talked about how the NAT was going to stay closed for the rest of the year.

Specifically, one quote that you said that “You will enhance actions online and in nature”. And then another quote was, “It gives us the impetus to refocus our efforts, where they will make the most impact”. So I'd love for you to unpack that decision. How you came about it and what you hope to achieve?

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**Judy Gradwohl - San Diego Natural History Museum:**

Well, thank you. And thank you, Margie and Kirk for setting us up so beautifully. I was very pleased to have an opportunity to write that blog because it gave us, it gave me a chance to sort of set out our thinking about why we made this decision to stay closed through the end of the year.

Here in San Diego, museums were allowed to reopen couple of weeks ago and then we had a scare last week that we might have to close again. I was so glad that I wasn't sitting there fretting about numbers of cases at San Diego State in the student body.

Back in May, I was sitting alone in my house, working in the museum and I issued a manifesto. I always thinking hard about the future of museums and realizing that it would be a mistake to try to reopen the same museum that we closed. This is an opportunity to leapfrog over where we were into some new realm.

Our museum was founded in 1874 we're coming up on our 150th anniversary and we're thinking a lot about the future. And so, I proposed to the staff and board and what would it look like if we created this blended model of on-site, online, and in nature. We are a natural history museum, and our ultimate goal is to help people get out and understand and love and care for our local environment. And so, closing the museum really

allowed us to refocus our efforts online and in nature activities and really build our chops in those areas so that when we do reopen, we'll have a blended model.

I'll just end by saying we were shocked at how at the response to our online programming. We have transcended time and space and we commonly have far more people attend our evening presentations that could possibly fit in our 300-seat theater. We have people coming in from all over the world. We've been able to do Spanish language presentations. Our mission is binational and so we have just in this blossoming of activities both for the general public and now for school-based audiences.

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**Kathleen Brown – Lord Cultural Resources:**

Well, wow, that's, that's amazing. I mean, in some ways, it's really liberating, isn't it? I mean to divest yourself from the tyranny of the building is a liberation of sorts. How interesting. So, what are you thinking now? About when you do reopen because the end of the year is not that far away. What are you thinking about and what will come out first? And how will you build? What you're saying is you're not pulling back, you're not retreating in any way, you're actually moving ahead in new ways. So, what, what are the first things on your list when you do open?

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**Judy Gradwohl - San Diego Natural History Museum:**

Well, we're doing a small amount of construction while we're closed as well and then our Volunteer Corps is curating hikes that they can lead. We have a Volunteer Corps that takes people on hikes most days of the week during this season so they are figuring out how to get people out in nature and curate hikes for our local audiences.

So we will probably continue with both in person and online educational work. I don't see the schools being able to do any kind of in person on field trips in this coming year. So whatever we can do to help schools after care and keep their kids connected to science and nature, I think, is going to be critical. And I think we probably will look at this blended model of offering both, but will at least have our systems in place will have some of our skills built and as all of you know it's important to get material in the can, you can release later. So that's part of what we're doing as well.

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**Kathleen Brown – Lord Cultural Resources:**

Great. How interesting. Well, thank you. Thank you for being brave and leading, that is real leadership. And it is inspiring, I hope, for others on this call and elsewhere.

Just a reminder of those of you in the audience, there is a Q&A function. What you will do is you will use the Q&A to queue your questions and Sarah and Sophia will queue them properly and get them ready for us for a little bit later on in the program. But I just wanted to draw your attention to the Q&A a function. you can put questions down now for Judy as we go, or wait a little bit and ask different kinds of questions.

I'm going to go to move to Lori Bettison-Varga because she's got lots of stuff underway. And I think that she's also in a position to say, what are we going to be doing that's different. So Lori, I'm going to ask you, you've got lots of projects going on, what are the Museum of Natural History of Los Angeles County's plans with respect to balancing as Judy talked about? The remote, the on site, and the outdoor? What are you thinking about that right now?



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**Dr. Lori Bettison-Varga – Natural History Museum of Los Angeles County:**

Well, first let me say we're not actually doing construction right now. We have construction going around us both in Expo Park and also in Hancock Park, where LACMA is now in a major project. So we're doing a master planning project. At the Tar Pits and the Page Museum and at the Natural History Museum.

We were well into design, development and going to be in construction documents to start demolition on an old closed auditorium that hasn't been open for at least 15 years and a new project there that we had already preconceived as the front porch on our south entry to Expo Park. I could say that we built that project around this idea from our strategic framework, which was really realizing our role as museums of four and with Los Angeles more fully. We are the oldest publicly accessible Museum in Los Angeles and Expo Park the Natural History Museum

And you know, Kirk talked about collections research and the public facing. And I think we're moving beyond the intersection between research collections and visitor experience to actually fully facing the community and community engagement programs. We've built out a whole portfolio of community partnerships. In the last year we had 15,000 off site engagements beyond our mobile museum program that really was the representation of us out in the community with community partners serving Angelenos needs and we built that based on a lot of our are facing our research around what our community needs how they see us.

I think we built kind of this portfolio of partnerships; I have to say the community in Los Angeles is suffering. I think it's really hurt by this pandemic and so as we're thinking about the future. We really feel the importance of being a place where the

community feels welcome, they feel like they are engaged with us in developing programs and ideas for exhibitions that they know that they can come to the space. Learning and engaging have it be a part of their life and the south facade of this museum is not presenting itself as a welcoming place. So we're going to change that.

We do know that the Lucas Museum of Narrative Art when it opens —because it's now just a huge structure going up quite rapidly in the park. We don't really know what the content is going to be or the programs yet. But it will be a draw. So not only will we have the opportunity for additional visitors — both local, regional and international — to what people will think is going to be a, you know, George Lucas's museum without content. Who knows what that's really going to be yet, but we know will have an opportunity to engage external visitors as well as this really critical community facing work.

I would say that we're thinking about the onsite piece as it relates to these locations. However, like Judy was saying we pivoted strongly into digital, we're doing a ton of work with all of our educator live events, they are sold out, so to speak. We have a huge need here for that. And we've really been able to build into that world pretty rapidly. We've had our Butterfly Pavilion open. Nature gardens and Butterfly Pavilion are open and part of that for us is speaking to the wellness of a community that doesn't have the accessibility to nature and the way that you might have in parts of San Diego.

And so, we feel a responsibility towards the wellness of our community to be able to engage them in a place of respite, joy, and learning about the nature that's all around them.

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**Kathleen Brown – Lord Cultural Resources:**

I'm really interested in what you said about your community engagement and how that has shaped moving forward. I wonder if you could tell us a little bit about that. While this is a little bit off topic, but you raised it, so and I think I want you to maybe unpack that a little bit. Where does it live in your organization, how was that done and how will you maintain those relationships that you that you made?

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**Dr. Lori Bettison-Varga – Natural History Museum of Los Angeles County:**

That's a really great question. So one of the things I did when I got here, I'm just finishing my fifth year actually which is surprising to me. But one of the first things I did was realize that we were doing a lot of things internally, we know what's best for our audiences, we had demographic data. We knew who was coming, but we didn't really know what they wanted.

Right, so, pushing towards that outward looking on this is really critical, and I had in my team someone who wanted to do that work to start building out partnerships because it takes time. They have to trust the organization — feel like, you know, we really are welcoming them into the space by working together with them and then we moved into our education and outreach program. So, I now have a Community Engagement Manager. I'm sure we're going to hear a lot of this from Eileen, but a Community Engagement Manager and then she hired a second person and we are really developing and have developed strong relationships with, you know, five to 10 organizations that we know we can directly impact right now with the resources that we have and what they need, building on the information we

have from kind of this, you know, ethnographic based research that we did with global in that focus topic research really understanding what the needs are.

And that connectivity now is it's a little bit more difficult, right now, obviously, because we're in, Zoom, we can't reach out as directly and also because those community partners are really facing the needs of food security and economic issues. We're developing more robust community partnership memberships so that when we're reopening, we have a direct conduit and can really make sure that they know that we're accessible to them and support them. So, pivoting that community engagement in this particular timeframe is a little bit difficult.

I would add one more thing Kathleen, just because I think it's really important to know as we talked about museums. We talked a lot about the community and community work. We are in parallel with so many institutions by really thinking about our own staff and our own staff's health and well being equity opportunity, the way that they feel a part of the organization. We're big, you know, we got a lot of staff and how are we helping them, you know, communicate with each other, but also to be participatory in the same way we want our community to be in the work that we're doing.

So that was a lot. Sorry.

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**Kathleen Brown – Lord Cultural Resources:**

That's great. I had a lengthy conversation with Lori Fogarty(Oakland Museum of California) a couple of weeks ago about this very topic and in talking about how she had evolved and changed their paradigm of community engagement and how it had been so instrumental and fundamental to their transition that they were making. But the question that she had that I had

that, probably everybody has, is how you keep it going? Now we've had to, as you say, you know it's much, much harder to do that because so much of that is face to face shoulder to shoulder, you know, get in there and do it.

Right, but it sounds very, very promising. I'm very excited for you and look forward to seeing how all that unfolds.

Just one more thing, how do you think that your mix will change in response to or beyond the pandemic? How do you think your mix of onsite remote and outdoor will shift? What's your sense of that?

00:35:19.530 --> 00:36:24.270

**Dr. Lori Bettison-Varga – Natural History Museum of Los Angeles County:**

Well, , I think we're positioned well at our locations because we are indoor/outdoor at them, to be able to, you know, manage the opening and the closing to be able to have visitors when we can. When the weather's good which it normally is in Southern California.

But really, we know the bulk of our work is going to be digital for I would imagine the next year to 18 months. So, I believe, and I think we have audience to attest to as well that we have the opportunity to expand our sphere of influence. And I think if we're doing that engagement in the digital arena really well. It will only entice those folks to come visit us when we're really able to have those audiences back and so I don't see us ever moving away from the digital. I mean, everybody talks about digital, we have to just shift all these people that were used to physical facing and analog work and boom, like overnight, right. And I've been amazed at what my team has been able to do — just thrilled — and we have more to do. And we're thinking about some restructuring that will relate to that.

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**Kathleen Brown – Lord Cultural Resources:**

I think that's probably the next frontier, as you say it's restructuring and realigning job responsibilities with affinity, with interest, with passion and so on. I think it will be an interesting next step for all institutions. So very, very exciting times for you.

Judy Koke, I'm going to put you on the spot for a few minutes, my friend. The Institute for Learning Innovation is one of the great treasures in the museum world. So, we're so happy to have you on this conversation because it does great work. So, we're so happy to have you here. Through the work that you do, you get exposed to lots of different programs and emphases and what people are looking for money for and I know that we're, just past and just coming up on the big grant writing deadlines. And so, it's grant season. And I know that that is all in your head right now. What are our science museum clients thinking about with respect to remote outreach and digital services? What are people planning for now that may be different from in the past?

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**Judy Koke – Institute for Learning Innovation:**

Well, thank you, Kathleen and thank you to Margie as well for the invitation.

And you're right. I think people are thinking very differently. And I think in the spring it was kind of tactical, “Oh my gosh, what do we do, given our sudden circumstance?” And I think we've now started to evolve into a more strategic process, thinking about how the future might look different, how museums might look different, and if we're really honest about it, attendance to most, maybe not the people here, but most science and natural



history museums was in a bit of a slow decline over the last decade. And so, thinking about why that is. What does it mean to be a partner in our community?

I think COVID has really underscored the importance of doing that work and thinking about our role in our communities. School groups, in particular school visits. Schools really struggle with both the finances and the time of participating in school visits and I think COVID has pushed even the most reluctant teacher into online visits in an interesting way and the principals. Those I've been speaking to are really thinking about the, you know, the value of actual museum visits when they can be achieved. When they can be achieved virtually, which I think makes everyone in this room shudder, because we all appreciate that. That that day away from the classroom in the museum is probably extremely valuable as compared to one more day in the classroom. But I think what people are looking at and thinking about is how to activate these digital school visits in a way that they become multi visits. So, with a digital visit, it's much easier to do a multiple visit situation and build really meaningful and deep relationships with classrooms and with schools. So that's one thing I'm seeing a lot of.

There's a lot of discussion around diversity, inclusion, access and equity in the digital world. So, as we moved everything on to the digital platforms we did reach a lot of people, but we're starting to see that it's a lot of the same groups that always came to our museums and it still tends to exclude the people that have been under represented in our museums. So, people are thinking really hard about how to present online programming in a way that increases access and equity, particularly with libraries being closed because those were always the centers of trying to balance that digital divide.

People are also beginning to wonder about digital programs and revenue generation. So, we're doing a lot of work, actually with Nick Honeyset at a Balboa Park, thinking about models for revenue generation through digital platforms. And what does that take.

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**Kathleen Brown - Lord Cultural Resources:**

So what's the answer?

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**Judy Koke - Institute for Learning Innovation:**

We don't, have it yet. And then finally, I think a lot about the opportunity. We all have in this moment about how we position ourselves. Like, do we put ... There's such an emphasis on science and science learning when actually, we're an important contributor to our community's health and well being. How do we reposition ourselves? how do we talk about ourselves differently? In this work to really underscore our public value because absolutely our public value lies in creating opportunities for really meaningful science experiences but museums are so much more than that. So, thinking about repositioning how people think about our public value is something else.

And then if I would to add one last, two last things, maybe, sorry. One would be professional development because I lead the professional learning piece of and we're having lots of inquiries about professional learning for staff or volunteers. Museum volunteers in this time of social stress need to be really culturally sensitive and boards, frankly, making sure that boards are really thinking about this, the social situation that museums are operating in.

The one last thing that I wanted to say was, I, I see people's definition of science literacy actually shifting. It's been shifting, but rather than understanding science concepts I see people really focusing on the concept of science as a way to shape questions and how to answer questions and so a lot of the conversations we've been in around potential proposals are shifting that definition of science literacy. So that's been really interesting to me.

00:43:16.830 --> 00:44:04.320

**Kathleen Brown - Lord Cultural Resources:**

Hmm, well, sounds like some great papers in in the works.

Kirk. I'm going to ask you a question that's related to this in thinking about or looking at from, from your perspective, and what people are looking for funding for. I wonder what does the role of digitization of museum collections play in digital outreach strategies, whether it is actually sort of catching up and taking a hold of people beyond research scientists, what are people doing with the stuff that they're digitizing and how is that go beyond the science itself but into understanding of science?

00:44:04.620 --> 00:44:59.490

**Dr. Kirk Johnson - Smithsonian National Museum of Natural History:**

Well, it's a really interesting question because of large collections and we now have over 9 million objects digitized in our museum. And we realized pretty quickly that the primary users of those sorts of collection data are not the general public.

There more land managers who were being digital downloads of data, other museums, other scientific researchers, and at the National Museum, or we get about eight to 10,000 visiting scientists a year to see the collections and makes a lot of sense.

We've digitized. The 6,000 objects in our educational space are curious and even that seems to be an overwhelming amount of stuff from an educational point of view. So, I'm seeing it a split a fork in the road, and I'm not entirely sure how best to use the deep dark data of museum collections for educational purposes. I think that there's two very distinct streams.

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**Kathleen Brown - Lord Cultural Resources:**

And that's the reason that I asked that question because sometimes you know when you ask an institution what are you doing from a digital outreach or remote access point of view, that's one of the first things that they'll say is, "you know, well we've got our collections digitized". And so, my question is how is that being used and how does that further your all dimensions of your, of your missions? So that's why I ask the question. Do other people on the on the panel have other thoughts about that before we, before we move on. There's so much more to explore here. Other thoughts? Judy?

00:45:43.470 --> 00:46:44.670

**Judy Gradwohl - San Diego Natural History Museum:**

Yeah, I just want to add that we're actually adding to the database of localities. For example, our botanical collection has maybe 200,000 to 500,000 specimens that are digitized and I believe we have almost 200,000 additional observations from community scientists through this Naturalist app. So, it's the whole notion of digital collections, I think, is changing. I mean, what do we need? Ownership and I think this is one of the things I've been thinking a lot about is skins versus tissue or you know what constitutes a specimen in the in the future. And as it's getting more difficult to collect mammals. How is that going to affect natural history collections and our, our space needs which as you know is, is always a major sticking point?

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**Kathleen Brown – Lord Cultural Resources:**

And so, the Naturalist is an app that you all put together, does that support your Citizen Science Program, or how does that work?

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**Judy Gradwohl – San Diego Natural History Museum:**

The Naturalist app is used all over the world. And it's just an app on your phone when you're hiking out in the world, or in your backyard. You can take a picture of something and upload it and an expert will identify it and, in our case, our botanist, I think, has the world's record for identifying botanical specimens hundreds of thousands. And so, if it, if it has, if it's identified by a scientist depends, because it has scientific value and we're using that to understand range maps. We've had several publications with co authors of books and have just found the things they were photographing.

So, I think I'd be interested to hear what other people are thinking about sorting collections. Yeah, just digitizing what we have.

00:47:43.800 --> 00:48:29.580

**Kathleen Brown – Lord Cultural Resources:**

Well, I want to come back to Citizen Science in in a little while because it was something that that occurred to me as we were preparing for this.

00:48:30.720 --> 00:49:43.980

**Dr. Lori Bettison-Varga – Natural History Museum of Los Angeles County:**

Not a ton of that work, and I would just say, you know, people want to see one of the outgrowths of that has been the Cal Academy and Sam Cisco and US Co launched the City Nature Challenge Competition, which has been a way to kind of highlight community scientists all around the world participating in these research projects and it's grown. I mean think we started with just the Bay Area in LA and now it's worldwide over 160 cities and just four or five years. So, there's a growing understanding of the power of this we switched to the language to Community Science because of the nature of “citizen” and it's been interesting to see how people have talked about that we find in a more welcoming term for our, our community.

But we do a lot of it. And I think just like, Kirk was mentioning, you know, our urban nature Research Center is directly connected with our community science program and not only digital collections, but also behavior about animals that you can get from us these observations that you wouldn't otherwise have. Because, you know, you only have three herpetologists in Southern California. They can't see everything.

So it's really powerful. It's actually really powerful.

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**Kathleen Brown – Lord Cultural Resources:**

Great. Excellent. Okay, I'm going to switch gears for a little bit here so we can stay on track. I'm going to move to some discussions about interactivity and tactile exhibition elements and so on. And I wanted to specifically put this this question to Ken Phillips about the California Science Center. How does the Science Center plan differently about participatory tactile exhibition elements? Now, what are you thinking about with the



with the advances of touchless technology and the issues around touch contagion, and so on? And how do these alter your plans for space science content and advancing the gallery that your virtual background shows. How does what is changing about thinking about tactile or hands-on exhibition elements? What are you thinking in relation to your aerospace science program and where does that go? what are you thinking about now? What advice would you have?

00:50:58.200 --> 00:59:11.760

**Ken Phillips - California Science Center:**

Not sure you want advice for me, but I'll share

First of all, thank you, Kathleen, that's a great question and Margie, thanks so much for inviting me to be here. I'm doubly honored to be on the panel because I'm the only one that doesn't have a natural history background. That's not what I did. But, um, you know, I do have the responsibility for the aerospace collection here.

It is fiercely hands on always has been and it has an interest in history. I'll share just a little bit because it might put my answer and context. First of all, we were founded, as Kirk indicated, right in that baby boomer window — 1950 — so we were not natural history. We were the more science in our genre that came along later. And then in 1998 under the leadership of our president Jeff Rudolph, we went from the old California Museum of Science and Industry into the California Science Center that you're familiar with now major transformation; programmatically, architecturally, and in every other way and that transformation took place.

And I think Margie, this might be relevant for you and for your team. In the aftermath of a very rigorous two year long strategic planning effort that the late Roy Schafer lead us through, we

emerged from that planning process knowing who we were and understanding how we would go about doing what we do and the reasons for doing it, meaning that we're there to serve the public. We have an unconditional welcome to all people and our mission statement being that we inspire science learning and everyone has really carried us through.

So that said, when things like this come along, they kind of rattle a cage, but they don't confuse us about who we are because we know that and we work really hard to get to that point. So, to get to the answer that sort of the nuts and bolts answers that I think maybe you're interested in, we have looked at the California Science Center as a welcoming place for all people. We are fortunate because we are a donation-based institution which means that we're free. We are a division of the California State Governor's office. We're in their office of natural history. So that's our home agency and the state provides operating resources. So, we're free throughout California Science Foundation.

To focus on the programming and all of the content that goes inside the infrastructure that state provides. So, what we're left with is a situation in which we have interactive exhibits in for content areas we've decided that we could pare down the capacity to about 25% of what we what we normally do. We need all the detailed calculations that my colleagues have done. How many people can safely be accommodated per square foot? How do you think about the probable greatest method of transmission for a virus in an enclosed environment? Is in the lavatories? Is it at the doors before you come in? Is it when people touch knobs and things on interactive exhibits? And having done all that research and that thinking, we decided we could safely, for a number of the exhibits, translate them into non mechanical interactive things. So, they're activated or they do what they have to do by some kind of a proximity sensor other exhibits. Unfortunately, we get there so fiercely hands on

that we're going to have to, quite frankly, rope them off. They'll be visible. There might be staff there to operate the exhibit rather on behalf of the visitor. Um, that's a little bit more staff intensive for us. But it brings the exhibit alive in a different way because it's no longer the exhibit itself. Trying to communicate the main message. It's a staff member that's interpreting it so you can think of it as an expansion of our guest services force more into the exhibit operations and they had done before.

One of the things that's most concerning to me as a curator is we have online from the Smithsonian Institution and the National Museum of the US Air Force a number of wonderful objects from their collections. So we are caretakers of objects from the national collection. And we wanted to make sure that we were doubling down now in this time to do research on things like humidity control and temperature variations and all these fluctuations that you really can't get your hands around experimentally when you have guests that really have their demands to be met. And that's what were they were, servers to the public, but now it's an opportunity to take a critical look at that collection.

With the permission of the Smithsonian, we have we encased all of our major film spacecraft into what I think are much more, much, much better ways of preserving and presenting those artifacts and we're starting to ask serious questions about how can we create an opportunity for people to become involved in the collection which we can do digitally that they can't physically. So, for example, what you see behind me in the virtual image there. It is a magical wonderful object, you can get very close to it, but you can't go inside it for a variety of reasons, all the which you know. But what we've done is a series of high-resolution digital images that allow people from our website to tour the entire vehicle, you can go and sit in the commander safety one, you can see the views of the astronauts, you can literally float all over the thing and then we've implemented to

go along with the interactive exhibits, which we will hopefully present to the public. If we open and that's not clear yet when that will happen.

Another series of outreach efforts that basically follow the programming that we would normally do. And so, we have opportunities for people to do what we call “stuck at home, science”, it's kind of humorous these sort of work along activities—we have astronaut interviews that we've had in the can for a while, actually. And we repurposed them for this purpose, so that people can be the astronauts in there — about a dozen or so that you become friends with over the years.

And we have a podcast—I just interviewed the other day the wife of Carl Sagan (Ann Druyen). Wonderful, wonderful woman. So we have a podcast series that called Ever Wonder that my colleague, Dr. Perry Rock Johnson, heads up. He's a system curated for aerospace science. So, we've got both a balance of programmatic as well as interactive things that we're thinking about doing for our institution when we go live again. Our president Jeff Rudolph is an amazing leader. He really does think strategically. He's always a step ahead of what everybody else is thinking.

We had an opportunity, possibly to open on July 15th and we backed off of that. And we decided we're going to play this card conservative because we don't want to open and then have to close again. That would be really problematic. And so, we are thinking of getting our heels in for the long haul if we have to. It's been problematic in terms of layoffs that we've had to implement. We simply couldn't help it, because I'm our some of our programming is revenue based. And so, we're thinking right now that will have to expand what we're doing, figure out ways to make interactive exhibits more accessible for people when they come back. They will probably be an ongoing digital characteristic to everything that we do for now.

And actually, this COVID environment has been a blessing because we've learned to use media. We're much, much more savvy about media than we ever were our entire science workshops that served 5,000 kids all done digitally.

The work that we do with California is new village girls Academy, which is an alternative high school for young women is all digital. Now, and they used to be here on site and so, we've really been forced to get really fast on our feet with these.

Hope that kind of answered your question.

00:59:12.150 --> 00:59:50.310

**Kathleen Brown - Lord Cultural Resources:**

It does and it leads to other questions, of course, and I wonder what some of the other panelists are thinking, to speak next about. They reopen this week and how they were dealing with similar issues, but it sounds like to me what you're saying is, that you will minimize the risks for the time being. You will augment your digital outreach and your digital facility with media and with other kinds of digital assets and work your way sort of slowly forward from there.

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**Ken Phillips - California Science Center:**

Preparing the institution. For example, when we get there, we can hit the ground running. When we open again and we want to do it right first time and so, we want to make sure that we understand where the likely sources of transmission might be there are physical. I mean, I don't want to get into the details, but they were pickle.

Hand washing stations that were trying to decide where they might most strategic would be located. Ways that we can interact with guests. They can see things that they can't interact with, I address that a little bit more. How do you make that enticing to them? How do you make that available to them, even though they can't physically touch it? And so, these are all things that we thought about doing so when we open the doors again. Again, we're looking at about 25% capacity.

And for IMAX Theater that'd be about 100 people because it's 400 plus seat theater. We're thinking of ways to have roughly one quarter of our audience, we see about 2 million people a year. So one quarter of those we think we could probably about 500,000 a year, we think we could serve

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**Kathleen Brown - Lord Cultural Resources:**

And do you think that these changes that you're undertaking will go into the future or is there a return in mind or in what your thinking about?

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**Ken Phillips - California Science Center:**

See, that's a philosophical question. I mean, I don't know. In one application in the interest of full disclosure, I'm taking a break. I'm taking time off right now from the California Science Center, and I have been assigned full-time to contact tracing the State of California. And I do that full-time. I lead a team of about 2,530 people and we do that. That's what we do all day every day. And this is a welcome break for that. I have permission to do this.

But that said, there could be possibilities that this thing could come roaring back in a way that you and I can't even conceive. And we're fortunate that it's a 5% killer and not a 50% killer. If it were that, half the US population is even if we could be dead.

Other question is post opening. How fast can you be on your feet in case you have to retreat? Again, what would that look like? What could you do another way that was not as disruptive as it was initially because it really caught us by surprise initially, so we should be smarter now.

Short answer to your question is yes, we will probably keep in mind, a much more expanded digital presence so we can rely on if we have to, but also because we think there's a lot of efficacy to it, even if we didn't have to and ask for the COVID situation. I kind of hope that we don't lead ourselves into thinking that all of our problems are gone away, and that something like this couldn't get our institution to do.

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**Kathleen Brown – Lord Cultural Resources:**

Mm hmm. So, resiliency and really thinking flexibly and watching all the signs and being very vigilant and responsive and all of those things. So that kind of skill set is what you need to encourage the folks around you as well. You know, it's a museum. People can sometimes not be the most flexible in my experience, but it sounds like what you're saying is that we need to build flexibility and resiliency into our thinking and backing into our organizations.

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**Ken Phillips - California Science Center:**

And I think the California Science Center will emerge permanently changed, but in no way damaged because of our

strategic plan. I mean, if we didn't have it, we didn't know who we were, as an institution, we would be really been in rough waters right now. Yeah, but we put so much effort into that and you said two years of real thoughtful in your face, who are we.

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**Kathleen Brown – Lord Cultural Resources:**

For me was a very, very fulsome answer. Thank you. Thank you very much for that response.

Eileen, your institution you opened on Tuesday this week. So, what was that like? What's changed from a strategic communications and visitor experience standpoint? And what do you think will be permanent changes to your communications and visitor experience strategies beyond the pandemic?

01:04:04.530 --> 01:05:54.180

**Eileen Miller - North Carolina Museum of Natural Sciences:**

Thank you all so much for having me. It's been wonderful just to hear what all of the panelists have shared, and I learned some new things along the way and can appreciate everyone's position. It's been terrific. Thank you so much for the honor.

We did resume on site operations on Tuesday. It was an exciting time for us to welcome our guests back on site since mid March, we pivoted to delivering our experiences online as all of you have and during this planning, of course, the health and safety of our guests and staff have been our primary priority throughout and that will not change.

In our communications online, since we've pivoted to only digital and now in person, again, you know that we've tried to share that science doesn't stop and it's how relevant it is in all of our lives. Initially, we also shifted some of the timing of our



communications, as I'm sure, some of the panelists have is as well. Some of the communications that were monthly were pivoted to weekly or even bi-weekly —so there's things that have changed.

Now we're looking at that, again — it was the right change at the time related to our communication, but we're continuously looking at the data to see if people are fatigued by some of the online communications and continuously changing that strategy. Right, so, we're shifting that schedule again to be a little less frequent in some areas and more frequent in others and will continue to look at that data. We're looking at our stakeholder feedback and engagement to determine the frequency of all that communication.

01:05:55.230 --> 01:05:59.100

**Kathleen Brown - Lord Cultural Resources:**

And are you doing that through surveys mostly or how are you engaging them?

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**Eileen Miller - North Carolina Museum of Natural Sciences:**

We are and I really enjoyed something to what Lori shared earlier. You know, looking more so at our stakeholders —not internally really what we necessarily think we want to share, but really understanding what people want to learn. You know that's a shift. I think we're going to continue to remain agile with our communications and our engagement and listening to feedback.

The course about safety and health and security and continuously changing, our on-site strategy — currently many of our areas of our museum or are closed. But we're trying to share a balance between digital engagement of our permanent exhibits and then what they can see on site. I loved when, I think

it actually was Lori again who said that blended learning experience that's really now. Now that we're open really a focus of ours to and continuing to welcome people back and highlighting and experience that they might have seen if they've visited us many times each year, looking for that new way to help inspire how they're thinking about our permanent exhibits. So it's been it's been a rewarding and challenging time.

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**Kathleen Brown - Lord Cultural Resources:**

Well, exciting too. A learning period — you're taking in all the information and working with it right away and the immediacy of responses.

So, you know, critically important right now. So, what the sense that I'm getting from everyone is that you just have to be on it all the time, open to new inputs, new ideas, new information, different ways of collaborating to achieve new outcomes. It's very exciting. We've still got a few more things I'd like to get panelists to respond to before we open the floor to more questions.

Jesse, I wanted to ask you specifically about the Carnegie Museum. It is one of the country's oldest, if not the oldest, Natural History Museum in the US and you have a very ambitious goal in your strategic plan, which is to be the world's most relevant Natural History Museum. It's a pretty big goal and you talk about three different areas of endeavor to achieve this goal: telling big stories that resonate, taking a visitor centered approach and promoting financial systems sustainability. So, I'm really curious — in a post pandemic museum world, what does financial sustainability look like to you and to the Carnegie?

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**Jesse Rodriguez - Carnegie Museum of Natural History:**

Well, that's a wonderful question...And, you know, obviously it's not lotto tickets or scratch off tickets, it's a real necessity, because what we do in many of our cases, what we do as I say to my staff is, we work in the real world. And so, you know that costs time and money.

One of the things that this pandemic has taught me is part of business acumen — part of being sustainable is being prepared and as some of my colleagues pointed out before this pandemic caught most of us off guard, we were completely unprepared. But from a business continuity perspective, this caught us off guard.

We had to scramble around to get some of our staff members who were essential to continue working to be able to work remotely. So, one of the lessons that I would love to pass on is that a business continuity plan is very vital and this, this has taught us that we definitely need to do that and a business continuity plan that's really worth its weight in the time that you spend on it is a business continuity plan that doesn't get done once and then you forget about it for 10 years. It's something that is nurtured and reviewed from time to time so that if something terrible happens like a global pandemic that requires us to shut our doors, it is not 10 years old and you're wondering why the policy talks about our dial up modem system.

What we want to do is have realistic plans to keep us moving forward. And so, when we talk about financial state of sustainability, I think that's part of because if you cannot operate, it is highly unlikely you're going to be able to bring in any kind of funding or any kind of resources to help you. But I also think when we talk about financial stability sustainably, it is, as my colleagues have said, being open to new directions to being able to take your team and pivot into a direction, into an

offering to the public that has value that they're willing to pay for, but that's maybe something you haven't considered.

When I was preparing for this, I often thought about how sometimes in museums, we do make the mistake of separating ourselves from the community that we want to serve that we are separate apart. And we've actually had many of the same discussions that we've had here today about how can we take our collection or how can we digitize your collection and have some element of it be monetized. And one of the things that I've thrown out for my team as food for thought is that we ourselves are consumers of information, not just the visitors. So, what resonates with us might also very likely be the path we want to take for our consumer.

So, I'll give you a quick example and then, I don't know, I don't want to monopolize the time. I love the Gettysburg battlefield. It is effectively, it's a massive Museum, it's an outdoor museum. I can only have the time to go about once a year, my mind, my trip, my physical visit to that museum is once a year, I can assure you I am constantly taking time to listen to podcasts audiobooks, and YouTube blogs about the battlefield to enhance my knowledge. So, if I as an average consumer interested in learning more about something that I only physically visit once, I can I take that lesson and apply it to my business world. Look at the museum and say they are surely people out there who might only be able to physically come to our building once. However, their ability to connect with us can be enhanced — their ability to learn — can be enhanced by a variety of digital products and the variety of partnerships that we can make with people who have inroads into the technologies that can help us share the education, share the mission. And let's be candid, financial sustainability is important so we could likely earn revenue off of these new endeavors.

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**Kathleen Brown - Lord Cultural Resources:**

And what or can give us a hint of some of the things that you're thinking about?

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**Jesse Rodriguez - Carnegie Museum of Natural History:**

Well, I think, I think like my peers are we are looking for, you know, some things as simple as online and digital field trips for our community partners. You know, one thing that we're starting to explore is looking at the value of having companies sponsor any kind of digital content that is seen by individuals and I've used this, you know, somewhat practical analogy that there are people outside of our sphere, who make their living making YouTube videos, somebody is willing to pay them for their content. So, if we are able to make compelling science-themed content for the public, there are likely companies that will want to have their names associated with that. And at the end of the day, we have to be honest with ourselves and understand that the way to justify the value to a sponsor is showing them how many views. How many eyeballs are on the content we create.

01:14:35.970 --> 01:16:15.510

**Kathleen Brown - Lord Cultural Resources:**

Okay, I get it. And, and that it comes back to some of the attributes and characteristics that we talked about, as you said, flexibility, the openness, being open minded to new possibilities new partnerships, all that good stuff, which has a different set of skills than then has been traditional in natural history and science museums past.

I have one last question before I open it up to the floor and that is about science advocacy. That was to be the theme for the Association of Science and Technology Conference this year, was in essence about science advocacy.

So I'm going to make a statement and then ask a question: Science and one's belief in it is at the heart of some big controversies right now — appropriate COVID responses, climate, science cause effect and so on. How has your position on taking a position changed at your institution? 10 years ago I was hard pressed in talking to natural history museums directors about their willingness to take a stand on climate science, for example, or evolution or some of the other things that museums get into trouble for. How would you describe your institution as activist neutral or what are the next steps and what's next for you? What are people thinking about that?

So, Jesse. You're on the spot right now, you get to answer first.

01:16:15.900 --> 01:17:32.430

**Jesse Rodriguez - Carnegie Museum of Natural History:**

Um, well, I don't know if activist is quite the right term. I think what we would say is that we aggressively tell the truth. The science doesn't lie.

And there's no, we don't have any, you know, the various or political goals, other than to tell what science is telling us. And I think that's what most of my peers would like to say. But one of the things that we are looking at, and I think Kirk struck on it, is this impact of the age of humanity on the world around us and we are making that one of the major themes for our museum, to talk to our public, our community about what we have done both good and bad to the world around us how it impacts nature. And I think the last kind of thing that resonates with a lot of individuals is to remind our community in ourselves that we

are not separate from nature. We don't exist in a bubble out and all of nature happens around us. We are in fact part of nature and telling that story. That when we do something, whether it's dumping garbage or cleaning up and doing something that's positive impacts the world around us, because we are inherently a part of that world so that that's one of our primary businesses.

01:17:35.010 --> 01:17:48.270

**Kathleen Brown – Lord Cultural Resources:**

Okay, great, great. Well, I'm getting messaging for time check, But I also just want to ask Lori and Judy Gradwohl your response to that question too — I'm really eager to hear it.

01:17:48.810 --> 01:19:02.280

**Dr. Lori Bettison-Varga – Natural History Museum of Los Angeles County:**

I think, I think things have changed, right. So, we have a climate change statement that the board adopted and I have told them we are advocates for science. I do want to point though to Judy Koke's observation, that the way we express it as there are observations. There are facts; our responsibility is to help people understand how to ask questions. How to find the information, how to look at the information because it does change. Right. And I mean, it's so there. It's not like what Jesse said, but it does, we have to address an audience. Now that even in a short period of time.

More people are skeptical as you see with the mask debate because of the way it started out. And so, what we have to do is get people to ask the questions they need to ask and that we tell them how science works. We show them the data, we show how it's changing, we give them the tools to answer a set of questions that they can ask for themselves, but we are advocates for science. That is what we are.

01:19:03.390 --> 01:19:05.970

**Kathleen Brown – Lord Cultural Resources:**

Judy, really quickly before we go.

01:19:06.180 --> 01:20:24.450

**Judy Gradwohl - San Diego Natural History Museum:**

Yeah, as, as part of our strategic planning effort which we did pretty much right after I arrived four years ago, we decided that conservation would be an important part of our program that we would lead with our science and educate about it and that we would advocate. And well it turns out as a non-profit, independent non-profit, there's a lot you can do that's still within the legal bounds of the law. And I, and I think for us, we decided that we would stick with the issues that we could really contribute to. And so, we're doing a lot of work on land use and development and on working with land managers across the region about how to manage for wildlife that we are very interested and I know I've been talking with Lori and Scott up at the Cal Academy about doing something in general about California for climate change and biodiversity and that's sort of something that we're looking at for the future, but we are unashamed about advocating for nature, for sustainable development in our area.

01:20:26.370 --> 01:20:37.380

**Kathleen Brown – Lord Cultural Resources:**

Great. Great answer. Thank you. Thank you very much. Thank you, everyone. I'm going to ask Sarah to give me a hand with the questions. Have you sorted them, Sarah?



01:20:40.110 --> 01:20:49.740

**Sarah Hill – Lord Cultural Resources:**

Yep, I think we've got about eight different questions here. So, I'm not sure we'll get to all of them, but we'll try very hard.

01:20:58.620 --> 01:21:35.580

**Kathleen Brown – Lord Cultural Resources:**

Given the explosion of knowledge of Earth's formation, dinosaurs, astronomy, etc., what is the obligation of natural history museums to keep up with the new data that supersedes the data in their exhibits? How can museums keep up in light of constriction of improvement funds in diminishing state and local supports?

Both sound like two separate questions to me. Let's, let's take the first one. How do we keep up with new data that supersedes data in their exhibits? I'm going to let Jesse take that one, because you're an organization on the move. What do you think?

01:21:36.540 --> 01:22:35.040

**Jesse Rodriguez – Carnegie Museum of Natural History:**

Well, we clearly have a strong responsibility to update it as quickly as we can. And, and I think there's a variety of ways to do that — again, as we can create digital content. We have a wonderful cinematographer/videographer who might be able to issue something with a scientist explaining what has changed quickly and that can come out. And there's no physical costs because what we're doing is we're making a digital direction.

However, as it rotates the gallery space, we just have a responsibility to make the change as effectively and quickly as we can. We can also, what I would also say is, in our case, we do have on site gallery staff that are strategically placed in certain

galleries and I think one of the first things we would do is explain to them, “This is how the science has changed”. And what we're going to do is ask you when you encounter visitors to explain to them “this is what's changed” so that we can continue educating the public and fulfilling a responsibility to be as up to date as possible.

01:22:37.650 --> 01:22:53.760

**Kathleen Brown – Lord Cultural Resources:**

Great, great. I'm going to go on to the next question, because we're getting a little bit short on time. What are some ideas for community members to show support and be helpful to our favorite museums? Lori thoughts on that one.

01:22:55.050 --> 01:23:51.450

**Dr. Lori Bettison-Varga – Natural History Museum of Los Angeles County:**

So, you know what we would say is be ambassadors share on social media and share with your, you know, your friends and loved ones, everyone you know the digital content that we have. We have to rely on that word of mouth, so to speak, which is not so face to face them in physical reality, but certainly through email and through social media to help create more influencers for us. So, I think that would be one thing I would say, and then the second thing I would say to any community member, just any amount of money that you can contribute to your local institution at a time of crisis is really, you know it's, it's really important to the staff there, to the mission and to, you know, keeping some of these wonderful museums open for the future. So, sphere of influence and if they have even five bucks to give, give it.

01:23:52.020 --> 01:23:59.700

**Kathleen Brown – Lord Cultural Resources:**

Okay, great. Kirk, do you have any thoughts on, on what community members can do to help their favorite community organization?

01:24:00.480 --> 01:24:40.770

**Dr. Kirk Johnson – Smithsonian National Museum of Natural History:**

I think Lori's right on the right track. This is a time when, people are really kind of forgetting what it was like to go to museums. I was at the American Art Museum last night. They first let visitors come to see the Alexander Humboldt exhibit, so happy to be there. So, I really thinking it is this thing with these are major important parts of our culture and they're just shut down dead from the physical tactile sense right now and, and to remind people how important they are as a key thing. We're down on what we open at 20%, how long will it take us to recover to 100%? Attendance is a really important question not just in the financial stability of these organizations.

01:24:41.730 --> 01:24:49.110

**Kathleen Brown – Lord Cultural Resources:**

Yes, yes. Agreed. Anyone else want to chime in? Is there anything else from other members of the panel to add to that?

01:24:49.860 --> 01:25:24.390

**Eileen Miller – North Carolina Museum of Natural Sciences:**

Kathleen it's Eileen. And it also, I'm to build on what was mentioned, is that understanding feedback as we're pivoting to digital platforms, you know, really being open to feedback from the community, you know, their needs that we may, we could address or perhaps you know to the schools, that we're trying to

support or on site, you know, homeschool education, if there's pieces that we could help to support that being open to that feedback I think is helpful we as we continue to pivot.

01:25:26.730 --> 01:25:33.060

**Kathleen Brown – Lord Cultural Resources:**

Great, thank you. I'm going to move on because we saw a few more questions.

01:25:33.870 --> 01:25:52.320

**Sarah Hill – Lord Cultural Resources:**

There's a good one from ... further down the list. This is what Judy Koke mentioned, the change and what science literacy actually means, related to the question about science advocacy, exhibits or programs that emphasize the process of doing science that into a vision and science advocacy.

01:25:54.030 --> 01:26:01.800

**Kathleen Brown – Lord Cultural Resources:**

Good question. Who wants to take that one on? Judy Koke wants to take that on, she's raising her hand. All right, go for it, Judy.

01:26:01.860 --> 01:27:09.150

**Judy Koke – Institute for Learning Innovation:**

No, I think it's a really important question because with information being so ubiquitous in the last decade and people not understanding science has a process. So, people thinking you know theory of evolution while it's just one good idea. So really, really understanding that science is an approach. It's a way of thinking about the world. Science is a way of thinking about the world. It's a way of seeing the world. If we can draw that out in

the activities or in the stories we're telling in our museums, and connect them to local examples, I think that that helps people see themselves in science. You know, there's all kinds of research that shows that a lot of people, when you say the word science, think of someone in a lab, in a lab coat and that science is actually part of your everyday life and underscoring that through exhibitions and program experiences is really I think key to helping people feel personally connected to science.

01:27:11.310 --> 01:27:18.060

**Kathleen Brown - Lord Cultural Resources:**

Great answer. Thanks, other any other additions to that before we move on? Ken, please.

01:27:18.360 --> 01:28:10.470

**Ken Phillips - California Science Center:**

I think, I think it's very important for people to understand that scientific progress is kind of a step stone function. In other words, there are expressions and use of in the world that hold very well and give us great predictive power until they don't. And when they don't, it's usually because someone discovers that the world operates in the world that we didn't think it did before. And so, you get to understand science's evolutionary because it's fundamentally a conversation with the universe. That's what it is. You're asking nature questions with whatever tools you're clever enough to devise, and it answers with something we call data. I mean, that really is a metaphor. This work. I mean, it's a literal conversation. And so, when you look at it like that, it's like getting an old friend, you get to know somebody a little bit first and you learn more about them and you learn more about them. So, I think that's a reasonable metaphor.

01:28:11.280 --> 01:28:35.610

**Kathleen Brown - Lord Cultural Resources:**

There's great, thank you. Thank you all. Last question that I think we're going to take before we wrap up, which is an important one. How do you see the role of collections and collections care evolving in the future, particularly in regard to breaking down silos between collections and the rest of the museum?

01:28:52.620 --> 01:28:58.320

**Kathleen Brown - Lord Cultural Resources:**

Excellent question. Thank you. Who'd like to take a crack at that one? One shot, go for it.

01:28:58.470 --> 01:29:24.330

**Dr. Kirk Johnson - Smithsonian National Museum of Natural History:**

I think what we're seeing really clearly now is so much more community involvement in collections and collections to becoming a part of outreach package, whether it's citizen scientists working the collections or communities of origin being involved with adding information reflections.

So, I think that in the third thing is that the young collection managers themselves are a new breed entirely. They're much more engaged in talking about the collection that becoming part of our public face.

01:29:27.090 --> 01:29:55.29

**Kathleen Brown - Lord Cultural Resources:**

And I think that's a trend that has been in place for probably about 20 or 25 years. I remember when I was working on the California Academy of Science project is when I first met you, Kirk. To meet this young, dynamic curatorial type, who was also

a great science communicator and could get people excited about science. So, I think that that's a movement that is still underway and glad to hear other comments before we wrap this up.

01:29:55.320 --> 01:31:02.340

**Dr. Lori Bettison-Varga – Natural History Museum of Los Angeles County:**

Yeah, I think I would just add in that, most of our natural history museums have cultural collections, and just going back to that point, I think that we need to do a better job of educating internally, educating our volunteers and about these objects and the origins of these objects and then thinking about the way we really collaborate with the community. As an example. What are archaeologists? Unless we grant to bring out some of our beautiful collections from Oceana, and before doing that project before really getting involved in the digital expression of that, welcoming for members of the Oceana community here to do a blessing. And they were engaged, it was emotional for them and that was a step. There's a lot more to be done, a lot more to be done. But that kind of work, I think, is increasingly going to be critical to our ability to engage with and be seen as relevant and sensitive to our communities.

01:31:02.550 --> 01:31:29.940

**Kathleen Brown – Lord Cultural Resources:**

Great, yes, totally agree. Well, I think I have to cut it off, I'm sorry to say, because I'm worried that we're going to get kicked off by Zoom in just a minute before I get a chance to thank everybody so much for being here and all your wisdom. I knew the problem would be that we would run out of time to really, we just scratched the surface on some of these issues. But we really do appreciate you being here and the benefit of your

thoughts. Margie, is there anything that you'd like to say before we sign off?

01:31:32.940 --> 01:33:33.270

**Margie Marino – New Mexico Museum of Natural History & Science:**

I just like to reiterate something that I said to Kirk when we talked earlier this week, is that science was not controversial. And now that switch gears and I find more controversy in natural history museums than in any art museum that I'd ever been in, and much more deeper and much more committed not only community based but with global implications.

So, I think as we move forward and start to redefine ourselves as an organization, we have to think about where this is all leading us and what our responsibility is and what our responsibility is to accuracy in the truth. We've always been such trusted organizations and we don't want to water that down. We want people to still be able to come to us, but in many cases, it requires us to take a point of view and allow people to bump up against it. And that's getting harder and harder to do when the neutrality is the political correctness of the day. I think that sometimes we do have take a stand and we have to give people something to talk about, even if they disagree with us.

So I think that's one of the real challenges for us going forward and also has implications for funding applications for future research implications for just about everything that we do. So, I really have felt that deeply — having an art background in a science institution — that that I gather art can be interpreted very personally, how is it that we're making? We have the integrity that we need as we go forward and we influence other people in their understanding of science. Yes, I agree.



01:33:33.480 --> 01:34:14.190

**Kathleen Brown - Lord Cultural Resources:**

Well, again, thank you all very much. We really appreciate your candor, especially, and your direct answers to the questions, the thought that you put into them. And I know that we will be, I certainly will be thinking about this conversation for days and weeks to come in the future as we work with Margie and her team on updating their strategic plan. So, thank you all again very much.

Thanks to everyone who joined us, participants, and who asked the great questions. We didn't get a chance to answer all of them but thank you very much and we look forward to seeing you the next time we do this.

[End of Transcript]

# Meet the Panelists



### 3. MEET THE PANELISTS



**Dr. Lori Bettison-Varga**  
**President and Director**

**Natural History Museum of Los Angeles County**

As President and Director of the Natural History Museum of Los Angeles County since October 2015, Dr. Lori Bettison-Varga oversees NHM's Exposition Park, La Brea Tar Pits in Hancock Park, and the William S. Hart Museum in Newhall. Dr.

Bettison-Varga highlights education and outreach related to community science and urban nature through projects that include design completion of NHM's Center for Nature and Culture and the remaining of La Brea Tar Pits. Dr. Bettison-Varga is a geologist who received her doctorate from the University of California, Davis, and served six years as President and W.M. Keck Foundation President Chair at Scripps College in Claremont, California. In her role with Scripps College, Dr. Bettison-Varga implemented policies to create greater community engagement and transparency, introduced strategic planning for sustainability and diversity, and initiated a comprehensive capital campaign.



**Judy Gradwohl**  
**President & CEO**

**San Diego Natural History Museum**

In July 2016, Judy Gradwohl assumed the role of President and CEO of the San Diego Natural History Museum. Judy has over 30 years of experience with the Smithsonian Institution where she held various leadership roles,

established the Smithsonian's Office of Environmental Awareness, and developed the Smithsonian's first exhibition website. Following this accomplishment, Judy joined the Smithsonian's third largest museum, the National Museum of American History, as MacMillan Associate Director for Education and Public Engagement. For her undergraduate studies, Judy completed a degree in Zoology at UC Berkeley where she was awarded a fellowship at the Smithsonian's Tropical Research Institute in Panama, forming the basis of her bachelor and master's degrees. Judy is a published author having written several books and articles on environmental and scientific topics.





**Dr. Kirk Johnson**

**Sant Director**

**Smithsonian National Museum of Natural History**

Kirk Johnson is the Sant Director of the Smithsonian's National Museum of Natural History where he oversees the world's largest natural history collection. The museum hosts more than 6 million visitors each year. In 2017, its scientists published over 760 scientific research papers and named 300 new species. In 2019, the museum opened its largest renovation, the David H. Koch Hall of Fossils-Deep Time. This exhibition interprets the history of life on Earth and address its relevance to the future of humanity.

Before his arrival at the Smithsonian in 2012, Johnson was a paleontologist at the Denver Museum of Nature & Science who led expeditions in 18 states and 11 countries. His research focuses on fossil plants and the extinction of the dinosaurs. In 2011, he led an ice age excavation near Snowmass Village in Colorado that recovered parts of more than 50 mastodon skeletons. He is known for his scientific articles, popular books, museum exhibitions, documentaries and collaborations with artists.



**Judy Koke**

**Deputy Director & Director of Professional Development**

**Institute for Learning Innovation**

Judy Koke is a dynamic leader in the free choice learning ecosystem with a strong track record of creating organizational change through the integration of visitor research into evidence-based decision-making. As evidenced by her leadership roles at the Art Gallery of Ontario and The Nelson-Atkins Art Museum, Judith challenges museums to broaden and deepen their relationships with diverse audiences. Her career combines audience and learning research with museum

leadership, and she has been invited to work with numerous museum boards to build a better understanding of the changing role of museums today. Judith has published extensively and taught in numerous graduate programs. Her passion for lifelong learning is currently being channeled into researching museum inclusion for individuals with ASD and developing the next generation of truly effective professional learning opportunities. Judith's expertise includes art & science learning, professional learning, and museum senior leadership.



**Eileen Miller**

**Chief of Community Engagement**

**North Carolina Museum of Natural Sciences**

Eileen is the Chief of Community Engagement at the North Carolina Museum of Natural Sciences with over 15 years of experience leading teams, advising senior management and business partners on building community partnerships, revenue generation, communications, relationship cultivation and organizational management. Eileen is a creator of innovative solutions achieving business priorities who builds rapport with clients to further brand recognition and fundraising goals and a team leader and contributor with proven experience and knowledge of the education and philanthropic landscape. Prior to joining the North Carolina Museum of Sciences, Eileen was the Director of Program: Community and Alumnae Engagement with at Girl Scouts, North Carolina Coastal Pines.





**Dr. Ken Phillips**  
**Curator of Aerospace Science**  
**California Science Center**

Ken Phillips, PhD, is the curator for aerospace science at the California Science Center. Ken joined the Science Center team in 1990, and his main goal was to develop a superior science learning experience for the general public. In 2000-2001, Ken was awarded a grant from the National Science Foundation that he used to create an experimental air and space gallery that was once housed in a Frank Gehry-designed building in Exposition Park. This experimental gallery allowed the Science Center to test different concepts in science learning and various ways to interpret its artifact collection. Ken's vision of obtaining a flown space shuttle became a reality in 2011, when NASA awarded the Science Center the shuttle orbiter Endeavour. Ken's fascination with science learning complements his love of teaching as an adjunct professor of physics and astronomy at the University of Southern California, the New Village Girls Academy in Los Angeles, the Women's Correctional Facility in Santa Fe Springs and the Science Workshops at the California Science Center.



**Jesse Rodriguez**  
**Deputy Director**  
**Carnegie Museum of Natural History**

As Director of Finance, Jesse oversees the Carnegie Museum of Natural History's finances, monitors the budget, and develops financial initiatives. Jesse's education includes a Master's Degree in Fraud and Forensic Accounting from Carlow University and a Bachelor of Business Administration in Accounting from the University of Notre Dame.



**Margie Marino - Host**  
**Executive Director**  
**New Mexico Museum of Natural History & Science**

As the Division Director at the New Mexico Museum of Natural History & Science, Albuquerque, New Mexico since 2015, Margie is one of 16 division directors with the Department of Cultural Affairs. Under her leadership, the museum reaches as many as 360,000 visitors and residents annually. Prior to joining the NMMNH&S, Margie was the Executive Director of the North Museum of Natural and Science, a small regional museum in Lancaster, Pennsylvania where she led the Museum through a successful capital campaign and reaccreditation by the American Association of Museums. Margie has Master of Science, Cultural Services/Arts Administration and a Bachelor of Fine Arts, Visual Design from the University of Oregon.



**Kathleen Brown - Moderator**  
**Chief Operating Officer & Senior Practice Leader**  
**Lord Cultural Resources**

Kathleen's work over three decades with public and private institutions and organizations around the country includes both staff and consulting positions with cultural attractions, community organizations, government and academia. In 1992 she founded the U.S. offices of Lord Cultural Resources; in 2015, Kathleen returned to the company, first as Director of Business Development and then appointed as COO. Her 30-plus years of experience as a first-rate consultant keep her in-demand as an advisor on key projects. Kathleen has nationwide success working with institutions and people at all levels from arboreta to zoos, museums, government agencies, port authorities, Native American tribal councils, science centers and universities, redevelopment agencies and water management districts.

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