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In the last half hour I'd like to open up the questions and conversations. To start off I'd like to begin with my own journey into the relationship between the music and climate change. When I was 14 years old I decided to become a professional musician because music had nothing to do with oil. I was born in Canada's tar sands, the world's third largest reserve. Oil soaked everything. For a time I lived in a neighborhood called pet rolia. The local McDonalds had a shack in the playground. I grew up to be a professional musician. And now I teach a new generation of musicians at Boston's New England conservatory and at the new school in New York.

On the surface there isn't much that connects these two lives. But 15 years ago clashes over the proposed keystone pipeline made Fort McMurray front page news. The images of surface mining were shocking. There are these vast lakes of toxic process water, the biggest trucks in the world, the earth skinned alive. I was called then to connect the dots. Scientific evidence was in about the human causes of climate change. Exxon mobile knew in the '70s and I've known since I was a child but for most of my life I used music sort of as a shield. When the news troubled me I'd tell myself that my response would be like Leonard Bernstein would say to make music more devotedly than ever before. But now I'm asking students to enter a precarious profession. It's not enough. So I started to tell a new story about music and oil. In 2016 I started going back north, back home for the first time since my childhood. I wanted to understand my role in this story. I sat in a wood panelled kitchen as a fisherman enchan'ted the names of lost species like the names of friends who passed on. I sat on the porch of an elder who listed the names of people who died of cancers. I requested a report on my step brother's death in a pipeline explosion. I spoke with people on all sides of the issues, engineers, all patchworkers, activists,

industry influencers and members of my own family and I've been weaving their voices together with my story and my music in a multimedia performance called the Tarzan song book. I designed it to be performed over ten years and community residencies all along the rail, truck and pipeline routes that carry Alberta crude into the global market and I think of it as my personal reckoning in an environmental and economic disaster. I do this as a ritual act so that others may do the same.

What I know now, what's changed for me is I know that music actually has everything to do with oil. Oil fuelled my family's ascent into the middle class and even though I chose a different path oil was the condition of my choice. It was oil money through industry donations that brought the orchestra to the school gym where my mother heard an orchestra for the first time in my life. A grant funded by oil royalties paid for my trip to New York City where I auditioned for Juilliard. Think about it. My mother grew up on a subsistence farm without power or running water and I got into Juilliard. They call this a pipeline. In the language of corporate social responsibility it's called a social license to operate.

So we live in a time of climate emergency. For me knowing that music has everything to do with oil has changed how I see my role. Not just as a violist or as a teacher or scholar or activist but someone who can use all the skills at my disposal to mobilize musicians and audiences to meaningful action. I'd like to close my remarks and open up our panel with a series of short provocations. These are sort of thought conditions.

First, I think we need to stop our magical thinking about music. We often speak about music as though it were a divine machine, this universal apparatus that builds bridges or gives hope or ennobles us or powers us.

But music is a complex set of social practices that are hard wired into every human culture.

The second, that music is not a noun but a verb. I take this for the musicologist Christopher Small who said there is no such thing as music.

He also said we are all musicians. The real value lives in these social practices enacted by individuals alone and in concert with others. The

third, art itself does not affect social change. People do. Society is a construct.

Society is a construct. We can't change a construct but art changes individuals. And individuals then act to impact society. The real value of music lies there. So art helps people to imagine change. Why it's necessary, what it could look like and what it could sound like. Artists create the conditions for change to happen.

The fourth, history is a weapon against hopelessness. History is full of examples of seemingly hopeless causes like same sex marriage or voting rights for women or cultural shifts like tobacco use. We are in the midst of a revolution of energy consciousness and energy alternatives to believe that our situation is hopeless is to ignore our truth.

The fifth, the license can be revoked or renegotiated. So art sponsorship is a strategy used to secure the social license, and arts organizations can play a role in dismantling this. To those who fear the loss of relationships, I ask you to imagine this. What other kinds of relationships might we secure if we were to act out of a commitment to a deeper, more inclusive, and more sustainable well being in our communities.

The last of these is this: All of these ideas that I have and many more came from one central insight which is this: If you want to change the

world, you might as well start with yourself. So when I thought that music had nothing to do with oil, I saw climate change as something happening somewhere else to someone else at some other time. And now I see that it's the story of my life.

I'd like to invite Matthew to join us. Hi. His work explores embodiment, noise. His music has been featured in concerts around the world, by NASA, PBS news hour, the BBC, and the U.S. State Department under President Obama. In 2020 he received an Emmy award for composing music with snow and glaciers, a feature on his glacier music by Alaska public media and he is the professor of music at the University of Virginia where he codirects the coastal future conservatory and he is the founder and Director of the organization ecosono.

>> Thank you so much, Tanya.

>> I wonder if you could tell us something about your origin story.

What's your journey into understanding the relationship of music

>> I was born and raised in Alaska and my parents lived close to nature. So I grew up in this way. Often we lived without electricity and running water even in the north. I learned music from my mom. But I was

more drawn to the powerful and complex sounds of nature as a child than to human musical sounds.

I studied music in higher education and that path of study corresponded to rapid changes in the climate in Alaska. So when I would come home from college I would experience these changes or hear about what happened over the year. And I sort of put these things together. I was looking for a way in music to bring that kind of power and complexity in the natural world into the compositional frame. This led me to computer music. And to work with composers such as Yannis and Barry Truax (phonetic) who were developing ways of doing just that. That's been it was a natural coincidence that led climate change to find its way into my music and then I started working on that and with that. Not by design but because it worked out that way and suddenly the music itself was starting to take on a more activist position. Not because I was putting it there but because it just happened that way.

>> Reading through your bio, I'm struck by the number of parallel streams of musical interactions you represented. Not just traditional relationships of composers to commissioners to audiences and concert

halls but your collaborations with scientists and policy makers. Can you give us what are some snapshots of the different environments in which you do your work?

>> Matthew: I have to say that the work that I do in the university is really valuable for me in that it the university system gives us a kind of laboratory for these kinds of interactions between disciplines. And the university supports those researchers from very different paths to engage with one another. I think working in the university has given me the chance to explore those kinds of relationships. Those things are finding their way out into the broader world. I run a nonprofit organization called ecosono which is not part of the university. It's an independent 501(c)(3) company. That group is more active in the public. Active with community engagement and music making outside of the university. That allows me to explore different kinds of educational settings, different kinds of public engagements. And I found that to be very exciting and interesting. One of the things that I've noticed this has been quite a while that I've been doing this. Maybe 20 years. Ecosono from 2010 but I've been teaching at the university of Virginia since 2001. Teaching ecoacoustics since about a



few years after that. This is not a kind of new endeavor but I feel like the field has changed rapidly and very positively. I'm very enthusiastic, for example, about how porous or different fields and methods have become. How there's more of a mandate in the sciences to collaborate with the arts. Through very specific programs like the broader impacts and the NSF and other things that allow scientists to take the time to collaborate with artists and to find valuable ways of doing that. Similarly, in music, the musical field has been much more open to experiences outside of the concert world. So I'm very grateful for the experiences that I've had with public policy, with the sciences. With museums. Things that are outside of the normal concert music culture that I participated in before. And was basically trained to engage with. And so I really love that we're able to work in so many different ways and find different ways for the music to be, that is contemporary music to be relevant to the broader public and to engage with these larger societal issues.

>> How do you think that music can help promote a more productive relationship between people in the places where they live?

>> Matthew: Well, I think you opened up by talking about music as a verb. And not as a noun. I guess I'm not totally I'm not totally on board with that idea because I really do think that music is like the environment. And that by engaging with music which is not something that we necessarily do but we actually go to and become part of, that that teaches us things. So as a composer there's ways that we can write music that really brings the listener into a kind of discourse between themselves and this music, whatever that is. That can teach us about a relationship to the world. So I'm very interested in how we can compose sounds that challenge listeners to rethink the way they relate to the world. And that's something that in works like glacier music which we've included a link to in the resources, it's about elevating the systems of glaciology into the fabric of the orchestra and time. That is a way that a listener can find a path between the imaginative, artistic aesthetic and the real kind of concrete world even if that's something that they haven't seen in person but only imagined.

>> That's really powerful. Thank you, Matthew. I'd like to ask Jimmy Lopez to join us now. Matthew if you go off camera and we'll bring you back at the end. I see a gray square. Described as one of the most interesting young composers anywhere today. His works have been performed by leading orchestras around the world and heard in venues such as Carnegie Hall, Kennedy Center and the concert house Berlin. One of his recent works was inspired by undocumented students at U. C. Berkeley and recently premiered and the orchestra of London. Native of lima he studied at the city's national conservatory of music prior to graduating in Helsinki. He completed his Ph.D. at the University of California Berkeley and recently you completed a three year tenure as composer in residence with the Houston symphony. Thank you so much for joining us.

I would love for you to tell us about your work altered landscape, collaboration with the Reno philharmonic inspired by the collection of the same name at the Nevada school of art.

>> It all started with a call by music Director of the Reno Philharmonic, wonderful Director. We have crassed paths. We haven't had

a chance to work together. She asked me if I would be interested in writing a work inspired by this collection which is housed at the Nevada museum of art in Reno. This is all pre-pandemic of course. I took a look at the collection and I found it very provocative, very interesting, thought provoking because it depicts a pipeline that is famous you can only barely see it. It is very subtle. It can be subtle and sometimes it is not. It is very much very explicit in terms of a bunch of tires piled up. So there is all this wide variety and I was trying to find a way to present it in first of all a way that will make sense musically but also that will tell a sort of narrative or story. Now, what I ended up doing is a symphony in four movements.

Each of those movements go through different stages. Something important to note is when the pandemic hit, and our project was for a certain moment almost what is going to continue, Laura and I had if there was any way to incorporate the circumstances we were all going through and work it into the piece. That was a challenge because I had a piece in my mind but of course I thought it was inevitable and a great chance of myself to channel everything I was experiencing. Basically the first movement is called the great acceleration that is the most substantial

piece. It takes the increment, the increase of socioeconomic and earth trends after World War II. We have a second movement called a stillness which is a reference to the moment the world stood still for a few months and forced us into a reckoning which is the third movement concluding with alignment, the fourth movement, that envisions kind of a future where humanity has been able to reconcile its ways with nature and the way that it handles technology as well.

>> So I'm curious to know what's changed for you as a result of your work on this project.

>> Jimmy: Well, for the first part, something that I have seen is as an artist, I hadn't quite understood the impact that as many artists I suppose, the impact this was going to have on our lives, on our livelihoods. Had I not actually gone through the motions of trying to incorporate the actual pandemic into the piece, I think I might have been blocked. One thing that I realize is I'm more sensitive to the circumstances that I previously thought I was. I think change is important. And as artists we're always bombarded with things from outside and we are not we don't exist in a vacuum. It is

important to allow ourselves to actually process those things and actually be able to transmute them into something positive through art.

>> Thank you. You know, there's something you said in our conversation we had a preshow conversation yesterday that's really stuck with me which was about what you realized during your time as composer in residence in Houston. When you enter into a collaboration with an orchestra you are entering into a relationship to place. Could you tell us more about that?

>> Jimmy: I like to call them my family as well because after a period of time working with them you do become family. I feel when I went to Houston, my first post as composer in residence, I went with the mission of understanding what they wanted to accomplish. Not so much what I was aiming at accomplishing. But I really saw this as a collaboration that should benefit us both. And orchestras are very important a very important part of their communities. I think the best work and the most engaging work is I was able to influence people in their communities. This is what we're also doing with Reno. I feel it's such an important institution. Kind of eliciting this kind of collaboration, and the cross feeding is really important for us.

Also, this kind of gives a multidisciplinary dimension to the work as well.

Mixing visuals and music.

>> As a composer and as a person, what are some things you do to really come to know a place in which you are working?

>> Jimmy: Well, so far of course you need to travel there. I was lucky enough to be able to visit Reno prior to everything starting. But also it is more about the people who live there, their stories, their struggles and whatever is relevant to their community. Houston, it was inevitable that I would connect with NASA because it's such an important part of the city. But also something that I found is its diversity and how welcoming they are to refugees. We teamed up with a local organization called interfaith ministries and we created a project that actually highlighted the stories of these refugees. That was another way of creating this interaction between people. I feel the issue of climate change is very much present in Reno. All over the world of course but there are certain communities and places that experience these extremes in temperature. And its consequences in a much more vivid manner.

>> I'm going to move on now to our guest from San Diego. We'll have you back at four o'clock, Jimmy. I'd like to invite Martha, Chief Executive Officer of San Diego symphony. And you should be listed as the guest curator, Steven. Welcome Martha and Steven. Thank you for being here with us. Since joining the Martha Gil her has accomplished extraordinary things. She's initiated a citywide arts festival, engaged leading artists, presented new works, presented several west coast premiers the leadership has led to the inauguration of the jazz at the Jacob series. And the approval by the port of San Diego for the development of an extraordinary new venue, permanent outdoor space called the shell. In 2018 she appointed the organization's 13th music Director, internationally acclaimed Raphael. Joining us also is percussionist Director and author Steven Schick, born in Iowa and raised in a farming family and hailed by the New Yorker one of the supreme living virtuosos, not just percussion but of any instrument. He's championed music by commissioning or premiering more than 150 new works. He serves as music Director of the La Jolla Director. As a conductor he's appeared with the BBC Scottish orchestra, international ensemble and the he is the distinguished



professor of music and inaugural holder of the Reed family Presidential chair of the University of California San Diego. It's my pleasure to welcome them here to talk about their work.

Martha, I still can't get out of my head the way you spoke about what makes San Diego so unique and extraordinary as a community and as an ecosystem. Could you start by telling us more about that?

>> Absolutely. I have to say I was involved in my little town in Wisconsin's first celebration of the very first earth day. It was a project I led from my high school. So this takes me way back. Steven, I have midwest roots in common which is what is interesting about both of us being here in San Diego. I'm a proponent, or understand something from Yo Yo Ma. He was fascinated by this thing called the edge effect. We find ourselves on the edge in so many ways in San Diego. Which has been defining for me in terms of coming here. We are of course on the edge of land and sea. We are on the edge of desert and mountain. And we are on the edge of the border between the U.S. and Mexico making San Diego a fascinating place. That's really what led to creating these January festivals where we

look at this juxtaposition, this coming together of maybe presumably unrelated things that make both of them clearer to us.

>> Wonderful. Steve, can you tell us about the inspiration for the festival to the earth?

>> Steven: Yes. Thank you so much and thank you very much for this invitation. It's wonderful to be here with Martha, and on behalf of the San Diego symphony. I'd like to actually start by reinforcing something that Martha said. One of my great appreciations of the San Diego symphony is it's an international class orchestra. That is firmly rooted in the local environment here. It belongs to this place which I think is really part of what we're talking about. And this place that we're talking about in San Diego County is the fifth largest County by population in the United States. It is larger than Delaware, or Rhode Island. It is around 82 percent of the square area of Connecticut. It's enormous, in other words. The nature conservancy said it is the most biologically rich County in the United States. Unfortunately it's said in the context of an article about how much pressure is being put on endangered species because of habitat destruction but in any event we have both sides of that spectrum. As Martha also said we

are here in a binational area and we are here on the unceded territory of the Kumeyaay people. We have an extraordinary set of social and geological, ecological constructs to deal with. Therefore our partnership in the festival in the name of the earth, which was the January festival which unfortunately because of the pandemic we scaled back to a virtual festival, three performances which we are calling to the earth is a part of our friendship, our long term working relationship with one another, and about the rootedness of the San Diego symphony in this place.

So to the earth is really the celebration of this ecology, and in particular, the way human beings occupy the ecology. We seek in essence to desilo this conversation. It is not only about the earth. It is not only about climate change. It's about the people who live here and with whom we share this space. And if you don't mind I would also say a little bit about my personal pathway as a person invested in planetary wisdom.

My path actually began on a path. I'm afraid that Martha has heard this story far too often but I'm going to tell it anyway. In the most purely Forrest Gump of my life I left my house 15 years and didn't stop walking until I got to San Francisco. I listened to the sounds of the earth and asked

the question whether musicians have leverage over the problems of the planet by virtue of our ears. The second one, was to propose to my wife Brenda who lived in San Francisco. I thought it was a reasonable sign of commitment to walk the distance to ask her to marry me. I came away with two gifts. One was a serious introduction to the planet. And also my beautiful wife.

So at that point I realized that Wendell berry was actually correct when he said there are no unsacred places. There are just sacred places and desecrated places and I wondered what role a musician might have in this. In point of fact, what was disturbing to me or what was not disturbing, provocative to me on this walk was this realization that classical music has been from the 9th symphony of Beethoven to the resurrection. But what happens when human exceptionalism is one of the causes of planetary destruction? How do we balance those kinds of things? The festival is returning to the we part of this, what we are doing together with the San Diego symphony is to propose music as a meeting place between art and the communities who share this space. One of my most treasured memories of our collaboration, Martha and I both have the wonderful

memories and scars that led up to the execution of this project was the production of John Luther Adam's piece which was a wedding gift to Brenda and me along the Mexican border, a piece up to 99 percussionists and we put half on the south side of the border, half on the north side of the border. We could not see each other through the wall but we could hear each other. That meant to me that this shared binational landscape where we are literally asleep under the same set of stars, under the same sky, was possible to unite in a way with music in a way that it was impossible in the world of politics. So Martha I'm really grateful for our collaboration and I'm really grateful for this chance to talk about these extremely timely and important issues.

>> So I'm curious when you look forward to the opening of the shell, it's got this really extraordinary position where it's really in the middle of the water and looking out over the entire ecosystem you're describing. How do you see the new performance space as encouraging new creative relationships between music and the environment?

>> Well, the edge effect that I referenced earlier is really this idea that when two systems meet, in that moment there is an enhanced creativity.

So this is sort of the inspiration of the shell which is surrounded by water. On a man made park. And I think that every time you're out there and you see the water by the way, the water is transmission of culture and commerce. We have one of the largest immigration populations anywhere. People come to the harbor, come to the bay, come to San Diego to live, referencing what Jimmy was talking about a little while ago. And also, it's a thriving ecosystem. We have enormous commerce with shipping with ships taking goods to other countries and bringing dole pineapple to us. We have living ecosystem in which there are now we are harvesting, growing and harvesting mollusks in our harbor. And bringing children, for instance, to just sit and watch the coast line. Many of them have never been to the sea or to the bay. And we're looking at educational programs that will acquaint themselves.

This stems out of a project from my days with the Chicago city orchestra, rivers project, highways of culture and commerce. We brought children to the Chicago river and they sat and watched it. Many had never seen it even though they were just miles away and they took things away. They made rain sticks and they said that's the sound of the wind or the

water or they'd play a percussion instrument and say that's the sound of my heart or walking along the river. I never forgot this connection of humanity to nature.

>> That's beautifully put. What creative possibilities do either of you see for specifically musicians and the San Francisco symphony's role in adapting a community facing a rapidly changing environment? I'm thinking about that beautiful image you said, Steve, about music. Do we have a leverage here? Thinking wildly, the wildest imagination what might be possible? What would you love to see happen?

>> Steven: Let me jump in quickly. I'm really eager to hear what Martha has to say. One thing music can do is reclaim its traditional function as an explorer of truth. We seeded that in the late renaissance but before that point art making was the principal way in which human beings discovered imagination and the world. So could we come into partnership, for example, with scientists in such a way that we again I'll use this made up word desiloed activities. Could we say that the responsibility of the musician is to look at the world and not only the responsibility of the climate

scientist? Could we get people when they leave a hall to notice the sounds of the outside world and not only the sounds of the inside world? I think artists by virtue of leading by example and of stimulating imagination are the way forward. After all, without an imagination we will never get out of the current climate crisis and we will never actually fully live up to the optimistic standards that we hold for ourselves.

>> Thanks, Steven.

>> Martha: I think that music we perform, timeless as it is and music written today by so many people call our attention to some of the great social issues of today. I think in interpreting it, in performing it, and in hearing it it is a call to action for some of us. Some people say music should stay out of politics. I want nothing to do with politics but I do want to remain responsive to the world around us. It is not just an escape. It's a way to engage.

>> Thank you. Really beautifully put. I'd like to invite our next guest, Terry, the education Director from new bed Ford symphony to join us.

>> How is it going?



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(Laughter).

Terry, once again you know the deal. I'm going to read your bio.

Terry is innovative approach to designing music education curricula has made the new bed Ford symphony orchestra a national leader. She's now in her 10th season. She continues to create innovative program that connects classical music to children's lives. To encourage learning by exploring concepts authentically shared between classical music, the arts and academics. In 2016 her gravity in space and sound curriculum for the learning and concert program received the excellence in education award from the golden foundation. In 2018 the orchestras curriculum received the Massachusetts secretaries award for excellence in energy and environmental education. I'm excited to hear from you today, Terry.

>> Terry: Thank you.

>> Okay. Your educational programs pull together the stunning array of speakers and disciplinary perspectives and I'm blown away by your current season project bird flight patterns and music. You have a Barcelona photographer who visualizes bird flight. Scientist from university

bird the great horned owl from the Zoo. They're all woven together with classical repertoire. I'm curious to know what is your journey into developing these projects? How did you learn how to do this?

>> Terry: I think it really begins by exploring how the concept is represented in science. I have to learn that I'm a musician, not a scientist. And then seeing if there's an authentic way that concept is also represented through music. With the bird flight patterns, my last visit to Boston's museum of science I was walking through and I saw this bird flight patterns exhibit. They had a big screen with birds flying through and then a con tour line traced the patterns of each. I turned to my husband and said I could play that. I reached out to the museum and composed melodies for their exhibit that imitated the melodic con tower tour. They were excited about the representation but also thinking about visually impaired visitors who now could hear that birds move differently through the sky.

>> Is it like a one woman shop? Do you have a team you work with?

>> A team of one. I'm the education Director but I really have to basically research, write these programs. I'm fortunate my orchestra gives me time to do this, to recreate a new program for each year. I have a lot to

learn. By pulling in other artists and scientists who work around the shared concept I'm really able to present the idea, the concept in as many different representations as I can. So I do it with a lot of help.

>> So in our pre-session discussion you said kids learn best by making connections. This seems to be a governing principle of your curriculum development. How do you think music helps students specifically to make connections to climate change, environmental science, and their citizenship?

>> Terry: I think music offers a very accessible representation. In many classrooms, a lot of classrooms I visit where there might be ESL students, sometimes the musical representation is actually more accessible than the written and spoken word. So as an example, this connection to environmental science, in the orchestra's ecosystem we explored the concept of balance in both the living parts of an ecosystem and balance in musical orchestration and texture. So the music is basically allowing the children to hear how different musical parts all have their own niche, supporting each other to create a balanced piece of music. And then connecting that in the same way that living parts of an ecosystem each

have their own niche supporting each other to create a balanced ecosystem. But then we also took it a step further by allowing them to hear what it sounds like when an ecosystem is in a state of imbalance. For example, we might remove a musical part from a piece of music or show changes in population by dynamics. And in these moments in the music the children are able to hear the effects of nitrogen pollution or tidal restriction. In the imbalanced presentation of the music.

Then they go through the process of brainstorming ways that they could repair the balance in the ecosystem. And then the orchestra can restore that balance and let them hear it in the music in the way it was composed. In 2018, we explored a program was called resourceful composer, resourceful planet. We explored three compositional techniques used by composers that also serve as models to reduce plastic pollution. The basic idea is that a composer would never take a musical idea, play it once and throw it away. It just doesn't happen that way. The idea is that we can see examples where composers will repeat a musical idea. That's reuse. We can see examples of composers taking a musical idea and transforming it, retrograde, or repurposing it. Or even segmentation, taking

a part of that and putting it into a brand new melody to demonstrate recycling. These concepts were reinforcing our responsible use and disposal of plastic products. And at the same time, creating kind of a two way street. Students are learning a lot about how music is constructed.

So for me with that program, it just struck me that sometimes we're playing music that's created a long time ago but in this way we're kind of seeing how that music is relevant to solving problems that we have right now.

>> I'm really hearing your commitment to using music as a modality of engaging people on multiple levels. I'm curious to note two things. I have two questions. One is what was your pedagogical journey or how did you learn this methodology? How did this present itself to you? What was your journey into doing this? And then I'll ask my other question after that.

>> Terry: When I was at NEC I was in my freshman class and I was asked by my professor to read Piaget. I was like okay, that doesn't seem related. And so I read Piaget and we had to actually give a report on it, create an outline. After that, I kind of was interested in it and he said

there's this group starting over at Harvard called project zero. So I'm a freshman, sitting in the room with Howard Gardner and all these great researchers, musicians who were starting to ask the question about how do we learn music? From a cognitive psychology perspective, from a human development perspective. And through their work I started to really see education differently. The idea that children need to understand something, to learn something in multiple contexts using as many different representations as possible. So for me, by connecting musical concepts to other subject areas, it's really putting us all on a level playing field where the learning in one subject area is strengthening the learning in the other. Kind of a two way street. Really it was kind of a combination between being a musician, and then learning a lot about how do children learn and how do they learn music? And then like I said each year I have to learn the science. The year I did gravity, I had no clue what gravity was. I had to watch a video. I have to I really spend a lot of time sitting down with people in the field who are experts, scientists, researchers. And I just ask them what is important to you? Tell me about your work. I just listen. Occasionally something will come up and I'll be like wait, we have that

same thing in music. Those are the moments I try to seize on to develop into a curriculum.

>> So I have no doubt that the educational programs are enormously impactful but I'd love to hear from your memory what are some of the most meaningful or resonant examples of impacts you've heard? And then I'd love to know since education is such a central part of new bed Ford's mission how have these educational programs transformed the orchestra?

>> Terry: We were fortunate to get a grant from the futures fund, from the league. And so we spent two years assessing the impact of this type of education. And some of the big headlines that came out of that was that we found that students who explored concepts through science and music out scored students who explored it in science alone. We also saw that some of our schools that were at the lowest state percentile still achieved the same post test scores as students in higher percentile schools. That's kind of the data part. But moments for me, when a teacher came up to me from a Catholic school and said my students gave up plastic straws for lent. Or I see they have a petition to remove all single

use plastic products from the cafeteria or they've organized beach clean ups. To me those are outcomes that I didn't expect to happen once we finished our program. To see that they still went on and were engaged. And also to hear them speaking about classical music as it is just another way that they learn. It's not this special thing out here that we only do once in a while. They really see it as connected into just another way they can learn about their world.

>> Have you seen an impact on the musicians or the orchestra itself, how they come to understand their value?

>> Terry: Yeah. My musicians who go out into the schools, this is a program where on a nonCOVID year it's a three phase program. We're returning to work with the kids more than once. They really become experts before they even arrive at the concert hall for the young people's concert. They get to know the musicians. They are definitely rock stars in the kids' eyes. But I also really enjoy how sometimes these concepts I remember with gravity a lot of musicians said they never thought about harmony or tonality in this way. To listen, now to start to hear the melody



represented as different levels of gravitational pull toward the harmony that was something a lot of them never thought about and really changed the way they heard that piece.

>> Thanks, Terry.

>> You're welcome.

>> I think this is a good time for us to open it up to conversation amongst the panel and also with our audience. I would like to invite all panelists to come back on camera. Come on back. I'd like to invite our audience to contribute questions, thoughts, points, anything that sort of snagged your attention that you'd love to hear more about, any questions you might have for the panelists. We'll field them and have them answer them.

Great. We have a question already from Cameron. How about the social cost of sustaining orchestras as well as the value achieved in potential of doing so? The reliance on exotic woods, metals and elephant ivory to make the instruments we play, and the carbon footprint in touring? I'll leave this open to anyone who wants to start speaking. Raise your hand and I'll call on you. Jimmy.

>> I do have a thought about the very last point which is something that I actually came to realize during the height of let's say the first wave. That is that a lot of orchestras do rely on the fact that we have international guests constantly, which is actually very good in terms of exposing the local audience to international stars and international talent. But that could also perhaps we could also find a balance, especially concerning larger organizations in terms of Fostering a deeper relation with their local communities. Be it local composers, musicians, soloists. Because there might be a tendency in favor of looking out wards. That could actually have an impact in terms of the closer people are you work with, the least carbon footprint. It does lower the costs in terms of operational costs as well. So it can have multiple positive consequences. I think it would be not desirable to completely eliminate international travel or foreign guests but I think perhaps looking into developing and strengthening those local relationships can have that positive side. That effect.

>> Steve, if I might ask you to weigh in on this because I'm thinking about your comment about human exceptionalism as being kind of a destructive force. Also thinking about individualism and exceptionalism in

the sense of how we valorize certain kinds of composers or certain kinds of musics, certain kinds of musical relationships over others. I wonder what you might have to say with respect to the social cost of sustaining orchestral performance as we've known it.

>> Steve: Thank you so much for that. Of course when I even saying the word human exceptionalism requires a sort of switch of perspective. Because we naturally actually don't name ourselves in the ecology very often. We are a given in the ecology. To position ourselves relative to other creatures and the rest of the planet is in and of itself a change. My point was mostly that we have to deal with positive and the negative aspects of that. That it does not come without a cost. So this question is excellent. I find myself torn about it. Because of course like so many of us, I was on an airplane a lot. And I began to wonder what was the cost of that kind of travel. Just as Jimmy has said. By the same token I feel the solution a long term solution to our climate problem will come as a result of the imagination of human beings and the ability to foresee a future other than the one we have. And that imagination is stoked by face to face interactions, by seeing parts of the world you may not otherwise

see. So I don't think there's a simple answer such as let's just not fly anymore. I think we have to continue to feed the imagination that will eventually solve these problems. That I say completely underscoring what Jimmy said about the need to continue to root ourselves in local communities.

>> Anyone else?

>> I would add to that. Fantastic festival years ago, it's about time. Steve's connection in this region, and the what he described in terms of the border concert, we really have reached out to musicians here, and made them part of our life. And we can do more. So I think there is a regionalism as well as national and international component to an orchestra. I would just underscore that we can learn we have a lot of contrasting cultures or multiple cultures within our region that we can enrich ourselves with as well.

>> Thinking back to the question that asked also about the reliance on exotic woods or extracted metals and animal lives in a sense. It's a cost of making our music. It reminded me of a thought experiment one of my

colleagues at New England Conservatory has done with his students where he's asked them to imagine what their musical lives might look like if the price of gasoline were to go up to say a hundred dollars a gallon. Suddenly the life of a musician which is typically about valorizing, having a larger geographic footprint is no longer quite possible in the same way or the ways in which you might make music or the people you might make music with would shift by necessity. Might we uncover through that thought experiment some other ways of being musical, other ways of generating musical relationships in our environments? I don't know if that brings up anything for anyone.

>> I wonder if I could quickly that was so provocative, as you can see from the background, my training is as a percussionist, and there is a piece that you play on the body and I have all my students play it. Whether they perform it or not is up to them. Because I want my students to know what it feels like to be the instrument. Apropos of the question of what woods, precious metals and animal products we use, if we are to use these aspects I think we have to come to it with a new found respect, not just as

utilizers but as partners. That is something we try to do in the world of percussion all the time I think.

>> Thank you.

>> From thinking of concerts as escape, to accepting they should be provocative.

>> By being provocative.

(Laughter).

Just practicing.

>> I feel we have the advantage of commenting on issues that are relevant to us now. I always say being able to write about the space program because there was no space program back then. There are certain advantages living now and being able to really comment on that. I think that engagement will be felt, if you expose the audience to something they connect to at this point in time, they will naturally feel more engaged. And there is a provoking I mean, provoking, yes. We feel there is this is what I'm doing with the project right now. large audiences and use that platform to bring light into issues that are important.

>> I think that's quite one hand having relevance to issues that people care about as a good place to start. I also have to say that challenge the conventions of the field that we work with, and be ready for the repercussions of creating provocative events and have the form of the performances be open to potential disruption. I wrote an opera several years ago, a climate change opera. It premiered on the night that Hurricane Sandy hit the east coast. It went on in other places. One of the things is it uses a kind of software that lets the audience interact with the subject of the piece. Not just as a chat mechanism. Although it serves that purpose but it also a couple of the arias, the input of the audience creates a libretto, the audience doesn't know what they're going to hear. That was 2010 that premiered. It took a while for audiences to kind of get used to that idea. But what we've noticed lately is that the opera becomes a kind of site for discourse that's not always it's a provocation and it's not always people aren't always in agreement about that. The last performance we saw it was played in a rural part of the country. It was advertised as a climate change opera. People came to the event. Basically it was to combat that idea and there was a lot of resistance to it. It was horrifying

and exciting at the same time to be in that kind of context. People are talking. There's controversy going on on the screen. The musicians have to make different kinds of decisions. It was very interesting. And we came away feeling, the ensemble came away feeling charged up. Like really like we had just participated in some sort of political event which in fact we had. What I learned from that is that the idea of opening up to the audience is extremely productive in creating provocative events but we also have to be ready for that to take hold. And that can be quite interesting. But there are repercussions for it.

>> I would also say, for instance, in our upcoming to the earth festival, it's a day in the life of the earth. The height is not Beethoven in terms of audiences. In my opinion we don't hear enough heightened but there is an anchor like oh, this is familiar to me. And then also in the provocation, you pique curiosity. There's poetry interspersed between the movements. Less familiar music. I like the idea Steve and I talked about this, contrast chamber music with orchestral music so you have a texture and size. It's about also creating curiosity, not just provocation. So I think you can strike an interesting balance. And it's refreshing because it isn't



just the same program. Same kind of program you hear during the rest of the year.

>> That's coming in the opposite direction too as opposed to the music being more familiar, or an access point. To think about sometimes when we are connecting to things like climate change or ecosystems or in our paths with gravity sometimes that is more familiar to the people we're playing for. They have more of a foot hold there to give them access to then discovering about how the music is constructed. And it almost can sometimes I especially know when we do programming towards adults it almost feels a little safer avenue for them to get access to the music by coming to a place where they know more about that subject area than maybe about how a symphony is created.

>> Good point.

>> Steven: May I jump in quickly with two points that respond. One following on Martha's comment, in essence it is to redesign the nature of a concert. There are many ways of presenting a music without presenting concerts or at least not traditional or typical concerts. We have videotaped outdoors in various parts of San Diego County. We have high school

students reading texts that have to do with the environment and ecology. I think we can probably do much more by simply not presuming the platform of everybody comes into a hall, the orchestra comes in through one door, the audience from another, but simply redesigning it from the ground up.

My second thought has to do with what I see in the chat. The question of will we turn off potential donors by taking so called political stances here. Are there risks to this? Again as Martha and many of you have said, it doesn't feel like this is a political issue. Not necessarily or not solely a political issue. I think if we cloak this as primarily an ethical issue rather than political then that brings people together. I personally see my practice as a musician as the art of knowledge and wisdom acquisition rather than demonstration of a skill set. If we find a way music finds ways to bring people together rather than to take a political point of view we may be able to circumvent those other problems.

>> I think it's important to recognize there is actually a historical point and recent living memory where climate change became a politicized issue in the early 1980s. It has not always been politicized. In fact science and much of the leading research was done by fossil fuel companies in the

'70s. Before we go too much further I'd like to draw attention to a couple of other questions. We have been focusing on artistic responses in this panel. But of course I want to acknowledge that there are many, many other levels of responses that can happen within the level of an artist, an organization, or a community. But we have a question from the Q and A tab from Brazil. It says in Brazil we have such an urgent situation about climate emergency. The Brazilian symphony wants to use music as a way to talk about this to the world outside of our borders. We don't have funds to pay salaries but we are a national orchestra in a poor country with one of the biggest questions related to climate emergency. What could you recommend?

We're open and anxious about doing something relevant. Before I open it up I want to comment that much conversation has preceded actually with the tacit understanding that climate change is something happening somewhere else or outside of the spheres. That we are not ourselves part of the natural world and we are not ourselves impacted by this. For me one of the larger turn arounds was actually Hurricane Sandy in 2012. After having a career which saw myself going around the world looking for intersections of music and human need, to recognizing that those were

FEMA trucks, the IKEA down my street was set up as a FEMA response center. Those were the National Guard on my street. These people for five months did not have electricity or food. I'd like us to take on this question from the standpoint not of imagining that climate change is something happening somewhere else but it is happening in our community. And ask what responses you might have for our questioner.

>> Well, I just want to say that I've been following the institution in Brazil closely. I will say that what we're doing right now in Reno kind of is I will actually be very encouraged to apply the model elsewhere because when you combine another institution, let's say a local museum, in Brazil, photographers, the art of photography is documenting documentation is important in many ways. I would also I agree with Steven, politicizing things, it is just part of the story because there is one thing we have to understand. Science should be a solid ground upon which we can have a civilized discussion. We start arguing with the science and the facts. Then we cannot have an actual discussion. But we at least agree on that point. Then we can focus beyond the politics and really try to understand what it is best for us to do. And have our decisions driven by our best interests

and the interests of the communities. So when the issue of the forestation in Brazil is so strong, I definitely would be very interested, especially now in this post COVID or still COVID era, to see work being done down there by orchestras highlighting this issue. Perhaps in tandem with local organizations and local photographers would be willing to present it in a more clear manner.

>> Thank you.

>> If there's one thing that the global pandemic did it was in some ways make our world smaller by opening up this kind of telecommunications expectation that we're now participating in. The whole world should care about what's going on in Brazil. Just as Jimmy said this is absolutely critical. And the Brazilian rain forests are really the lungs of this part of the world. If not the whole planet. And so it is absolutely essential that this message, this issue is brought into the public imagination of people all around the world.

I would just kind of follow up with what Jimmy is saying to reinforce that the opportunities now to use to do things and project them to the

outside through Zoom or in other types of telecommunication. You could reach much broader groups of people globally. And that could compensate for any kind of feeling of local impact that and how you get that message out. I just think we're in a very different space here in 2021.

That absolutely gives me the spark of an idea that those of us working and committed to this, because this is not just one festival. we could form this network that is multinational. The original beginnings of this festival was an idea of Steve's about 33 north, a 33rd parallel and stretching around the world east to west. But also covering north to south and understanding this is global. And meeting colleagues across the world to see how we can help each other. Without going in airplanes necessarily.

>> One of the parts of that festival, Martha, I was so sorry to give up was walking from the 32nd parallel to the 33rd parallel just north of San Diego with pieces commissioned by young Latin American composers from Marching bands and we were going to walk through the international border on inauguration day to inaugurate a new era. That was one of the things unfortunately due to the pandemic we weren't able to act on. That could come back. I look forward to that idea of connectivity.

>> I want to put out a comment from samara in the chat which speaks to the idea of an international cooperation. Could organizations cooperate in a way that would allow for international artists.

I wonder what other possibilities the panelists might note for a more organized sector wide effort.

... intersection with national based funding for artists who are sponsored by their countries. The question here is, may there be a way to consolidate resources, either with an effort towards maintaining budget considerations, or through the carbon footprint of the activity we support? We wonder what that calls to mind for you in terms of a creative, cooperative response.

>> The first thought, it would have to be a very concerted response to really have an effect, so of course, it will be -- for music does lead the way but many others will have to follow that, not just a symbolic gesture for an activity that would reduce our footprint. This is something that will require massive coordination at a national and international level, in combination of course with a system of saying, imagination, and perhaps the appearance of new technology that will allow us to do that. To an extent, I know that artists with, on tour try to create a route that will reduce the distances and times to spend but there are so many other factors to be taken into account, especially schedules, and to be realistic, I will be interested in knowing what Martha and Steven have to say in terms of how organizations can really be in coordination with others, to create a lesser impact.

>> Before we do that, I will put some resources in the handout to be distributed to attendees. One is a U.K. based organization, Julie's Bicycle, which did a tremendous amount of work in green touring in the orchestra in

E.U., and Reverberation, which did a lot of work in popular music to create an environmentally sustainable and responsible and to create sites of environmental awareness, in physical contexts. So I think there are model, elsewhere.

>> That's good to know.

>> Yeah. Also, aligns with the suggestion from Susan, about the possibility of surveying orchestras for sustainable standards, similar to Stars Assessment for hiring institutions. This might be a powerful way to show that no one is exempt, and focus on health justice and willingness to change behaviors.

>> One more thing I'd add, as we come out of the pandemic, there are two possible responses, I see both of them, myself and a lot of other people. One is how can we get back to January 2019, with full guns glazing and traveling, and the other, which is a moment of reconsideration. We have not even begun to come to terms about with the change of technology and human expectations around concert giving. If we don't use the pandemic as a way of reconsidering the basic way we do business, rethinking things, on a basic level, we will have wasted this moment. One of those things might be the development of technology and also the reconsideration of desire on the part of audiences, musicians, and institutions, for the way art is promulgated. The givens of the late 20th century, in terms of what constitutes success in classical music may not be the givens over the next ten years, so could we take this opportunity to think on the most basic possible level for change in practice?

>> Also, as a creative artist, where I feel I can make the most impact, is by creating awareness. I feel that, perhaps that's the, that we can do, what art can do. We forget sometimes the power, transformational power of art and music. That's what brought me in the first place. The thing the music can reside in me, thing, a deeper impact on me, trying to say, what we have at our hands is the powerful tool of music to persuade minds. I've written for the New York Philharmonia, we know there will be climate



skeptics in the audience. Some people might not agree with the vision of what we're trying to head to, but we're trying to spark a dialogue and create awareness by involving, because this is the thing about art. It's not pure science. It's a beautiful marriage between what we're asking ourselves, spirituality, but it has the element of intellect. I'm a fan of science, I read scientific journals, and I think for me, it's important that we are able to convey a message of, that is, yes, easily understood, and clear in a way it's crafted, verbally. But also, accompanies, I wrote the piece to convey how we feel about it. The personal experience of this particular artist can communicate with others.

>> We only have a couple minutes left in our time today. I'm mindful of our need to wrap up. I note, with pleasure, the amount of engagement we have in chat and Q and A. I'd like to offer that this could be the start of a conversation, rather than the end of a conversation, and we will be reaching out to you with other resources, and each panelist will be contributing resources for further discussion. Very quickly, in a word or two, I'd like to wrap up by asking each of our panelists to answer a simple question I've often used to conclude the oral history work I do, which is, in order to, where are you finding hope, or inspiration right now? Matthew?

>> I've already said, I find it in collaboration. To me, that's the core of transformation, that I've observed and I'm really enthusiastic about that.

>> Thank you. Jimmy?

>> The last thing I was saying. My first exposure, the thing that changed by life was listening to a two part invention by Bach. Over time, I understood the intricacies of the counterpoint, and learning to understand more about the composer himself. And how the marriage of spirituality, intellect, beauty, harmony, how we are able to encompass that. Music can have that effect on you, a physical effect, with the sound waves coming at you, especially with percussion. That experience is, trying to recreate,

perhaps, all the time, the first feeling I had when I heard that simple two part invention.

>> Thank you. Matthew?

>> Our younger generation, 16 year olds, that care about the environment and justice.

>> I'd say, even though I spent my life making noise, I take inspiration in silence, and a quote, make a place to sit, sit down, be quiet. That's where I find inspiration.

>> Terry?

>> Hearing people who are avid -- finding a closer connection to music, and on the other side, people who love our music and are finding a new appreciation, and closer connection, to caring about nature and the environment.

>> Thank you. I want to thank all our panelists and our audience, and the League, for this conversation. It's been my pleasure.

>> Great, thank you so much for making time to join us today, composers, Jenny and Matthew, Matthew and Steven, and Terry. A special thanks to Tanya for leading this conversation.

Couple things, before we say good bye. We will be grateful if you take a few minutes to complete our survey. Future webinar offerings are informed by the things received from you. Our national conference, Embracing a Changed World, begins June 7 and goes through the 17th. It's going to be an amazing online experience that boldly looks at how we move from crisis to recovery. Please, register today, and you can do that by visiting our website.

Thanks again to everybody and to our audience for joining us. Have a great day. Bye.