

Natural Science Gallery Symposium

*Nuestro
bosque
es su
bosque
(pero no
toque los
árboles)*

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This unpublished document is intended to be a faithful synthesis of the presentations and discussions at the Natural Science Gallery Symposium that took place at the Oakland Museum of California on September 15 and 16, 2008. It is meant to serve as a resource for those who attended and for the Oakland Museum staff. It does not necessarily reflect the views of the Oakland Museum of California or individual meeting participants.

Participant comments have been paraphrased and the sequence of participant remarks have been reorganized. These are not exact quotes, rather they are an attempt to capture the content and meaning of the ideas presented.



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Background and Context

Lori Fogarty, Executive Director

I'd like to welcome you all to this session and give you a little background on the museum and where we are in this process. I've been doing a lot of reading lately about the history of this institution, including a paper I read over the weekend about museum spaces and walking through museum spaces. It talked about Ellis Island, the Holocaust Museum, and the Oakland Museum of California.

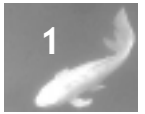
This museum was founded by bringing together three institutions that date back to the early 1900s. There was the Oakland Public Museum, which was the forerunner of the history department here and started in 1910; the Oakland Art Gallery, which was started in 1916; and the Snow Museum of Natural History, which was started in the 1920s. These were all small institutions in Oakland and came together in the 1960s, leading to the opening of this building in 1969.

What was interesting about all three of the predecessor institutions is that all were founded as civic enterprises. There were no major philanthropists or collectors who started these, they were initiated by the leaders in Oakland who intended to create museums for the people. That has always been part of the history of this institution, being a very community-minded and very education-oriented enterprise, dating back to the school programs

that were done at the Oakland Public Museum in the early 1900s.

When the museum came together in 1969 Kevin Roche, a Pritzker Prize-winner who worked with Saarinen's firm on the St. Louis Gateway Arch, was selected as the architect. This was really his first major commission. Architecture critics have called this building the first truly American museum in terms of its architecture. It was designed to be integrated into the surrounding community, to be a kind of oasis and urban park.

The 1960s were a very tumultuous time across the country but particularly in Oakland. Right across the street in the courthouse building is where the trials of the Black Panthers were held. It was a very interesting time for this museum to come about as a kind of "museum of the people." When it opened it was completely revolutionary, and the design of the exhibitions was really unique. I've learned a lot about this from Kathy McLean and others who have talked about how influential the design of these galleries was at the time, particularly the design of the Natural Science and History Galleries, but they have largely been untouched now for close to forty years. There have been some enhancements and improvements to all three of the galleries, but



An Interdisciplinary Effort

- We've had a number of these sessions as part of our planning for reinstallation of all three of our galleries. In our effort to be the truly interdisciplinary institution that this museum is, we've invited people from our art and history departments to join this session. • Lori Fogarty

Background Materials

Sent to participants prior to this session

- *Gallery and Institutional SWOT Analysis*, Lori Fogarty, based on prior SWOT analyses, September 2008.
- *Bringing the Dead Back to Life: A Community Inquiry and Co-Design Project [to Revitalize Natural History Exhibits and Programs]*, Kathleen McLean, draft 9/9/08.
- *Current Gallery of California Ecology, Natural Sciences Department*, Douglas Long, Chief Curator of Natural Science.

Recalibrating to Assure a Community-Responsive Approach

- Lori Fogarty came into this process at a point when the bond measure had already passed and a plan for the galleries was established. Those plans have shifted significantly based on Lori's drive to make those plans more responsive to the community. As a semi-outside observer, I have seen the plans shift a lot over the last few years. Everybody was marching to one set of goals, but then those goals were altered and the staff has had a difficult time as people have had to retool. In the art and history departments, once the initial plan was far enough along so that the staff could really take a critical look at it, they decided it wasn't what they wanted. They recalibrated and Lori said, "We're going back to the drawing board."

I think it is important to know this as we go forward so that you have a sense that this is not a lock-step marching forward. There are all kinds of dynamics in the institution that play into rolling out this phase of the project.

- Kathleen McLean

essentially they contain their original contents and their original design and interpretive philosophy.

The big opportunity for this institution came a few years ago when there was a master plan done for the whole building. Then in 2002 the citizens of Oakland passed a bond measure by 75% of the vote to do the first major enhancement and improvement to the building and galleries since the museum opened. It was a bond measure that also supports Chabot Space and Science Center and the Oakland Zoo. That yielded \$23.6 million for this project. We are currently in the midst of nearing what is now a declared goal of \$53 million dollars.

The first part of the project was the creation of a new storage facility, which was completed a couple of ago, and all of our off-site collections were moved there. The second phase of the project is the redoing of the Art and History Galleries and some major renovation to the building itself, which is under way. The Art and History Galleries are nearing completion of design and will go into reinstallation next year and open in early 2010. The next phase is the Natural Science Gallery and some enhancement to education spaces and other visitor amenities such as the store and other elements.

We held a meeting a couple of years ago when I first started here and brought in leaders in art, history and science to help us rethink and approach the installation of these galleries in a

new way. We think we have a huge opportunity here. We have the only institution in the state that is really focused on the full breadth of California, including art, history, and natural science. We have incredible collections. We have this history of innovation in design and in community connections. On that front, I should mention that Barbara Henry, our Chief Curator of Education, will be joining us and that the museum has a really amazing history of school programming and community connections, as well as four multicultural advisory councils of long standing. So we have deep and long lasting connections with the community that we feel are very important to this process.

What we have been doing with art and history is rethinking how a museum like this is distinct from other institutions in this area, particularly in our connection to community. I heard the Director of the California Academy of Sciences talking about their new facility and the fact that over half of their anticipated attendance will consist of tourists to San Francisco. This institution is very different. Maybe someday Oakland will become a major tourist destination, but this is really an institution that is about this local community, particularly the East Bay. As those of you who live here know, this is the most diverse city in the country. There is no majority ethnic or cultural population in Oakland. That is a huge challenge also, and of course we know that in California in general, the demographics are changing at a rapid rate and will continue to do so.

What we want to do today is think about how this institution, with its interdisciplinary connections and scope and particularly with its Natural Science Gallery, can reclaim that leadership in innovation and maximize its opportunities with the distinctive characteristics of Oakland, of this place, of this community. But we are even more ambitious because we actually want to contribute to the field of natural history and natural science. I think all of us here have a history with National Science Foundation grants. This institution hasn't had a National Science Foundation grant for about thirty years and has not applied for one for many years. With this effort, we want to not only transform our gallery and what we are doing here, but also make that kind of contribution.

In discussions with Kathy McLean, Mary Jo Sutton, and Mary Marcussen, we have felt that we have a situation here not dissimilar from a lot of other natural history institutions, in that we have this construct, the diorama, and specimens that are not living, and yet we have this ambition to be more engaged with our audiences. We think we have the opportunity here to test some ideas, to do some research, to connect with our audiences, and to see if there are some new ways to approach natural history content and collections in a different way.



Lance Gyorfi and Lori Fogarty

Project Design Charrette

- This session is a design charrette, but of a different kind. We're not designing the exhibition, we're thinking about strategic design of the project. Does it seem like it fits for this institution? Have we left something out? Do you have concerns about it? Do you think it's relevant for today? Do you think it has greater impact than just internally at this institution? Where are the weaknesses? What has been left out? What are some of the problems?

This is an attempt to look at the constraints and opportunities and to really try to nail those and be clear when we leave this meeting that the museum is on the right track. If it's not, our hope is that you can help us get on the right track or that we leave with a list of homework and assignments that we need to do in order to get on the right track. • Kathleen McLean

Introduction to the Lightning Presentations

- We have asked our invited guests to prepare what we call “lightning presentations” in which each guest will take approximately five minutes to talk about what they are really passionate about. The time constraint helps people distill the essence of what gets them up in the morning, what inspires them, and what they’re thinking about now and for the future. We would like you to share with us why you are in this field and what keeps you going. I have found that kind of inspirational input really helps inform us later, when we get more concrete as we hammer through logistics or think through specific problems. Those are the free-floating muses that keep informing us throughout our meeting. • Kathleen McLean

Guest Passions and Interests

JULIE I. JOHNSON

John Roe Distinguished Chair of Museum Leadership, Science Museum of Minnesota

I should start by saying that my first career was as a middle school math and science teacher for the deaf. Although I transitioned from that field a long time ago, there are many things I take with me as a result of that. One is connection to people, connecting science with people in different ways. If you know anything about trying to do something in a foreign language, it really stretches you to think about words and how to use language. Though there are more now, at the time that I was teaching there were not very many signs for scientific constructs. Every day I was recreating how to think about a way to explain something like gravity, absent the words needed for the explanation.

How do you really think about experiences and ways of teaching kids who have different language ability or different language capacities, when you yourself are working in a language in which you are competent but aren’t really fluent? The struggle between language and experience and learning is something I take with me from that experience.

The other thing is that middle school students are one of those awful, lovely kinds of audi-

ences. As a middle school teacher you either love it or you hate it. I loved it because no day was ever the same. Even though the bodies that showed up were the same, the personalities were never the same. Being nimble, on your feet, and responding to things on the fly was really important.

The other thing I took from that experience is that pictures and images really do convey lots of meaning, and sometimes not the meaning we want. Having worked with very visual



Julie Johnson

learners, I've had them explain to me why they think something is so just because of something that they saw. How language supports further understanding, or how images actually distort understanding, is something that really affects not just kids but adults as well. So I take those lessons.

If I distill my passion down, it is this connection of language and image and learning, and the question of how we really look at that. The other thing that struck me at that time was that even though I was working with kids who were very visually oriented, I had some auditory learners who were deaf. It's an interesting and a weird dynamic. We all have preferences for our learning style. Some of us are more tactile, some of us are more visual, some of us are auditory, and there was this assumption that deaf kids are not auditory in their learning styles. That's not necessarily true, so it caused me to question and think about lots of assumptions I would have about experiences in learning.

For a number of reasons, not the least of which is the bureaucracy related to trying to actually do authentic teaching, I left formal education and went to work at the aquarium. But this notion of science and this notion of connection to people, this notion of learning and how we really think about experiences has always been really important to me. It has shifted somewhat in its direction from being focused on programmatic experiences to also encompass how institutions really think of themselves and

create experiences for staff to learn. We spend lots of time noodling and thinking about the visitor and an experience for visitors and how learning should happen for visitors and what's needed, and yet we still work in institutions whose environments are antithetical to the work that we do. I spend a lot of time right now at the science museum saying, "Okay, if you know this about visitors, what does this mean as an institution about how we nurture our staff and support its growth and development so that it can actually do its work better?"

DARCIE FOHRMAN

Principal, Darcie Fohrman Associates: museum exhibition planning

My background is art education, and I taught art in middle school. I also had frustrations and it was the late sixties in Chicago and when King was assassinated the whole block by my school burned down. It was a really tough time and I gained real insight into the way that art and tapping emotions can enhance learning. Then I left the country, came back, and didn't want to teach any more and went into informal learning and museums.

Through exhibitions, my passion even to this day is communicating without words and tapping the emotions as an entrée to learning whatever topic. I've been doing exhibits for almost thirty-five years, and the first half of my career was in-house, pretty much exhibiting artifacts and art and ethnography.



Darcie Fohrman



Rick Bonney and Mary Marcussen

Since I've been free-lancing I've been involved with all kinds of different topics. We all know what a hassle it is to work with new groups of people and not have that in-house relationship that we build over time. I think the most rewarding part of what I do and what keeps me going is the creative, collaborative planning. I think because of my teaching, that collaboration element to creating a project means that it is going to be better than any one of us could do on our own.

What happens in working with different institutions in this struggle of collaborative planning is to find out what is unique about your story. When we're in institution fatigue and go through museums and they all start to look the same, it becomes "so what?" The way to hook people is by understanding and addressing what is unique about your collections, your staff and your audience. That is what really drives me.

I am continually challenged and inspired by the collaborative struggle, during the conceptual planning phase, to discover what will be relevant to visitors. Finding ways to merge the content and design to get visitors to care? Always trying to create experiences and environments that will be emotionally engaging and bring visitors' voices into the exhibition.

RICK BONNEY

Director of Program Development and Evaluation, Cornell Lab of Ornithology

I'm not a museum person really, though I've done a fair amount of work with museums and I love them. Some of my earliest memories are of being in New York City and going to the American Museum of Natural History and looking at all of those dioramas there. I used to be swept away by those. I never read the labels or tried to understand anything about the exhibits. Only recently, reading some of the John Falk work, did I discover that was okay, that I'm what he calls a "spiritual pilgrim," which is the kind of person who goes into an institution and just walks around and sees the cases and all the people learning and having fun and walks out rejuvenated. So now I realize that it's okay that I don't read the labels or necessarily get the experience I was supposed to get. I just like being around museums and I like being around all the people who work in museums. I get rejuvenated from that.

In my work at the Lab of Ornithology, what I try to do is help people become scientists. I suppose it's all because of my father. He was one of those very annoying people who would never answer any of my questions. I'd ask how does such-and-such work, and he'd say, "Let's figure that out." He used to drive me crazy. I remember that science fairs would come along and everybody else was watering plants and comparing which grew better. I asked what I

should do and my father suggested that I go out and study the animals in the woods. I grew up in New Jersey, but we had a lot of woods around, so I would go out and I would make lists and I would make trails through the woods and mark all the trees, noting that this was a white ash and this was a black oak. Nobody every looked at them, but I had a lot of fun doing that. I kind of identified with contributing to or understanding science at a really young age.

Then I decided I would go to Cornell University. After I'd been accepted I said I'd like to see it before I signed on the dotted line, so my father took me to Cornell. The first place we went was the Lab of Ornithology, which I knew about because of the Natural Sounds Library that was there. We walked into the Lab and went into this room there called the Fuertes Room, which is lined with these beautiful oil paintings by Louis Agassiz Fuertes, who is a pretty well-known bird painter.

You know what power spots are, right? A lot of us read all of Carlos Castañeda when we were young. Remember the concept of the power spot? You step into it and you are there. I walked into that room and said, "Dad, I am never leaving this place." That was about thirty-six years ago and I am still there now, so it was a power spot for me.

What really worked for me about the Lab of Ornithology was that even though it was at an academic, scientific university that specialized in research, the Lab was always predicated on

the idea that amateurs or volunteers could make a huge contribution to science. The founder of the Cornell Lab of Ornithology, Arthur A. Allen, was the first professor of ornithology, probably in the world. He really always reached out to the community. He started walks for the bird clubs and people would go on the walks, come together and report the birds that they saw. After about thirty or forty years there was a data base of bird sightings. In the seventies, some of us analyzed it and we realized that we can learn about bird trends from this data contributed by these bird watchers.

For those of you who follow what we do at the Lab, that idea has now continued to develop, starting with Project FeederWatch in which people were counting the birds at their feeders and sending the data to us, all the way up to eBird. We have about five different citizen science projects going on now and get a couple of million observations a month in our data base. It has really been pretty successful and we've been able to get quite a lot of NSF funding to help make these data collection projects educational by teaching people about the birds that they're seeing, but also about the process of science: How do scientists think? How do scientists set up projects? How are you a part of that as a data collector?

What I am really interested in now is not only how people can contribute to this process of science, but how they can be part of the whole process of science. Starting with an invita-

Lab of Ornithology Exhibits: Object Theater and Hands-on Sound Experience

- You have an exhibit at the Lab. Do you want to describe that briefly? • Kathleen McLean
- We had a building that was built in 1956 or '57 and by the time the nineties rolled around it was literally falling apart. In 2004 we opened a new building and we did get an NSF grant to build exhibits for that new building. We have some pretty cool stuff in there. We have an object theater on citizen science that I'm pretty proud of. There are some funny stories about that. It was built by the Science Museum of Minnesota in a warehouse in Saint Paul and then disassembled and moved to Ithaca in a truck. I learned quite a bit about exhibit design in the process.

We also have a really neat exhibit that is a recreation of one of our professional sound studios, in which visitors can come in and use a version of our professional sound analysis software to literally look at bird sound and try to imitate it. They can also listen to a wolf howl and then they can howl and then look at their sound versus the wolf and try to get it to look more like the wolf. We have people who stay in that exhibit for up to three hours.

- Rick Bonney



Nina Simon

tional conference on citizen science that we held at the Lab the summer before last, we've reached out to all of the people who were doing participatory research. We're trying to figure out how people can really be a part of not only collecting the data but helping to come up with the questions, helping to analyze the data, and helping to take that data out to the local community.

This is where the museum connection comes in. I haven't done a lot of work with museums around the idea of bringing the public into exhibits or bringing people into the creation of exhibits. I don't pretend to know how that could be done, but I think the seeds of being able to figure that out are here in what it is that you are trying to do in this museum. I really look forward to some more discussions about that.

NINA SIMON

Independent Consultant, Museum 2.0

I've been experimenting over the last couple of years in museums with some of what Rick was talking about in terms of visitors co-creating and being the basis for the exhibitions being created. My entrance to science museums was through a love of math and science and a hatred for compulsory education. I'm one of those people who started reading John Holt in high school and argued with my mom for a long time about when I could leave. Fortunately, from her perspective, I stayed to

get a bachelor's degree, but then I was so out of there and wanting to do science and math education and energizing, but not in schools, though I really respect my friends who are teachers and think they have much harder and less rewarding jobs than I do.

The thing that I'm going to talk about that I'm really passionate about now is making social technology real. What I've been looking at over the last couple of years through a blog called Museum 2.0 and through some of the work I've been doing with different museums is the question of how you create these participatory modules that work in museums.

making social technology real

What I've been seeing develop on the Web and in science museums is analogous to a point. They both do push content, they both integrate multimedia, and they both have interactive content, but now I've seen a problem, from my perspective, with science museums. Where the Web has really exploded with 2.0 towards a participatory social approach, what I see a lot of museums doing is going deeper down the rabbit hole of more sophisticated interactives that are very individually focused. So while museums had the initial social edge over the Web because there are other people in the museum who you could potentially see

evolution of the Web compared to science museums		
	Web	Science Museums
Push Content	yes	yes
↓		
Multimedia	yes	yes
↓		
Interactives	yes	yes
↓		
Social Media	yes	not yet...

and interact with, which is not true when you are looking at the Web at home, now the Web has gone way past museums in saying, "Hey, the Web is becoming a platform for people to engage with each other, not for us to push content." I became really interested in this and very passionate about the idea that there could be ways in which museums could be physical analogs for what is happening on the Web. I think museums are uniquely positioned to do that because we are noncommercial, informal learning places.

I think there are a couple of important reasons we should care about this. One has to do with the town square idea. For a long time people were talking about museums as town squares, and frankly I think it's mostly a lot of BS. One of the reasons it's okay that we haven't gotten there yet was that there was never a great model to look at and say, "Oh! Here's a really high functioning town square. Let's make our museum like this." But now I think there is

that model because on the Web people are talking about religion, they're making peer-to-peer loans of money, they're engaged in a lot of town-square-type functions. I think there's an opportunity for us to look at that as a model and say, "Hey, now we can really make that thing alive that we've been talking about in museums." But that's sort of an idealistic reason.

There's also a more pragmatic reason that has to do with dynamic content. I think a lot of museum studies are showing that visitors want changing content in the museum and they want, with science specifically, up-to-the-minute content. Another thing that Web 2.0 has really brought in is this idea of how you can be pushing out changing content, and how you can make anything, even a dead, stuffed animal, dynamic by having a conversation that's always changing around it. So I think there's a pragmatic side of what these types of tools can give us.

I pulled this from Forrester Research. There are a couple of things about what I've been learning in this last couple of years of Web 2.0 applied to museum

Forrester's Social Technographics
www.forrester.com/Groundswell
A Flash-based profiling tool that classifies consumers into six overlapping levels of participation:

- creators*
- critics*
- collectors*
- joiners*
- spectators*
- inactives*



that I'd like to share in this short period of time. One of them is about the way that people engage with participatory media. I think museums, when it comes to looking at participation, would mostly focus on creators. So we tell visitors they can create a video as part of an exhibit or type in a message or add to the comment book.

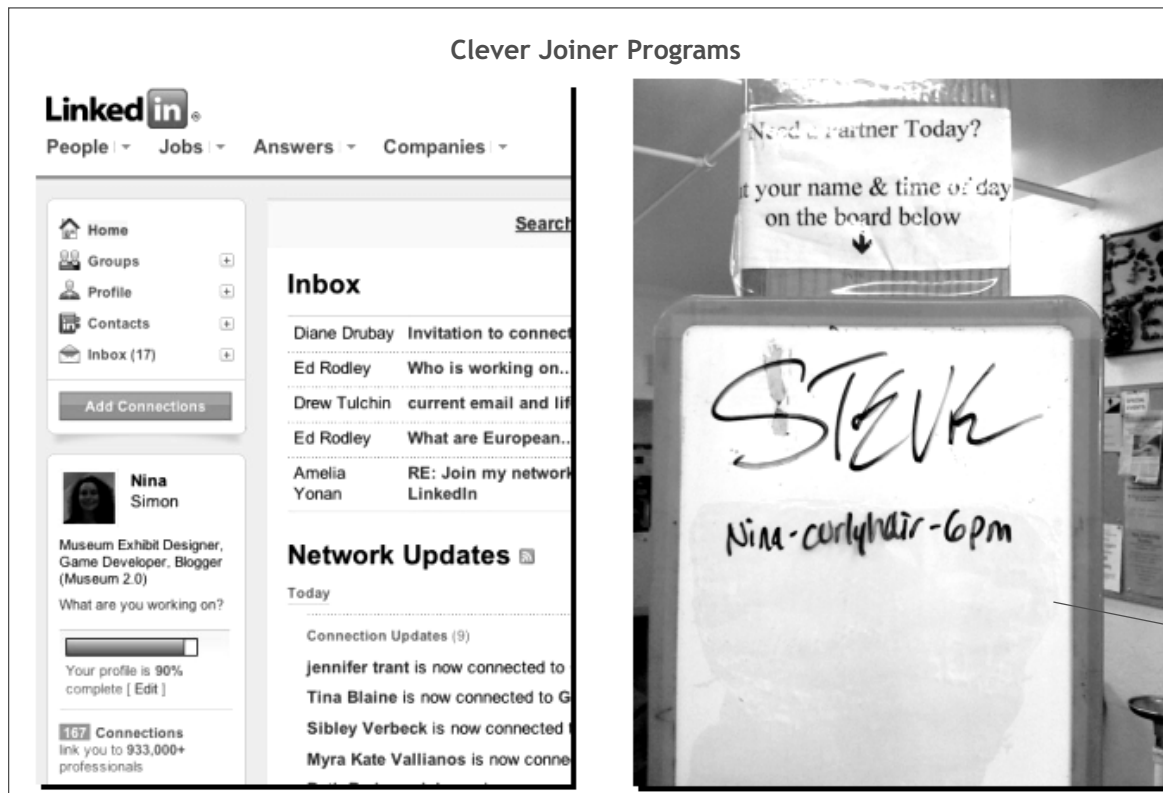
But what is being discovered about social media is that a lot of the people who participate are not creators. They are people who like to rate things—critics who are willing to put a review or rank a five-star thing.

There are people who are collectors, which is actually pretty small on the Web but could be huge in museums because we have stuff. These are people who like to organize and tag things and aggregate them and define what they are.

There are joiners, and this category has grown even since this profile was taken. If you are on Facebook or LinkedIn, you are a joiner, you want to connect with other people.

Then there are spectators and I think when we design things for creators, we also think of spectators because they are going to be the ones who watch the videos other people make. But I don't think we think about them enough, and I don't think we think about them as being twice or maybe three times as many visitors as the creators are. So when you make a design-your-own-thing module in an exhibit, I think we're thinking more about the experience for the creator than we are for all of these secondary people who represent a much bigger part of the audience. That is one thing that I want to talk about.

The thing that I get really passionate about is not applying this stuff to our Web sites but applying it in the museum and as low-tech as possible. I want to talk about two examples related to joining and collecting. First there is joining. On the left is LinkedIn, a social network like ExhibitFiles, like Facebook, where you can connect to other people. Functionally, what LinkedIn does is serve as a social object that mediates a connection between two people. Maybe I feel uncomfortable about



calling Doug on the phone, but it's easy for me to find him and connect to him there. On the right is a picture I took yesterday at my rock climbing gym. It is a very low-tech joining program. You can't read it very well but it says, "Need a partner today? Write your name and time of day on the board below." So at my gym you can write down your name and if you need a partner you can look at that board and find that person and connect with them. I think there are ways like this to make this very simple, but to still mediate an opportunity for people who are otherwise anonymous and afraid with each other to feel more comfortable.

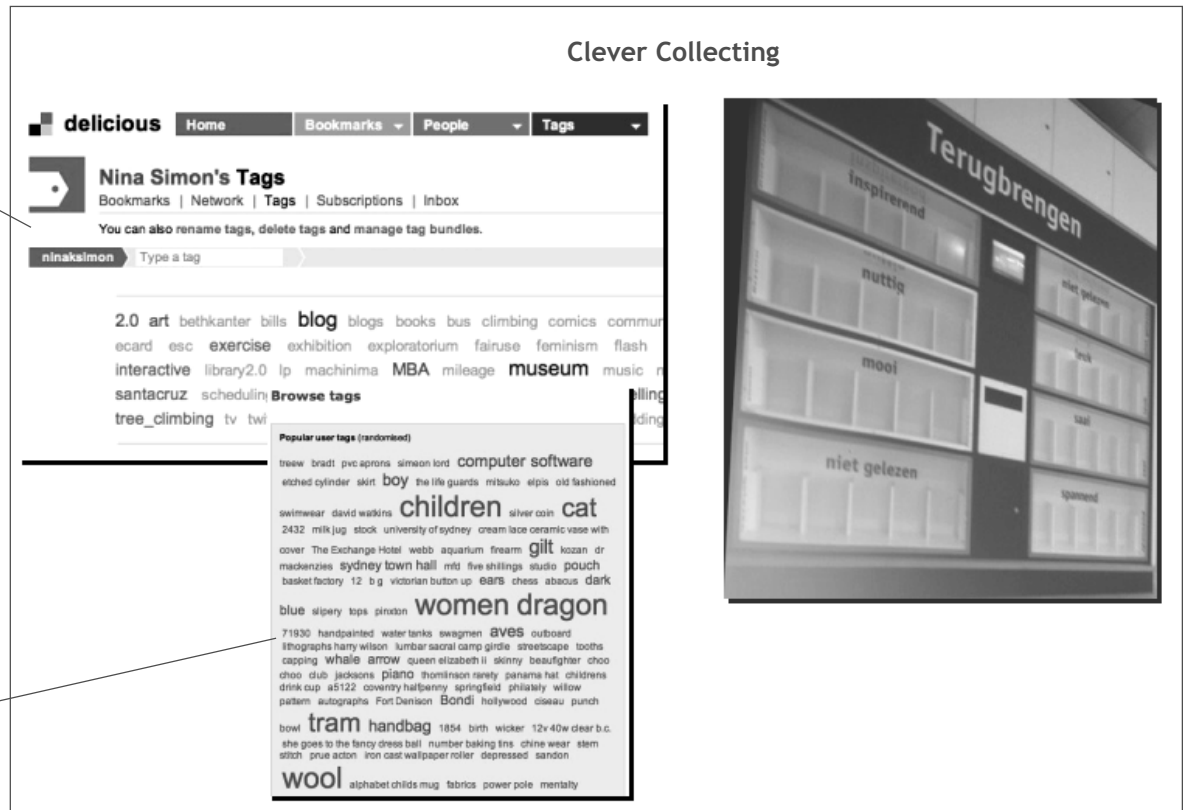
The other example I want to talk about relates to collectors. On the right are a couple of examples of collections. The top left one is on the Web. Delicious (delicious.com) is a site that people use to collect Web sites from around the Web. It's like having bookmarks on your computer, but you keep them on the Web and you tag them, which means you assign key words that relate to them. So I can always go back and look for all of the things that I tagged "museum," and it's a nice benefit that because it's on the Web, Christopher or anyone else can look at them as well.

There are a lot of museums, especially collections-based museums, that are looking at tagging projects, and it has become big in art. The clip on the lower left is from the Powerhouse Museum in Australia. Tagging is a great idea in some ways, in that if you want to

search a museum collection you can now search through these "folksonomies," these tags that have been designed by visitors who are thinking like you instead of searching by the taxonomies that work from the professional perspective.

But there is a problem with tagging in museums, which is that most museums, Powerhouse included, require you to go to their online collection to start doing tagging, and it's an activity that requires you to do something extra or other than going to the museum. The photograph on the right below in the "Clever

Clever Collecting



The image shows two examples of tagging systems. On the left is a screenshot of the Delicious website, specifically the 'Nina Simon's Tags' page. The page displays a list of tags such as '2.0', 'art', 'bethkanter', 'bills', 'blog', 'blogs', 'books', 'bus', 'climbing', 'comics', 'commur', 'ecard', 'esc', 'exercise', 'exhibition', 'exploratorium', 'fairuse', 'feminism', 'flash', 'interactive', 'library2.0', 'lp', 'machinima', 'MBA', 'mileage', 'museum', 'music', 'r', 'santacruz', 'scheduling', 'Browse tags', 'tree_climbing', and 'tv'. Below the tags is a section for 'Popular user tags (randomized)' which includes words like 'computer', 'software', 'children', 'cat', 'women', 'dragon', 'tram', and 'handbag'. On the right is a photograph of a museum display board titled 'Terugbrengen'. The board is a grid of white panels with Dutch words written on them, including 'inspirerend', 'nuttig', 'mooi', 'niet gelezen', 'spaanse', and 'gilt'. The board is part of a larger display with a dark background and white text.

Collecting” graphic is from the library of the Hague in the Netherlands. They have a brilliant tagging project. This library decided, we want to do tagging of our books; we want to know which books visitors like, which books they would define as being appropriate for different audiences, and things like that. The end product would be these shelves that have the different books as tagged by people.

But here’s the problem with tagging books in

the library: When do you need the tags? You need them when you look for a book, either by browsing the shelves or finding them via the computer. But when you’re reading the book or when you’re returning the book, which are the times at which you would naturally tag, you’re not going to the Web site of the library. None of us do that.

So here’s what they did. Instead of adding an extra step where they required somebody to go to the library Web site they did something else, and I feel confident that any person in this room could do this. They added extra book drops, and when you go to return your books you put them in the drop associated with different tags. The photograph is not from the Netherlands, it’s a photograph I made to illustrate this. Imagine if your library had just one additional book drop for books that you love. All you would have to do when you return books is put the books you love in that slot. Then the librarians can take those books, scan them, and add them to the list so that they are now tagged in the collection. They can also put them on a shelf titled, “Books that visitors love.”

What I love about this project and this idea is that they didn’t say, “Okay, here’s this thing and here’s how it works on the Web, and let’s sort of shoehorn it into what we do.” They said, “Here’s this idea we want to do. We need to figure out a way to make it work in the flow of what our visitors and patrons do and make it a really clever, added experience that gives



huge benefit.” I think that all of us in here, even those of us who would never tag something on the Web, could do this. I’m really enthusiastic about finding ways to do this in a lot of ways in museums. That’s what I’m passionate about.

TERRY GOSLINER

Senior Curator, Invertebrate Zoology,
California Academy of Sciences

I first became acquainted with museums when I was about four years old and we went to the California Academy of Sciences for the first time. I was one of those kids who grew up in suburbia and spent most of my hours climbing up on the hill behind our house and going to the creek and raising tadpoles and doing all of that kind of stuff. I was pretty much programmed to become a scientist by the time I was five and knew I wanted to be a marine biologist by the time I was fourteen.

So I came to the museum world through the scientific door and, through the work that I did at the Academy over the years, became increasingly involved with administration. As we embarked on this project to rebuild the Academy we spent a lot of time really focusing on identifying those attributes that differentiate us from other institutions. Much like this institution has art, history and natural science, the Academy has a planetarium, an aquarium and a natural history museum. We were then tasked with how you would integrate those things in a really effective manner and bring to

the forefront the research that goes on behind the walls that the public rarely sees.

One of the projects that I was involved in, which I think is why I was asked to come here, was the task of rehabilitating African Hall, which has beloved dioramas that were historically important, and yet had declining attendance and interest. I think I can best encapsulate that by a conversation I had at a donor dinner with one of our prominent donors. As we were sitting in African Hall the donor said, “I had heard these dioramas were going away.”

I said, “No, that’s not true. We’re going to redo them.”

He said, “Oh, that’s so good, that’s such a relief. When we come to the museum we never go there, but we want to know it’s here.”

To me, that was the most revealing thing about the challenge that we faced in terms of redoing that hall and how to integrate those things and make it contemporary. As a scientist, I had increasingly learned that studying the natural world also means studying conservation and informing conservation because that is the relevant aspect of the reality that we are dealing with in today’s world. So it was about trying to put that conservation story in the forefront of everything that we do and how scientists inform that conservation paradigm, so you really are moving into the realm of sustainability rather than pure science. That’s what the public needs to know about in terms of their experience at an institution. They



Terry Gosliner and Darcie Fohrman



Scott Sampson

need to take away something that is going to help them as citizens make more informed decisions. That visitor experience has to create that environment in which people can get out of the experience what they want in terms of meaningful tidbits that are actually going to be relevant to their lives and to their understanding.

As an institution that has a lot of real things and real objects, it's important to have the dead specimens but because we're an aquarium also, we have the opportunity to integrate live things into our exhibits and that was one of the main things that we wanted to do. We also wanted to infuse technology as a way of enhancing that experience and providing aspects that really couldn't be brought to bear using traditional specimens in their isolation.

I think we've achieved some of those things. You never achieve everything that you hope for, but I think we have a much better sense of what kind of institution we are and how you have to build on those core values and core strengths of your own institutional psyche to become unique and to become successful in today's marketplace.

SCOTT SAMPSON

Research Curator, Utah Museum of Natural History, and Research Associate Professor, Department of Geology and Geophysics, University of Utah

I'm a dinosaur paleontologist, which means that I have a job that is the envy of most six-year-olds. I was one of those six-year-olds and sort of never grew up at some level. I always wanted to work professionally as a paleontologist and it was one of the first words I learned how to spell. I ended up going to the American Museum of Natural History and worked at a medical school, and ultimately I ended up as Chief Curator of the Utah Museum of Natural History in Salt Lake City and a tenured professor there. I had the job of my dreams talking about dinosaurs, travelling all over the world and digging up fossils.

I still do dinosaur research, but unfortunately I got to the point where it just wasn't satisfying, and it took me a while to figure out what that was really all about. It became about sustainability. It became about the fact that I didn't think museums and universities were doing enough to address key issues surrounding sustainability. My work was such that I was buried in meetings and doing a lot of administration and I thought, I don't want to do this the rest of my life. I don't want to train another ten graduate students or write another two hundred papers on dinosaurs. I'm willing to do that on the side, but I really want to do something else.



My wife and I were planning to move to California at some point anyway and we now live in Marin County. I just finished a book for the University of California Press on dinosaurs, but it's really using dinosaurs as a vehicle to talk about how natural systems work and hopefully get people to think about today's world in a different way.

I've begun work on a book that relates to my real passion now, and that's the interface between education and sustainability. It's my very strong belief that we live at probably the most pivotal point in human history. We're going to hell in a hand-basket, but we have the chance to turn things around and if it's going to happen, it's going to happen in the next generation or so. We don't have time for me to write another hundred papers focused entirely on dinosaurs. We need to do other things. What might that be?

I guess I follow the thinking of a lot of environmental educators, in that the sustainability revolution is really two revolutions. The first part is what an educator named David Orr called an "efficiency revolution" in which we're going to buy some time by conserving energy and getting better at using the kinds of energies we have with new technologies. But that's really a stopgap, and the real revolution will come in changing the way people think about the world—literally changing world views.

This is, needless to say, a major challenge.

How do you go about doing this? I would argue that it's something that adults are not going to do on their own. We need to bring kids into this and this is where education is absolutely key. Natural history museums have a really important role because unlike universities they are integrative, they cross these disciplines, they can interact with schools and formal education and actually get the word out on what sustainability is.

Another aspect that has come through very clearly in the last two years about what sustainability means is that it is not an end point. It's not a situation in which you say, "Ah, finally, we're sustainable!" It's an evolutionary process and it's unique to every place. Natural history museums have an opportunity to drive sustainability in their own communities, in their own bioregions, or however they define it. I think that's an opportunity that really shouldn't be missed and to this point really has been missed. There's a lot of talk about this in natural history museums but very little action that I would call meaningful.

I've gotten to the point now where I'm not cynical, but I'm skeptical about the ability of natural history museums and like institutions to really change the way people think, at least by the traditional modality. I think one of the things we need to do is get people outside more and we need to be driving that so that people are connecting with the natural world. As Terry said, when he was a kid he was outside doing this and that's why he's a scien-

Utah Museum of Natural History Renovation

- Can you talk a little about the Utah Museum of Natural History renovation? • Lori Fogarty
- The Utah Museum of Natural History has just basically reinvented itself. It has gone from being a little university museum to a \$100-million-plus facility that will open in 2010 with brand new collections, facilities, and exhibits, and an overhaul of mission and vision. I was part of the leadership team for that project for most of the last decade and worked on everything from fund-raising, to exhibit development, to mission and vision. It has been an exciting time to try and rethink what a natural history museum should be today and I think the end product will be exciting. We have over 80% of the funding in place and we've broken ground • Scott Sampson
- We'll get to this later, but it seems like those two things might be in conflict—the first part of your talk and then your description of the new facility. I'd like to know whether you think all that money was worth it. • Kathleen McLean
- I'd be happy to talk about that. • Scott Sampson



Wendy Pollock and Douglas Long

tist today. I could say the same thing. As a natural history museum it's great to bring people in our doors, but I think ultimately that has to be just a stepping stone to getting people outside and guiding their education there also.

WENDY POLLOCK

Director of Research, Publications and Exhibitions,
Association of Science and Technology Centers

I'm more of the spiritual pilgrim sort in terms of my interest in museums, and it has struck me so much over the years how many people working in museums have talked about the dioramas at the American Museum of Natural History and how influential they were. And yet, over the past thirty years I've been watching science centers in particular grow, grow, grow. They have charted this enormous

growth with an increasing focus on things like the counting of attendance figures and square footage. I think this relates to the question Kathy McLean was posing to Scott about the direction of the Utah Museum of Natural History.

Lately I've been thinking about slow food as a possible source of inspiration for museums. It came out of the same era that this museum did, as well as the Exploratorium and the Ontario Science Center—all of the science centers that we look to in our field. In the late sixties some of the same cultural values informed the slow food movement. People from the Bay Area are very familiar with Alice Waters and others like her. In Italy, where it's really headquartered, Carlo Petrini uses three words, "good, clean and fair," to talk about what is the essence of slow food. "Good ness" captures something about communal values and the importance of pleasure. The word "clean" captures something relating to a concern about environmental impact and about eating locally. And the word "fair" looks at social justice issues and a concern about the producers.

I think there are a lot of analogies for museums that are interesting to think about. In this period of enormous growth in facilities, finances and attendance, we focus on blockbuster scale films and exhibitions. At the same time, there have been moves within the museum world to think about slowness, conviviality and fostering conversation, and not

Slowing down to catch up

People have become interested in the here and now again, in a continued space, where their bodies and minds can reach out for a pause, for a place to slow down and reflect in order to enjoy life. These people want to be surrounded by the sensible and essential, and be inspired by life's enduring qualities. They want to reduce the quick and temporary, and focus instead on what really matters: the basics that have stood the test of time. These basics are now being

used to structure their lives, create meaningful routines and expand their horizons. People are increasingly choosing for 'slow', with its attention to focus & detail: from cooking to coffee making, from baby care to gardening we can already observe its impact. More and more, people repeatedly engage in activities that enrich their skills and refine their lives according to their own personal rhythms.

necessarily in the old diorama or physical sense, but even in the kind of thing that Nina talked about that finds a home in the museum world. I think it suggests some inspiration for us.

I do think that industry is paying attention to this too. I noticed that Philips has this page on their Web site called “Slowing down to catch up” [*sidebar, page 16*]. I think there’s something for museums to think about there. We’ve been there all along, and maybe we have opportunities to go back to those roots.

CECILIA GARIBAY

Principal, Garibay Group: audience research, exhibition/program evaluation

I do audience research and evaluation, but that is sort of a tag that we can all use as common reference. I really think of my work mostly as social justice and I’ll let you know how I got there. I started doing research and evaluation primarily for social service agencies and came to visitor studies through that route, mostly because as a child growing up in Chicago in Lincoln Park, I could easily walk to what was then the Chicago Academy of Sciences and the Chicago History Museum. This career sort of married both of those loves: museums and research, particularly social science research.

Part of my education when I first started that work was to read lots and lots about visitor studies and what we know about visitors, how they interact, and who comes and who doesn’t

come. As I began to read I realized that there were a number of things that really didn’t resonate with me. For example, even though I admired so many of the people who had done so much of that work, one of the things I can remember getting stuck on early on was some of the seminal research on who comes to museums and who doesn’t and why. I remember that one of the reasons given was that people who come to museums like to learn new things, and people who don’t come to museums don’t value learning. I thought, no, as a lived experience, that does not make sense to me.

That was my light bulb moment in terms of thinking about really questioning where museums were and the field of museum studies in particular. As I looked around I realized that museums really do have a long way to come with issues of diversity and so forth. That became very central to the work I do, issues looking particularly at ethnic cultural communities but also diversity in much, much broader terms. That is where I really began to focus my work.

So a lot of my research and evaluation is informed by something that the broader evaluation field calls “culturally responsive and contextual needs” relevant to evaluation, which means that we look at the way we study visitors from a cultural perspective and realize that is really important. In a nutshell, it is important to understand that lived experience matters and to honor people with lived experi-



Cecilia Garibay and Kathleen McLean

ence within a research context or a visitor study context or in museums in terms of what they bring in the door with them. So for me it is this idea of the lived experience that is very important in informing any of the work that we do.

One of the areas in which I've then been doing a lot of research in my own work is around issues of cultural communities and diversity within museums, and I have been looking at that for a long time. So many of the projects that I take on really are projects that are not only strictly evaluation but typically have a research component around serving cultural communities or serving the broad diversity of a place. For example, right now I'm doing a project at the Children's Discovery Museum where they launched a Latino audience re-

search initiative a number of years ago and are now doing one with the Vietnamese community, and we are looking at those particular issues.

One of the questions we were asked to address was, what is the most pressing issue facing museums today? I would say in the work that I do it is two things. I've come to believe that our institutions can't really serve a broader diversity of our communities if we don't change. Organizational change and serving community absolutely go hand in hand and that is where I think there is a big disconnect. I think one of the most pressing issues is that if we're looking outward, we need to also look inward and understand what serving a community means in terms of what it is requiring of us as an institution and where that organizational change and development happens.

I would say that the other pressing issue is that words like "diversity" and "community outreach" and so forth have in many ways become such staples and such buzz words that they have no meaning any more. We really need to come back to explore very deliberately what words we use and what we mean by them and how we communicate externally as well as internally.

I think those are both real challenges for us and that we still have a lot of work to do around those pieces.



P. Christiaan Lieger, Douglas Long, Christopher Richard

Discussion: Democratization, Exhibit Approaches, Visitor Voices

DEMOCRATIZATION Scientists' Attitudes

- Cecilia made me think of something I would add. When you talked about looking inward, you didn't specify who the "we" are that are looking inward. As some of us try to work for more inclusion and even use the term "democratization of science," that becomes terrifying to most scientists who are trained in a more traditional way. I think we have to realize two things. One is that if we don't have a greater democratization of science, then science as we know it is doomed. Secondly, and this is where Julie's expertise comes into play, as we move in that direction the scientists have to be led almost gently to understand what the public is thinking about science. So a tremendous amount of research is needed into the scientists' attitude towards science as well as the public's attitude towards science. • Rick Bonney
- As scientists we love to eschew subjectivity, and that's where the inclusion becomes a little scary. That would be easy to do if we were really on firm ground, but simultaneously I feel science balances on a knife edge and it's even a moving knife edge, be-

tween subjectivity and recognizing that we are at best only asymptotics at describing reality. If we had the job done, we could go home. There are still unknowns, there will always be unknowns, and our picture always needs to be refined.

It then comes down to dealing with those criteria for anointing emergent orthodoxies. And that is such a challenging thing. How do we manage to get people beyond saying, "Sure, we love your observations, all your bird counts, that's great, that's wonderful stuff, we can use it," to get them to the point of having the sophistication to get from the raw data to analysis? • Christopher Richard

Museum Professionals' Attitudes

Giving Up the Fun Part of the Job

- I think that's true in museums also. There are plenty of museum people who are also terrified about the democratization of exhibits or whatever. One of the things that I was always pushing when I was doing this co-creation project at the Tech was, we need to give visitors the most fun part of our job. I think that's a really hard thing for people to do. We want to reserve the most fun part and

Visitor Participation in the Moving, Uncertain Target of Science

- I think what Christopher Richard said about the moving-target aspect of science is what can be just a dramatic way that visitors can relate to science. Traditionally it has been presented as an absolute, and we will only present our results or what we know for sure. In whatever subject matter, you want to reach conclusions and those findings have traditionally been presented as fact. What a great opportunity to have visitors feel like participants in understanding this moving target and your conflicts and disagreements and how it's changing and always moving, and how it is projecting in to the future—especially with climate change. I see it as something to grab and use. • Darcie Fohrman
- That's a really interesting idea, and I don't think I've heard people be that optimistic about that before. I think you've hit on something there. • Kathleen McLean
- As a non-science person it makes me feel less intimidated by science, just knowing that. And I only know that through working on projects where scientists say, "No, we can't do that. We don't know for sure." That's cool. You don't know for sure? Wow, you're human. That's something that helped me. • Darcie Fohrman

Preserving Expertise; Clarity re Uncertainty and Theory

- On this concept of democratization and throwing things open to the so-called wisdom of the crowds, there's a lot to think about here. Yes, we're all for that, we did the book *Visitor Voices*. On the other hand, we're living in a political climate that denigrates what really has been established in the sciences and I think we have to be very careful. We're living in a political climate where the teaching of evolution is even in question. That's unbelievable, and I think museums have to be careful in preserving a sense that yes, there is expertise. I know that's not the sort of thing to say these days, but I think it's very important. I think we have to be very careful about talking about scientific uncertainty because words like "uncertainty" and "theory" are used very differently in the sciences and in the general conversation. • Wendy Pollock
- Not careful as in not using them, careful as in being explicit in not assuming that the ways in which we use words and understand them are the same ways that other people understand them. That in fact, there are ways that people purposely distort how they're understood. • Julie Johnson

outsource the part that we don't like. When I'm thinking about co-creation I always think, are we giving them a job we wish we could keep, or are we giving them crap? I think citizen science does do that in some ways because you're giving people the part of the exploration and the observation element. What I've heard you say is that there are groups for whom there are other parts of science that would also be most fun that you would like to unlock. • Nina Simon

Sharing Power - Visitor Generated Content

- I would add that from my perspective, part of the issue is that visitor generated content and so forth really means that we're giving away power and that is a very difficult thing to do. Museums have traditionally been set up as the experts where a lot of the information resides. It doesn't mean that isn't true, but what is the mechanism by which you share that power? That's a pretty scary thing to do. Part of the problem is that I don't think we're honest with ourselves about owning that this is part of the issue, and if we had some of those conversations it might open up ways to think about this more creatively. • Cecilia Garibay

Democratization Based on a Foundation of Understanding

Prerequisite: Understanding Core Principles

- One of the things that is problematic in

terms of democratization of sciences is that there has to be a certain level of understanding of how science functions to allow that democratization to be really functional and valuable. Otherwise that dialogue is simply conjecture and opinion, which is not the nature of science. I think this is the kind of dilemma that we are dealing with. I think there is no opposition in the scientific community to the democratization of science. There is only benefit that science gets back from that democratization. But it is how that process unfolds so that the discussion really is about the substance of science and there's an understanding of what those core principles are to engage everybody. • Terry Gosliner

Information as a Catalyst for Democratization

- I think visitors are hungry for finding out



Nina Simon and Mary Marcussen



things they don't already know, and that exhibits and information can be done in such a way that they are a catalyst and jumping-off point for democratization. An exhibit is not going to change your life. I mean it might, but evaluation studies have shown that it's not going to change behavior in any way. But I think by presenting the information that's known so far and the background, you provide the jumping-off point and then it goes from there. And if you can have a real scientist on the floor or access to an expert to ask questions, that's a key part of the conversation. It's not like it's just an empty place.

• Darcie Fohrman

PUSH VERSUS PULL

Transparency and Push Content

Push Content with a Transparent Twist

- Hands down, my favorite science programming that I consume right now is *Radio Lab*, a WNYC show. They do some great podcast episodes in which they talk about their process and they talk about democratizing science in some really different ways, one of which is a Mr. Rogers approach. They talk about the idea that they think the single most important part of the show is the fact that when they go visit a scientist, they always include in the final tape a sequence of them knocking on the door and being invited into the scientist's office. They talk about

the idea that we're going on an adventure, we're going to meet somebody, they're not in some dislocated, undisclosed location. You can go to their house, you can go to their place.

They are democratizing, but they're doing push content. It's radio. One of the things they do, which I think is another side of democratization, is a lot of transparency via supplemental podcasts and blog entries about their process. For me, as a fan of their show,

Definitions: Push and On-demand Content

Push content is a one-way interaction in which the museum, the radio station, whatever, is putting out content. There is this whole question about push content versus on-demand content. Are you getting it because you asked for it, or is it just being pushed out?

Museums have this extra opportunity, which is why I get excited about this social element. We don't have to be solely push content. If you put out a newspaper, if you put on a radio show, you have to go to other media to start doing some of these more interactive things, but we have opportunities because we have these physical sites where people are engaging. It doesn't have to be all labels and videos telling you this stuff. • Nina Simon

Opinion versus Fact in History, Science and Art

- Regarding the discussion about design details called attention to the ramifications of making a choice one way or the other. I think that's really very important. It's very easy to get into creating an analogy between having an opinion about a contested historical era and having an opinion about something like the theory of evolution. They are completely different and I think we have to be very careful about it. Otherwise we're falling into the kind of trap that I think Julie was alluding to. • Wendy Pollock
- I think the difference between science and history is more one of degree than of kind in terms of reliance on experts. That's why we have footnotes. There's actually something that we're responding to, it's not just all opinions. • Louise Pubols
- I just think we have to be careful in talking about areas like evolution, as if it's a pro or con with something like global warming and climate change. • Wendy Pollock
- I completely agree, and we are actually having similar discussions about authority and expertise in the History Gallery as well. • Louise Pubols
- And in the Art Gallery. You would be surprised at how our art curators find this challenging as well because it is dealing with the relinquishing of authority and power and when people are trained with a specific expertise and have spent their whole careers learning about art, it's fundamentally a big shift that we're trying to make and it is very hard to figure out how you do it without relinquishing the real information, whatever the field. • Lori Fogarty

Beyond Push and Pull: Providing a Toolkit for the Process of Investigation

- I think the question of this dilemma of push and pull is, what can institutions like ours do?

We can help provide the toolkit that allows people to then begin that process of investigation, but it is sort of like somebody is interested in building a house and they don't have any tools or any experience. It's not a question of authority as much as it is experience, to share that experience and basically unlock the mystery of how science really functions in this particular case to answer questions that people are curious about. Sometimes it is a sense of natural curiosity, other times they are looking for very practical things.

We are the keepers of information regarding what those tools are and which tools are appropriate for each of the things that people are interested in exploring. If we can somehow make that very obvious to people, that push and pull will be in a very good dynamic flux of equilibrium. • Terry Gosliner

The Habitat for Humanity Metaphor

- There is this Habitat for Humanity concept which is, I don't have to know how to build the whole house, but I can still come and help build that house. If I can use a hammer then that's what I'll do all day. If I'm interested in learning how to use another tool I can do that, but I can still contribute to the whole without knowing every single solitary piece of it. • Julie Johnson

Johnson

I love seeing a lot of this behind-the-scenes stuff.

I think one of the reasons American democracy works is that even though we only get to vote X times a year, we get to have a transparent understanding of what's going on. I think that at the least we can do some of that and that will also make a big impact on people's feeling of being involved and being aware of what's going on in those confrontations and the challenges happening in science. • Nina Simon

Technology and Push v. On-Demand Content

- This makes me think about cell phone technology, which is changing so rapidly. Just in the last five years it has had to be really expansive to make all of this happen. Now you can give and receive information just by dialing a number on your museum floor, so you can hear from visitors and you can dig deeper. It's really going to be easier and easier for museums to be able to provide on-demand content. And you're working with that right now, right Nina? • Darcie Fohrman
- I've been playing around with it. I think it's interesting with cell phones. Unfortunately, I see museums looking at these new technologies as just more ways to push. And obviously you're right. You could very easily imagine an exhibition where, with every exhibit, there is a phone number you can call and leave your comment or whatever. But more museums

are pursuing the other side of that equation.

• Nina Simon

- Push "one" to tell us we're stupid. • Darcie Fohrman

Changing the Organizational Paradigm

Beyond Push and Pull

- This gets back to what I think a number of you have talked about this morning in terms of the organization. We have to be much more self-reflective around who we are and what our responsibility is to our public and what our role is. There is lots of technology coming our way, but over and over again we just figure out how to use it to push more content down people's throats. And we don't think there is any other way to get something going that has real meaning to it. Education is pushing information into people's brains, and until we get out of that paradigm, which is a very powerful one, we are not going to advance.

And the opposite is true. Wendy raised a cautionary note, which I think is absolutely essential, that it's not giving up the content, it's just thinking differently. Not pushing isn't the same thing as giving up the content, there's something else going on, but we tend to think in such black and white terms. If we're not pushing content anymore, then content is out the window and all hell breaks



loose. That's not the case. But we haven't really thought that much and that deeply about what other alternatives there are other than these polar, black and white, push or pull alternatives. I think that's the challenge, and this project is right in the middle of that challenge. • Kathleen McLean

Museums as Libraries

- One thought I've had listening to the push-pull idea is, what if museums were more like libraries? When we go to the library we don't read every book. We go to the section we want to go to, we get the thing that we want, we read it. We're exploring or investigating, and then we come back and that sparks us to do something else. That's one idea I've been thinking about a lot over the past year. • Julie Johnson

EXHIBIT AND PROGRAM APPROACHES

Exhibits as Science Metaphor: Imperfect, Evolving

- It seems that much like the concept of employing sustainability as a platform we can use whether it is a zoo, an aquarium, or a science museum, it is also using the platform to think about the nature of science and asking questions. It is asking questions that help us find out answers but more importantly, that help us find out the next question. We have sort of lessened the importance of the fact that is actually not the answer that is most

important, it is the next question that leads us further on. There is an excitement in that, but we need to try to convey that in a way.

I think sometimes our exhibitions don't allow people to understand that it isn't actually about the answer, it's about the next question. And it's okay to have more questions than answers. I think there's something in that piece that's scary: I'm going to put something up that's not finished. What is a finished exhibition? And can we change the paradigm of what's "finished"? Is it good enough? Is it good enough to provoke thought and dialogue and questions? Is it not perfect? Can we strive not for perfection, but for something that leads people to further engage and think about stuff? Not that being perfect means being incorrect, just that no exhibition is ever finished, it's always a work in progress. Maybe if we think about things that way it frees us up from saying, well, we can only do it if it looks like this. • Julie Johnson

- It's all a prototype and formative.
 - Darcie Fohrman

Conversation Starter: Backcasting to the Future of Sustainability

- It seems to me maybe this comes down not so much to a question of pushing or pulling content, but to creating a conversation and how museums create a conversation because

Opening Up the Dialogue via Programs; Capturing Everyday Knowledge

- There are a lot of wonderful modes for having dialogue sessions. MIT Museum does what they call the "Soap Box," bringing in lots of scientists to talk and engage. And other museums have lunch box science programs. There are a lot of ways that you can engage meaningfully.
 - Wendy Pollock
- Have you seen any of that done in the exhibits themselves or mostly programmatically?
 - Lori Fogarty
- I think programs are much easier to figure out because you can respond on the fly and you've got real human beings and real conversation. But I think there are ways of capturing everyday knowledge. People do know a lot about a lot of things like gardening, auto mechanics. There are a lot of things we do all the time that I think can be reflected and captured and honored.
 - Wendy Pollock

Something Active to Do/Seek

- I do know that my kids never wanted to go to an art museum until they went to their first one in Philadelphia that had a scavenger hunt. They were five or six years old then and the hunt involved things like finding pictures with a bowl in them and they went off to find a picture with a bowl in it. As soon as they were able to do something that was relevant to them, they would stop and say, "Oh, look at that painting, it's kind of interesting." • Rick Bonney

Visitor Voices: Nanoforums

- Another process example is the Nanotechnology Informal Science Education (NISE) Network, which is a large center funded by NSF. One of the things they are experimenting with are these nanoforums, which engage scientists and people from the community in a structured dialogue situation. There is somebody who is presenting some information of scientific import and then there are some structured conversations that visitors engage in with the scientists there. Usually it's two or three scientists and sometimes they have complementary points of view, sometimes not. The point is working with communities to dialogue with scientists there around various issues. Now I have two scientists who have just told me two opposing things, what do I do with that? That might be something else you want to think about doing.

• Julie Johnson

traditionally, museums don't do that at all. They're places where you go to get learning. So how might you start that?

The issue of sustainability is a really good one to bring up in this respect because sustainability is never going to happen with scientists telling people about how it needs to happen. It's only going to happen when you bring stakeholders to the table from all of these organizations, with people from nonprofits and business and science and moms. It happens when you have everyone represented and they talk about what's important to them and then you do that process of backcasting, where you figure out where you want to go, you figure out where you are, and then you backcast. Instead of forecasting and talking about the future, you figure out your future goal and then backcast to figure out how to get there. Imagine if museums could start a conversation about how to backcast.

And imagine doing this for Oakland, where you bring in community representatives from all different aspects of the community and ask, what would sustainability look like in Oakland? You bring in scientists to talk about it, but you also bring in environmentalists and teachers, and it has to include social justice as well as the environment. So you ask what it would look like, and if we can get some sense of what it would look like, where are we now and how would we get there? That is all about a conversation, and why couldn't museums lead that conversation in their communities? Maybe this natural history exhibit would be a way of doing that, of sparking that

conversation. • Scott Sampson

ENGAGING VISITORS, ELICITING VISITOR VOICES

Ongoing Infrastructure for Visitor Voices

- What Julie was talking about is something that is happening a lot on the Web, releasing things in beta. When I look at the project description, the thing that comes to my mind is, gosh, if you're going to do all of this great co-creation and working with communities to develop exhibits that then exist, that seems like you're stopping too early. How can you create processes such that that can always be happening on the floor? I think there's also an element related to what Wendy was saying about democratization. Another thing I would argue that museums have not done well in integrating visitor voices is creating intentional infrastructure for that.

When I look at what is going on on the Web, a lot of it is actually pretty highly controlled in that the platform is controlling the conversation in some ways. A very heated example is Digg (Digg.com), a Web site where people can thumbs-up and thumbs-down other things on the Web so that on the front page each day you can see the most popular things on the Web. But there's an algorithm behind how things get on that front page, which is highly controlled and somewhat secret, and there are a lot of questions about the idea that it's

not the most popular, it's something else. What is it and who decides? And yet the creators of Digg would argue that is what keeps Digg successful.

A simpler example would be how ExhibitFiles (ExhibitFiles.org) is really nicely set up such that it features case studies on the front. You get this idea, oh, I see that there are images, I should add images. It's intentionally designed in a way to promote the kind of use that they want to see. I think that one thing we can do is figure out, what are some infrastructures beyond just letting people write down their comments on wax things and attach them to plants that could really start getting the conversation that we want it to go?

I think that a place that is doing that well is the Holocaust Museum, where they have a lot of contentious content, and they have positioned themselves in terms of online forums as a place where those discussions happen. They feel like if people want to express things that are totally antithetical to their mission, they would prefer having that conversation happen on their site rather than anywhere else. I think that's an interesting question for museums with topics like evolution. Do we want to be the place that conversation happens, even if it means acknowledging and allowing ideas that are fundamentally antithetical to our mission?

• Nina Simon

Visitor Voices: An Open Space Session

- This discussion is sparking two things, one of which has to do with the process piece. I don't know the whole entire process that you'll ultimately go through and where your voices will come from, but you need some way to engage your visitors or potential visitors in a dialogue around these very questions that you have. I'm reminded of some work I did last year with the Ohio Historical Society. They did an open space conference. It was a one-day event. The Ohio Historical Society has 100-some-odd sites across the entire state, so they're huge. They invited people from far and wide to come for a day to dialogue with their staff about what the museum could be. They started it with a half-hour overview and some questions that the museum was struggling with about how to make history alive, the importance of history, etc.

In the true tradition of open space, people got to think about what questions or topics that they wanted, but these were people from the community. So we put up the questions, we saw who wanted to do what, we put it up on the board, and then for the rest of the day it was this open space process. The people from across the state who had come for that day, kids, adults, senior citizens, volunteers, staff, and some of their board members, had this engaging conversation about history itself, and history in terms of what the museum could be.

Co-creation as an Ongoing Process: Levine Museum of the New South

- An example of a place that has done co-creation and done it well is the Levine Museum of the New South. That would be one group to check in with. My understanding is that their process was very much co-creative and they've done some really great work. Also, it didn't finish with the exhibition, it continued. It wasn't engaging the public to help create an exhibit and then saying thank you, you can go. It was saying, we've finished this piece and now there's still more to do. • Julie Johnson

Starting with Inquiry, Visitor Questions

- I work primarily with science programs, bringing school children in and going out to the classrooms and doing outreach. From the museum education perspective, this whole concept of inquiry-based learning is really checking in with particular students about where their baseline is and responding to their questions with an experience. For instance, one of the programs we do is a grip and grab program in which we take taxidermy out into the classroom. The children have so many different starting points in terms of understanding, what is this that I am looking at? You have to start right where they are. Is this dead? Is this alive? Why is it in a vitrine? You're building on their own questions. It's not necessarily that we're pushing an agenda. We have general goals, but it's not specific in terms of: This is what I want the child to get regardless of where they're beginning. • Rebekah Berkov

I don't know what you're actually thinking about in terms of engaging various constituencies in Oakland to help you think about your questions. One of those questions could be about how science really happens. • Julie Johnson

Exploration Based on Visitor Questions

- The word "facilitation" is coming to mind for me here. What is the role in facilitating the understanding of the science process? When we wrote our first NSF grant to develop citizen science, we didn't call it citizen science then. The idea was we need to help the public understand the process of science, and what better way to do that than to involve them in the process of science? We got very excited about the idea that people would go out and collect data and send us data.

Then we did our first evaluation studies and surprise, they didn't learn anything about the process of science because they really weren't doing science. They were going out and collecting data to answer our questions with our protocols and then we were analyzing the data and feeding it back to them.

With our classroom projects we do what Rebekah described, we start with their questions. What question do you have about birds here in your school yard? It's

amazing what they'll come up with, and it's amazing the results that they'll get and can send to us for publication in our newsletter. My favorite study so far was done in Monterey Bay. One student in sixth or seventh grade wanted to know about predator deterrents on fishing boats. She studied how successful something called the gull sweep was, and some people had fake owls on their fishing boats. That piece probably would have been publishable in the *Wilson Bulletin* if she had just taken it a little bit further, and she was a middle school kid. It started with her interest and her question, and the teacher used our materials to guide her to the end. I'm sure she did understand something about the process of science.

What I don't know how to do is translate that into something that is exhibit-based. The thing that comes to mind for me is trying to start out with the kinds of thing that Cecilia is so good at doing, trying to figure out what questions the residents of Oakland have about the natural systems in this area that the museum could help them study and in some way connect that to what is here in the exhibit halls. I don't even know what is in the exhibit halls, so I can't go anywhere with that right this minute. • Rick Bonney

Grounding: Givens, Assumptions, Goals, Organizational Process

EXPLORING THE GIVENS

The Dioramas

Visitor Studies

- There has been some research and visitor study on the dioramas. It hasn't been a full summative, but mostly around changing the content of the labels. There has been a timing and tracking study. The hall is 29,000 square feet and people are staying about thirteen minutes. People are staying at most of the components about thirty seconds. There are a few at which people are staying for two minutes and I think there are two where people are staying up to four minutes. A lot of what people are asking when they look in there are the names of the pieces, where these are taken from in California, or if they're in California. That's a huge percentage of the questions. In terms of other visitor studies, they have been mostly around trying to redo the text on the cases. • Mary Jo Sutton

Recontextualized, Reinterpreted

- Regarding the givens, my understanding is that there are no givens but there are a variety of expectations in terms of the

preexisting dioramas and exhibits that we have there. There is an expectation that the majority of those will stay, but they will be recontextualized, reinterpreted. We don't expect the addition of a lot of new elements, but there will be installation of a lot of new and emerging technologies to help visitors better understand and interact with what we have. Those have yet to be fully identified. • Douglas Long

A Focus for Engagement

- There is a proposal on the table. In the spirit of sustainability, rather than gutting the gallery and bringing in all new exhibits that this museum could not afford to do at the level that these dioramas were done, most in the sixties and Aquatic California in the nineties, could we not use these as the conversation point to bring community people to the museum and engage in dialogue, however we do it—through forums, workshops, that open space approach, all kinds of ways. And this is not just the Oakland community, it is really East Bay, so it is the broadest demographic of the regional community.

The idea is to use these dioramas as the engagement tool because they do represent

What Are the Givens?

- What are the givens here? We could sit here for two or three days talking about how the museum experience could, should, or needs to be transformed for the 21st century. Or we could say, here's the audience the museum wants to reach out to. If it's an NSF grant, that's where it has to start. And then what are the building blocks that we have that are in play? Which ones are not going to change, which can be re-done completely? I don't know that I have a sense of that to ground the conversation a little bit. • Rebekah Berkov
- Are there some givens? Here's one: Are the dioramas staying? Is that nonnegotiable or is it still up for debate? I think that's a very interesting question. • Julie Johnson
- I'd like to get a better understanding about what is known already about who belongs, who comes, the community. There were some things in the background piece about low attendance for an institution this size. That raised more questions than it answered. What's "low" and what's "attendance"? • Wendy Pollock
- My question is related. Has there been research and visitor study on the current dioramas? • Darcie Fohrman

An All-star Among School Kids

- A particular exhibit that school groups really love is the wood rat nest. It's really sort of a star. • Christopher Richard



The wood rat nest.

California as a biodiversity hotspot, with many, many species on view in this gallery; to use those up-close experiences with all of these species and plant and animal communities as a way to engage in dialogue. The new interventions, whether tools, ongoing forums, or whatever they are that come out of these conversations, will be the essence that animate these dioramas. It may not be exhibitry. You may find out in this process that it is all programmatic.

Rather than say they're a total given, I'd think we are testing the idea about them being a given with this group here. And if not, then what? • Kathleen McLean

What Visitors and Staff Love

- In addition to the averages, is there something in there that people really love, either visitors or the people who work here?
 - Wendy Pollock
- I think people are really amazed by the beauty and artistry in that hall. • Mary Jo Sutton
- Could I add something to that whole notion of what visitors love? When we were trying to figure out what we were going to keep and what we were going to change at the Academy, we found that there was a hard core constituency for everything in that building. If you respected all of those visitors' wishes nothing would change, and attendance would continue to decline. This is the challenge that we all face. • Terry Gosliner
- I was going to say that visitors, but particularly people who have a propensity for and interest in natural sciences, love that gallery, period. • Kathleen McLean
- When I first came to the museum in 1988 when I first moved to Oakland, I was amazed because not only were there habitats that I'd never seen depicted in other museums, there were species of plants and animals that I'd never seen in other museums. I was just amazed that the original designers took the time and the effort to make these very detailed models that included critters that nobody had ever seen or probably never knew about or even cared about. Maybe I'm biased because I have a science background, but I was floored by this museum because of the incredible diversity of what it shows in terms of California wildlife. • Douglas Long
- Examples of what kids will bring their families back to see are the bat cave and the egg case. • Amy Billstrom
- During the last session on the Natural Science Gallery with local museum professionals, one exhibit that most participants talked about was the termite exhibit. It has live termites, so even though it's small it has great appeal. Another was the octopus, and the raccoon in the storm drain. • Rebekah Berkov

The Challenge:

How to Effectively Use the Dioramas

- In terms of the sacred cow of the dioramas themselves, I was very compelled early on by something Kathy McLean said, which is really about sustainability. You couldn't recreate these dioramas or cases or this "real estate" today, or the quality, as Douglas said. They are the museum's collection. So is it money well spent to just take them out and start over, with \$9 million dollars, and what would you get for that? For us it's really thinking about how we bring these collections and animate them and make them accessible for audiences today. I think we would have to have a hugely compelling reason to say we're moving totally away from dioramas. I think that's the challenge we've set ourselves, how to most effectively use these. • Lori Fogarty

A Library Metaphor

- Just recently, I was reading the overview that Douglas Long wrote about the gallery. I know that when the Cal Academy was renovating, California as a biodiversity hot spot was a very big deal. It took me a while, but in fact you do think of this place as a library, and the Natural Sciences Gallery as a library of the species and habitats in California, that's what it is and could be. It's not a totally complete library, but it's much more total than anything else out there and it does reveal or show why California is one of ten biodiversity hot spots in the world. It's the

only one in the United States. There's something about that, getting back to talking about the specificity of the place, that is here.

The staff had always thought about keeping the dioramas and even adding more dioramas to complete the curriculum in a way. I think that's up for grabs in terms of whether you want to go there because they take up a lot of space and they cost a lot. Is it necessary to be more comprehensive or not, or like new libraries, is it maybe about focusing more and using the existing collections in new ways? They don't have a lot of money, so it's not like they can do everything.

- Kathleen McLean

Attendance

Attendance Goals

- One of our greatest institutional imperatives right now is audience development. I do take to heart what Wendy said about not just measuring by attendance figures. We are right now at an annual audience of about 150,000 to 200,000 visitors, and that includes over 50,000 school groups that come here.

We want to grow our audience to 250,000 to 300,000 visitors a year at least. One of the things we're trying to do is particularly build our family audience, widely defined, because the East Bay is much more of a family-friendly place than San Francisco and the number of families moving to the East Bay is

The Issue

- So what is the issue here? If everybody loves this gallery, why not just leave it the way this is? • Kathleen McLean

Who Attends?

- The current visitorship of the museum is largely older white audiences (if you take away the school groups, which reflect the diversity of Oakland). The goal is to make the audiences in the galleries more like the population of Oakland as a stated, specific goal. The goals for attendance and diversity are aggressive. • Mary Jo Sutton

Budget

- The budget is \$12 million for renovating the gallery. Part of that does need to go to the architectural renovation because as I said, the building hasn't been touched in years. If it's comparable to what we're doing in the History Gallery, which is not a lot of expansion in terms of building onto the building or doing major build-out within the gallery that will be around \$3 million all-inclusive, with hard and soft costs for architecture. That's all new lighting, new floor covering, data and electrical. That leaves about \$9 million for the exhibit project itself. • Lori Fogarty

Dollars and Square Footage versus Impact

- Part of the issue, when you look at the size of the museum and compare the attendance to the annual operating budget and figure out cost per visitor, is that it's really up there. They need to have more people coming in. And also when you look at the square footage of the gallery—25,000 square feet should have a certain number of people coming through it no matter what your budget is, and it's nowhere near that. If this place is to become more sustainable and more competitive in the market for funding and for community and tax payer dollars, they're going to need to really ante up in terms of having a bigger impact regarding number of people served. • Kathleen McLean

large. And we want to grow the audience of younger adults.

The interesting thing, and something that we have put in our concept paper, is that the Bay Area is such an epicenter of conservation, stewardship and environmental education organizations. We do have a lot of lifelong learners—active docents, guild members, people who know a lot about science—as does the Academy. While certainly trying to be more reflective of the urban audience in Oakland and the East Bay and the Bay Area in general, our challenge is to span from young children to older adults to these audiences that have greater knowledge and sophistication.

- Lori Fogarty

School Groups

- We do have a very strong field trip program and we anticipate that continuing. We don't see it growing a lot because we are actually near capacity on Wednesday through Friday when we are open for school group tours. All of our school field trips are linked to curriculum standards and classroom curriculum, so we do very well with the school group audience. • Lori Fogarty
- School groups include grades K-12, with the majority from third and fourth grades because of California history. History is

the main draw, and history programs have a waiting list of a hundred trying to get in. Science has high quality programs which fill up, but we don't have the same waiting list. In my opinion the reason for that is because we have a niche, but there are plenty of science institutions in the Bay Area. Teachers know what we offer and we try to fill that niche by doing what we do best. We fill it nicely and we're at capacity, but there's no waiting list.

- Amy Billstrom

- That is also because every fourth grader in California has to take California history. They always do a mission project, they always do a Gold Rush project, so we can hit the complete sweet spot there. And there really isn't any other history institution in the Bay Area. • Lori Fogarty

Programs and Councils

Programs

- I was going to ask, what are the strongest programs and to what extent have they had any impact at all? I see the Fungus Fair and the Wildflower Show and Days of the Dead. Are those the ones that have to do with the natural sciences that are the most popular? • Wendy Pollock
- Days of the Dead doesn't relate to the natural sciences, but it's the one I keep using as an example because it's a community based



program. The Fungus Fair and the Wildflower Show do relate to the natural sciences and are very powerful and bring in thousands of people every year. So this place has the ability to really galvanize and draw people. The question is, how do they extend that programmatic skill they have and that connection to the audience and communities that they have in a really authentic way into the gallery? • Kathleen McLean

- What percentage of your programs bring people here versus outreach, and when you do outreach are there places besides schools where you're going? • Nina Simon
- I would say about eighty percent is here. • Barbara Henry
- And mostly schools, not other types of organizations. • Lori Fogarty
- So you're not going out to malls, for example? • Nina Simon
- But I think Days of the Dead, the Fungus Fair and the Wildflower show are examples. If you set aside the school audience, the thing that brings the most people to this museum are the public programs, probably even more than the exhibitions with some exceptions. I think Days of the Dead brings in more people than any other program, and that includes families, adults, everybody. • Kathleen

McLean

- I think your distinction sort of breaks down in the examples that you're using. If programming is like lectures, demonstrations, hand-on stuff, it's when you have that and the exhibit component—all those mushrooms, or all those flowers, which are ephemeral, temporary exhibits. So it's that integration of that exhibit material with the programming. • Christopher Richard
- But it's still a one or two day thing, which makes it a program really. It's not an exhibit. • Kathleen McLean
- But I think it would be interesting to try and develop things that are intermediate in scope. If you could have something that had a month-long duration. • Christopher Richard

Advisory Council Input

- Have you asked those groups what they would want to see changed in the Natural Science Gallery? • Wendy Pollock
- There hasn't been a lot of involvement of the advisory councils with the Natural Science Gallery in recent years. Several years ago our former Chief Curator of Science came and had a meeting with them to share the preliminary plans and get some feedback, but not since then. There has been more with the other galleries, but we're just about to

Opportunities: Community Involvement, Advisory Councils

- This is one of the few museums that really walks the talk in terms of community engagement. It may not be in the galleries, but that walk has been happening. It has been in programs, in the educational programs. The real thing now is to take that incredible asset, those four advisory councils that are tremendously committed to this place and have been around for a long time. They are doing programs on a regular basis.

For example, the Latino Advisory Council decided that the way they were going to encourage more Latino families in the East Bay to visit the museum was to contribute to a kitty to buy them memberships and then have a buddy system so that when they came to the museum, the Latino Advisory Council members are here to greet them, make them feel comfortable, walk them through the museum and talk to them about the experience and what you can do here. That is an incredible program and things like that are happening everywhere in the programmatic side of this institution.

So it is taking that opportunity of that deep community commitment and somehow getting it into the galleries where it has never really been. • Kathleen McLean

Imperatives Across All Galleries: Flexibility and Change, Programmatic Space, Tri-Lingual

- There are a few things that we have as imperatives or guidelines in all three galleries. One of them is the need to build flexibility and change into all of the galleries. That is a big question: What does that mean? Our art curators would say, "We're always flexible and changeable because we take things down and send them on loan," but no visitor would ever notice that. So it has to be noticeable flexibility and change.

We've put a guideline in place that there have to be programmatic spaces within the gallery. Not huge lecture models, but enough to have a gathering space for twenty or thirty people, not only for docent tours but knowing that programs enliven these gallery spaces. We've been doing a lot of experimenting with temporary exhibitions to incorporate programming in the galleries.

We are also doing multiple languages. We have an absolute commitment to doing three languages in all three galleries: Chinese, Spanish and English. That will be done to differing degrees and we are experimenting with what techniques we will use, but there will be a visible and graphic presence of all three languages, so it's not just handouts or audio guides. That will probably vary a bit between the three galleries. • Lori Fogarty

start with this one. • Barbara Henry

Space Considerations

Changing Exhibitions

- Going back to the expectations or parameters: Is there some moveable or changing space in the Natural Science Gallery, or is there another space in the building that serves as the rotating space so that part of the year art gets the space, then history, then science? In other words, how are you thinking about the change piece? • Julie Johnson
- There is a special exhibition space within the Natural Science Gallery at the very back. Typically that is a changeable special exhibition space. Then we have two connected galleries, the High Bay and the Low Bay, available to all three departments. I would say that art does the most programming there, history second and science third because of both ease and cost of installing art exhibitions compared to history and science. It is also probably related to availability of travelling exhibitions in history and art that are easier for this institution than history or science. • Lori Fogarty

Loaded Lounges

- In the two other galleries, and hopefully it will continue down here, there are "loaded lounges," which is a term Barbara Henry

came up with on the history team. These are spaces where people can sit and relax or socialize and check e-mail throughout the gallery. They are not just benches that you sit on to look at the artworks, but places that might have additional content or games or phones or who knows what? What could those loaded lounges have throughout?

- Kathleen McLean
- So these are mediation spaces. • Julie Johnson
- Or even just lounges, social lounges. • Kathleen McLean
- It's the slow food idea. • Lori Fogarty

Orientation Area

- Another concept that has come up for the other two galleries is that of having an orientation or gathering area at the beginning of the gallery so that people coming in get a sense of the gallery and can get their bearings. • Barbara Henry

Cross-Gallery Stories

- I think it's important also that we're looking for opportunities to tell stories across different galleries. • Douglas Long
- Yes, that's another thing we've been working on, how to make those connections between the three galleries. • Lori Fogarty

KEY CONCEPTS, GUIDELINES, MEASURES

Organizational Change

- I was struck by Cecilia’s comment, which was echoed by Julie, about how a lot of the eventual outcomes actually relate to organizational change. I wanted to ask you a little bit more about that and tell you a little about what we have been doing here at the museum because I completely agree that that is fundamental.

It has been an interesting process over the past couple of years because we’ve had three or four simultaneous processes happening. One is that we did do a new strategic plan and rewrote our mission statement. That was a big part of the visioning process we’ve been involved with. In the course of that process we developed a new mission statement.

We also have a grant from ILMS around the diversity initiative for the museum, and this was all internally oriented. It included a number of enrichment sessions, bringing in leaders from other institutions to talk about issues around institutional and organizational culture. We actually got a doubleheader from Julie Johnson the last time she was here because we had her involved with the reinstallation discussion, but also had her involved in a discussion about institutional culture change. We had one panel on audi-

ence development initiatives. We did a number of other kinds of training sessions including bringing in a consultant who did diversity training with all of our staff, including guards and gardeners and frontline staff.

The third really interesting initiative that we’ve had in the last couple of years has been a grant from the Irvine Foundation Artistic Innovation Fund. The Irvine Foundation is the largest foundation in California and funds exclusively in California. This was an invitational program funding innovative change for arts organizations. It was really less about the outcome of the program or the project than it was about the structural changes that are demanded when there is a major new innovation for an organization. Barbara Henry has led that project with a team of educators and curators in the art department and our outcome is really around transforming the Art Gallery. We put these measures of success in the Irvine grant.

A lot of what we have learned in this Irvine project is definitely what you all have been speaking to, which is that it is more about the process and structural changes internally in the organization than it is about the final outcome in the galleries. We recognize that the new paradigm that we’re looking for in the Natural Science Gallery is going to require that kind of organizational roles and responsibilities process change, and we encourage you to share your thoughts about



Visitor Profile, Visitor Goals?

- What is your current profile of your visitor and where are you looking to make your shifts? If there’s a central area you’ve located, that might inform us to then say, this is what you should be looking at, versus some other construct that might inform how we shape our feedback and advice. • Julie Johnson

OMC Mission Statement

Our mission is to connect communities to the cultural and environmental heritage in California. Through collections, exhibitions, education programs and public dialog, we inspire people of all ages and backgrounds to think creatively and critically about the natural, artistic and social forces that characterize our state and influence its relationship to the world.

Key Measures of Success

- Increase audience from current annual of 150,000 to at least 250,000
- Increase number of family visitors by at least 33% and increase the number of multiracial visitors by 25%
- 90% rate their overall gallery experience as “good” or “excellent”

Key Concepts

- California identity
- Diverse audiences
- Informed and responsible citizenry
- Interdisciplinary learning
- Active engagement
- Community objectives

Design Guidelines

1. Thematic/interdisciplinary connections
2. Gathering places
3. Gallery orientation and introductory areas
4. Flexibility and change
5. Multiple languages and voices
6. Learning styles and interactivity

those. • Lori Fogarty

- Is there a timeline of the measurements of success? • Wendy Pollock
- We haven't put a specific date on it. I think we're thinking probably within two years after the opening of all the galleries. Our galleries are in phases, with Art and History opening in early 2010 and Natural Science in 2012, so I would say probably about 2013. • Lori Fogarty

Concepts and Guidelines

- There was some questions raised earlier about our institutional goals. The key concepts outlined here are from the interpretive philosophy that was developed by our education department in the early '90s and updated several times. A lot of what we are looking for in our interpretive approach throughout the museum in programs as well as exhibitions is reflected in these concepts, including stewardship and generating an informed and responsible citizenry.

I'm going to read the full statement regarding community objectives because I think it's important: "The Oakland Museum of California recognizes its responsibility to provide memorable educational experiences to support diverse communities in developing a greater understanding of one another and their role in shaping a multicultural society. The objectives of building community in-

cludes: to develop multicultural respect and understanding; to foster communication and understanding between communities; to understand California as a diverse and creative environment consisting of multiple voices and perspectives; and to develop a sense of ownership over the museum as a place for me, my family and my community."

The design guidelines are guidelines that we have committed to in all three galleries. The gallery orientation areas in each gallery are not just introductory areas but will also be welcoming places for visitors to come in and be oriented and will have some level of visitor amenities and context setting. • Lori Fogarty

- Those community objectives came out of work with our advisory councils and that language actually came from our Multicultural Council, which has representatives from those three councils. It reflects, from their perspective, what they feel is the potential of the museum for their communities, so we decided to incorporate that into our philosophy and goals. • Barbara Henry

Project Assumptions

- In terms of the Natural Science Gallery we have a number of assumptions and would like you to challenge those assumptions if you don't think they're correct [see sidebar]. Note that in relation to the first assumption,

the dioramas are not depicting California as it looks today, although there are places where you can find everything in the gallery out there somewhere. • Kathleen McLean

- Regarding that first assumption, I would question that it is before human impact. As far as I'm concerned, even at that point it was already a largely cultural landscape. At the time portrayed there, which is sort of "Columbusy," there was already ostensibly a cultural landscape. • Christopher Richard
- These five assumptions are what you are here to critique and talk about today and tomorrow. • Kathleen McLean

Goals and Objectives for the Natural Science Gallery

Visitor Objectives

- Has there been any articulation of what the objective of this hall is in terms of its redesign regarding what the visitor will take away? How will you measure success, other than the demographic and visitation parameters, in terms of understanding or action? Has there been any discussion or formulation of ideas on that? • Terry Gosliner
- Yes, and one of the things we're trying to figure out relates to the fact that we want to do it all. We want to encourage people to go outside, we want to encourage people to ex-

plore, we want to encourage them to understand sustainability and stewardship, we want them to understand basic scientific principles, we want them to understand that what they're seeing in the gallery happens in real life in California—all of that. I think that's part of my conundrum: With this breadth of audience that we have, what is realistic for us to deliver?

I think I agree with Scott that this is the moment that we have to compel people to act and understand stewardship and understand that these issues of climate change and habitat loss and the most critical issues in the environment are happening right here, right now in their neighborhood. As we approach this project in terms of responding directly to visitor questions, how far can we go on that continuum? So we're still working on those goals and outcomes. • Lori Fogarty

- Terry brought up the idea of a science toolkit, and that's a term we've been using as well, trying to come up with those important concepts that people would be able to use to further understand other scientific concepts. As Lori said, we also want to get people to go outside. I would like to see the museum as a central point where people would get motivated to go and explore what's outside the museum.

There's also the issue of citizen science or citizen action. Now we've shown people what a great place California is, what the

Assumptions

- The Oakland Museum's existing natural history dioramas are accurate, comprehensive, and could not be replicated today. They provide a unique opportunity for the public to get up close to and experience a wide range of California's biodiversity as it existed before major human impact.
- These dioramas need effective interpretive tools in order to make them compelling and relevant to a broad and diverse audience.
- The museum's commitment to deepening its engagement with its local and regional communities, combined with the need for developing new models of authentic partnership, provides the perfect opportunity to experiment with visitor and community co-design.
- The project will be based on rigorous visitor research and evaluation.
- What the Oakland Museum learns through this process will be of benefit to other museums with natural history dioramas, as well as to museums interested in the process of visitor co-design.

From: *Bringing the Dead Back to Life: A Community Inquiry and Co-Design Project [to Revitalize Natural History Exhibits and Programs]*, Kathleen McLean, draft 9/9/08

Adding to the Measures for Success

- What Doug said is not up there as a measure of success. In fact those three succinct statements are part of the measurement of success, I actually want to see them up there so I get the whole picture. • Julie Johnson

Natural Science Gallery Goals

- Scientific literacy
- Exploration outside of what they've seen in the gallery
- Stewardship and citizen action

- Wholistically, those three are actually part of what you'd see under measures of success if we're talking about this gallery. • Julie Johnson
- That title is correct. These are goals. These aren't measurables. We don't know how to measure how many times people have said, "Hey, this Mojave thing I saw in the museum made me want to go out there." We can't track what happens after people leave. • Douglas Long
- Yes you can, you just have to design in a way so that you can actually do that. That's why I want more clarity about what you're looking at as your measures of success because in part, you want to have the elements that allow you to say with some degree of certainty that you know people are becoming scientifically more literate or doing something after they leave here and so on. • Julie Johnson

threats are, and it's not all doom and gloom. There are a lot of horrible things that are happening, but there are also a lot of success stories, so it's not fatiguing people with the negative that's out there but showing that there are ways that individuals, groups and grass roots organizations can become interested and active and actually make a difference.

So it is having scientific information, getting people outside, and having a sense of stewardship or action or understanding that they are part of the solution. I think those are three of the most important things that I feel should be the outcomes of the gallery. • Douglas Long

About Audience-Based Goals

- I've always been really glad I don't work in a science museum and really happy that I work at the Lab of Ornithology, which is very mission-directed towards understanding certain scientific concepts and principles. We want to save birds. I've always welcomed that because it focuses me: What do people need to learn, know and do in order to save birds?

We haven't worried so much about audience because what we've tried to do is figure out what it is that needs to happen, and then what do the audiences who could make that happen need to do. Not everybody needs to do the same thing. Some people just need to have a little bit more

knowledge or understanding. Other people, local politicians, need to pass rules and regulations. So there's a whole strategy in getting where it is we need to go.

At the Lab of Ornithology, since NSF made us start putting audience first it has been awful. As we tried to acknowledge the fact that there are diverse audiences and all audiences need to be reached, we have tried to adapt our projects—with poor success because they end up just getting watered down. We can't reach those original goals. Cecilia and I actually did a talk about this, "Changing or Adapting Projects to Meet Audience Needs: How Far Do We Go?" And there is a tremendous amount of scientist push-back as we really try to help everybody understand all of these concepts.

So if I look at the key measurements of success here and I think about trying to increase or double the audience, is it trying to double the audience and having them all try to meet these specific goals of sustainability and stewardship, or is it doubling the audience and having them try to do what's relevant to them? It becomes very circular after a while. • Rick Bonney

Concepts and Ideas: Goals, Process, Gallery, and Visitor Questions

RESPONSIVENESS TO VISITOR QUESTIONS

Building the Gallery Based on Visitor Questions

- There's a tension between something like a standards-based approach to California as a hot spot versus local residents just wanting to know what's in Oakland and what they're missing. Somebody said something before about a wood rat's nest. Everybody can relate to that. Or termites. They want to know more about that stuff. If there were some kind of programming—"Now go home and find a wood rat nest and then come back and tell us more about wood rat nests"—the exhibit would then grow based on what they're bringing back to it, which would be pretty cool. • Rick Bonney
- That is one of my fundamental questions. If we start with visitor questions and that really forms the basis of the gallery and the dioramas that would happen, we know from our research and other research that has been done that the questions can be pretty fundamental. Is it alive or is it dead? What does it eat? Who's going to win in this fight?

But then we want to get to this attitude and behavioral modification around sustainability. How much is really feasible? We also know that we have this wide range of audience. That has really been the dilemma and why Kathy McLean started to attach some percentages to our expectation of visitor outcomes. Some people are getting to a certain level of inquiry, question generation and, hopefully, inspiration to explore the outdoors, but some other people might get to a different level. How can we do that whole spread? • Lori Fogarty

ADDRESSING PROJECT QUESTIONS

- If you look at the audience questions, content questions and format questions, they really merge a lot. One question is, if we say sustainability and climate change and understanding what needs to be done as interventions (and what needs to be done as interventions soon) is the primary goal of the gallery, is that even a good fit to the dioramas?
- Then there is the piece about the balance that we strike between conveying basic, general principles to a wide audience and then

Potential Goal: Links to and Advocacy for Sustainability Curriculum Standards

- I was wondering if there is any kind of school curriculum on sustainability and California being a hot spot. If there isn't, the museum should take an active role in getting that into school curriculum. Museums have done that. • Darcie Fohrman
- It is not currently integrated into the current science standards. They're several years old now and have a strong ecological component but not from the perspective of sustainability. That's one of the things that clearly needs to be changed and that process is just starting to get under way. • Terry Gosliner
- You guys could partner and be a strong force. The kids that you want to come here are the audience of the future. If you've got that many school groups coming and they're forced to come in fifth grade for science, that's what's going to need to happen for the future. You can gear your exhibits and your programs to that group in terms of action and participation. • Darcie Fohrman

Content Questions

- The scientists we've spoken with maintain that issues of environmental sustainability are the most important in the natural sciences today. How can we (and should we) focus on issues of sustainability in a natural science gallery that is comprised of dioramas and habitat groups depicting plant and animal biomes in different regions of California?
- What is the balance we should strike between conveying basic natural science principles of ecology and conveying environmental impact stories and encouraging stewardship and conservation?

From: *Bringing the Dead Back to Life: A Community Inquiry and Co-Design Project [to Revitalize Natural History Exhibits and Programs]*, Kathleen McLean, draft 9/9/08

Format Questions

- We want to create a project that is some combination of physical, virtual, and programmatic space. What has been done before along these lines and how can we build upon the existing work in the field?
- What would be the value to the field of exploring the concept of animating traditional dioramas? Beyond the use of typical technologies—videos, computer kiosks, etc.—how can we use new media technologies to enliven our static displays?

getting to a point where we're actually hoping that this gallery will incite behavioral change in people who come through the doors. Is that realistic to think of at all?

There is also the first audience question, where we have attached various percentages to our expectations of audience outcomes. Is that a good way to think about it? We don't have the answer and that's a huge question for us. How do we focus something that's very broad, and is it even a match for what's out there in the gallery right now?

- Kathleen McLean

Audience Questions

- We assume that environmental learning exists along a continuum, beginning with noticing, then appreciating, then engaging in inquiry, and leading to behavioral change and active conservation. Where should we focus our conceptual and design energy and what can we expect as visitor outcomes? Do the following goals make sense?
 - 70% of visitors will notice things about the natural world they never have before
 - 40% of visitors will appreciate the uniqueness/beauty of those things they notice
 - 20% of visitors will engage in active and prolonged inquiry with aspects of nature
 - 5% of visitors will change their behavior as a result of what they have learned
- What kind of processes might we actually use to generate visitor questions and input?

SUSTAINABILITY AND STEWARDSHIP

A Mismatch with the Gallery

- I would postulate that you can't do stewardship and sustainability with anything that's out there in the gallery right now. Right now there is nothing that has any relevance to a casual visitor. There are probably things that

The Right Questions?

- The question that I think Kathy asked was, do the dioramas help us do this thing [sustainability] and Rick's response was no, they don't. I'm still trying to understand what the success piece looks like because maybe we're asking the wrong questions. • Julie Johnson

- How do we address the range of audience understanding and questions from our highly diverse urban school children to our deeply conservation-minded lifelong learners?
- What are the potential roles for community partners in this project? Should we be tapping into them for involvement of their members? How can we collaborate with them on content production? How can we (and should we) showcase the work of local and community and regional environmental groups? What kinds of community partners would make most sense for this kind of project?
- How can we engage the broader field in our exploration of these issues, and how can we translate what we learn for potential application elsewhere? What museums and other informal partners might we include? What are some creative dissemination strategies to reach organizations outside of our sphere of project influence?



could be used, pieces that could be used, but there isn't anything at all right now that is going to make people say, "I care about this. I care about California. I care about Oakland." It's very abstract. • Rick Bonney

- You say that it's not there. Do you feel that it can be there with the kinds of interventions we've been talking about, or reinterpretations or reconfiguration? • Louise Pubols
- If stewardship is as important as I think I'm hearing that it is (and personally, great, I think that's a great thing for you to do) then it has to be made relevant for the visitors. You've already told us that most of the visitors are from Oakland and the East Bay. I'm not seeing anything there that is really drawing me in to understanding what I need to be a steward of. As a couple of other people have said very clearly, you go through the gallery and it looks like everything is fine. • Rick Bonney

Being Explicit: Why We Care About This

- The last time I was here, one of the things you guys talked about was the extent to which people don't understand what's in the dioramas. I'm thinking about what Rick said and how museums rarely articulate why they care about what they have in their collection. Why are we showing you this stuff? To some extent, it seems to me that, following

the Lab view, one of the things the museum can definitely do is say, "Here's what we think is important." I wonder if there's an extent to which X percent of visitors understand that there are people who work at the museum who care about this stuff, and whether that's so low-level in your perspective that it's not even on the chart. I wonder in terms of awakening things in visitors, is it useful to have an aspect so that they get it that there are other people who care. • Nina Simon

Cultural Connections

Environmental Excess and Exploitation

- For the Natural Science Gallery one way of helping insure that people get the message of what their position is *vis a vis* what they're looking at is being able to identify with something that is in the cultural environment. Christopher Richard pointed out the ambiguity in looking at the dioramas, which are really based on an environment that has been culturally adapted. We can't forget the native peoples here. That has to be made more explicit, so people can really see themselves living within the natural sciences landscape.

California has many unfortunate examples of environmental excess going way back: the Gold Rush, over-exploitation of the land, the fisheries boom and crash, the sea otter business. There are many, many examples where we can show what happens when humans

An Added Guideline: Transparency

- What Nina said about being articulate about why we care about what's in the collection relates to the issue of transparency. We should add that as a design guideline. That is something we've dealt with in the other galleries. For example, in the art gallery: Who picks this stuff, who are these artists, why is this in the museum? The same with history. We're doing a kind of history detectives activity about why the stuff is here, why it is important to save, how did it get in here? Questions we know visitors have about dioramas include: Is it dead? Is it alive? Did you kill it? How did it get here? • Lori Fogarty

Design Guideline

7. Transparency: Who did this and why?

Integrating Art, Science and History

- The other thing that is so exciting about the focus of this institution is that it does have the history and the art and the science all together. The integration of those, to whatever extent possible, is a great opportunity as well. • Terry Gosliner



Terry Gosliner in the gallery

and their agents of over-exploitation go awry and what results. I think some place in this institution we have to have that message, and if it's not in history then it needs to be in natural science. • P. Christiaan Klieger

Putting People in the Landscape

- I want to follow up on that same line of thinking. Using words like "stewardship" represents a major change in the way that people think about the environment from earlier notions of conservation, which I think the current gallery represents more—the relationship between people and the environment is, we set it aside and don't touch it. There aren't any people in it. I think the notion of stewardship really brings to the fore a much more active relationship between people and all of the environment. There's not that kind of straight line. And I think that does mean the gallery has to look different and you have to see people in the gallery from now on because my interpretation was not, that's a cultural landscape before Europeans arrived. My interpretation is, that's the nature out there right now that people aren't in. That's what I see when I walk around there. So if the message really is stewardship, I think we have to see more people. • Louise Pubols
- Certainly the present condition is representative of a detached-from-human-interaction, relatively pristine environment that functions on its own. This is very akin to what we

were dealing with at the Academy with transforming the African dioramas, which represented pristine savannah habitats in the 1930s. To bring that into contemporary focus you have to involve humans. • Terry Gosliner

Ten Thousand Years of Humans in California

- I don't identify in there. You have to be able to identify with nature. It's not just about learning the interrelationship of organisms and the environment, which you don't really learn unless you really study the dioramas or try to read the labels on plexiglass, which are really hard to see. You have to see yourself in the natural world. I think the starting point for that is something others talked about. Ten thousand years of humans in California is powerful and how sustainably they lived and how we could maybe go back to that in trying to get to a positive place with climate change. Somehow there's some kind of cycle of relationship with the land that could be used. • Darcie Fohrman

Screaming Opportunities

Existing Assets, Links to Natural Habitats

- When I look at your hall the opportunities just scream at me. You have the raw materials. You have things that are real places. Virtually every one of those habitats that are depicted, I could tell you where they are in California, and you can look at that today versus the way it was in its pristine condi-



tion. You can look at the Peregrine Falcons and they're not just these wonderful birds of prey with chicks underneath them, they're really emblematic of the environmental changes that we have gone through and an area in which we have realized some successes.

There is the fact that you have real places with real organisms there, and we have the privilege of being in the Bay Area where you can get to natural habitats very readily. You can walk to Lake Merritt from here and see that there are Canada Geese all over that shoreline that weren't here ten years ago. There are real examples where you can talk about changes in biodiversity in people's back yards in the immediate proximity of this building. Those are the kinds of things that I think are the screaming opportunities, and that's great news, that you have the raw materials. • Terry Gosliner

Making the Local Connection

Addressing Indifference by Adding a Little Garbage

- At the New Jersey State Aquarium, which is now under a different operator, we started out with the notion that we were going to showcase New Jersey and the aquatic environment in and around New Jersey. If anybody knows the story of the institution, that did not bode well because in fact we didn't really talk to potential audiences. That's not what they wanted. We wanted it

because we thought that it was important. They wanted to see animals from other places and how they compared to other places in the world. We kept the core pieces, but then we started to add other pieces and talked about similarities and differences. If you live here, do you have a relative or friends there? I think that started to make a difference.

But then there also were expectations from people about what they expect to see at an aquarium. Some of them we could meet and others we couldn't. Sharks in spades, fine. But you always have the desire for marine mammals. If you're an institution that is not going to do whales and dolphins, you've already crushed the hearts of many of your potential visitors and are forever trying to make up for that.

One of the exhibits we did was about the Delaware River, a major body of water that has some amazing potential in terms of the flora and the fauna. We were located on the waterfront and felt that people needed to know about the river on our doorstep. We had this exhibit and people would go right by and never look at it.

One of our aquatic biologists went diving in the river, found a whole bunch of junk that is in the river, and put it in the exhibit. People stopped because it was like, wow, really, there's a tire in the river right outside? We have impacted it? We have done something to the river? It changed how people looked at

Stewardship and/or Dioramas

- The other thing I would throw out is, if you didn't have the dioramas and stewardship was your main focus, what would you do? Are you holding yourself to a particular thing because it's really about the dioramas, or is it really about stewardship? • Julie Johnson
- That's the question, and that's the schizophrenic aspect of this. • Kathleen McLean





Scott Sampson in gallery

Immersion in Oakland Nature

- There's also this thing about what is nature, and right outside this window is nature. Oakland is nature. It isn't just Yosemite or Yellowstone, nature is everywhere. You could have an immersive thing in there about Oakland. And then, why would you want to save Oakland? What is it about Oakland and places like that? I think there are ways to connect the outside world and the inside world so that these become your conversation pieces.

• Scott Sampson

the river and what they talked about when they were having lunch on the deck: "Remember the tire in that exhibit? There's junk in there and we've got to stop throwing stuff into the river!"

I do think that there's this issue in terms of the collections/dioramas that you have. How do you bring it back into connection with what is there today and how do people see themselves in it? • Julie Johnson

Mapping and Saving the Hood

- I've been thinking about urban nature and urban wildlife from the last discussion that we had. There was the idea of having a diorama that was an urban diorama and I was very much in favor of that idea. I saw a family of baby raccoons just three blocks from here on Tuesday night last week. There's wildlife all around us all the time. What if we had something like the Lab of Ornithology, where we were having visitors coming in and recording wildlife sightings? Could we map raccoons in Oakland, and might that be pretty interesting? I think the things we can learn and connect with around how wildlife has had to adapt to live in an urban world is very much alive for people in the city.

I also work with some interns in the museum and will have a new set coming on, so I've been thinking about high school students and the question, what could possibly be interesting to you about natural science and the natural world? I take a very back door ap-

proach. I start with what they care about and throw out ideas here and there and see if they stick and go with that. If anybody's interested, they made a short film called *The Hood Scientists* and it's on YouTube. I would love feedback personally.

When we were talking about this idea of hood sciences, they said to me at one point, "Nobody would want to save the hood unless you're from the hood," direct quote. I think it's very interesting as we talk about this here in this room and this idea that you can't save it if you don't love it. I don't agree with that statement that nobody would want to save it unless you're from the hood because I'm not from the hood and I have that passion myself. But it was very curious that they said that and I think stewardship is too lofty a goal, whether it be mine personally. I'm far more interested in any connection, anything that helps you see yourself more. That may in fact lead to stewardship, and sure I'd love it, but I'm also really interested in what we can offer people in Oakland that helps them navigate their lives. • Susanne Pegas

Adding Value to the Already Known

- I think, going along with what Susanne was saying, you have to find ways to unlock something else. I was also thinking about what Julie said and this tension if you show people what's right outside the front door but don't give them that additional, "and here's what we dredged up." It's just seeing



what you already know. I think about growing up in LA. My relationship with the LA River was that when it rained, we would walk along it to see the furniture that was in it. That's really what the LA River was for me and it was sort of a fun experience, but I never thought about it in a nature way and I could really imagine a value-added. I'm not interested in seeing that reflected. Maybe I'd want to tell my story, but I would want to know more about why is the LA River this place that is just inches and then pianos. So I think it's not just acknowledging where people are but going the next step also.

• Nina Simon

Public Policy and Advocacy

Public Policy Involvement

- We just finished a study with the market research group called Reach Advisors, looking at the core audiences of science museums. These are people on their e-mail lists, so they presumably have some connection. One of the things we wanted to get at was what do people who are generally well disposed towards science museums think about the institutions' involvement with public policy issues that have a science dimension to them? We had a list of issues and then an open-ended possibility. Eighty percent felt that museums should be doing something about climate change and environmental issues, and the write-ins were heavily about environmental issues and energy policy. I

keep wondering what you know about the local community and what they care about.

• Wendy Pollock

Local Sustainability and Advocacy

- I have a comment and a question. First of all, I think this museum seems ideally situated to address some of these concepts. Where the Cal Academy is globally focused in some respects and looks at ecosystems around the globe, this museum focuses on California. As we've mentioned, California is a hot spot. It may be the state in the country that is most amenable to changing towards sustainability at this point in time. There is both the political will and an awareness in the population, and this is the Museum of California. Not only does it deal with natural history, it deals with culture, it deals with history, which are all aspects of sustainability.

More than that, there is really no such thing as global sustainability, there is only sustainability in places, in individual places. You can focus on the state of California, you can look at all the key ecosystems around the state, but you can also focus on sustainability in Oakland or the East Bay. You've got communities like Berkeley that are close by that are very tied into all of this and could be brought into a project that would be focused on making this particular area sustainable.

So you create an awareness around one of the ecosystems around here. What is the

Mission Clarity and Goal Priorities

- It has been interesting to me in this conversation. You have to prioritize your measures for success. I think that's what Rick was trying to address in terms of knowing what you're about. If sustainability is it, you can't leave global warming or climate change out of that and it hasn't really been on the table.

It made me think about the Monterey Bay Aquarium some years ago, changing their mission from education to conservation. Now they're going to save the oceans. And they don't have a paragraph mission, they have a sentence and it's short. That's a very hard thing to do, but if you can do that then you've got your priority and you've got all of these diverse visitors. A goal is to have your visitors feel like they are your partners in that mission. Then it doesn't matter if they're green or yellow or speak whatever language. This is a global world, we all have to do this. This is what we can do as the Oakland Museum. It's a little bit, we can do it, and you can help us do it. I think before you go much further you should prioritize your goals. • Darcie Fohrman



Rick Bonney and Cecilia Garibay inspecting bird eggs

bioregion that we are all part of? The Shasta bioregion or whatever. Then you actually get people in an urban environment, the residents of Oakland, to think about what it would be like to have the city of Oakland be sustainable and how would we get there. That's my comment. I think this museum is ideally situated to create an identity around this that very few museums in the country have the possibility for, and I think that's wonderful.

The question, though, is a tough one, and I've personally had experience dealing with this issue where, when push comes to shove, either the director or the board isn't really willing to deal with advocacy. It's okay to say, yeah, sustainability is a good thing and let's go and teach people how the environment works, but we're not going to advocate anything because we don't do that. One of the key things that would be important for all of us to understand is where the leadership of this institution sits on the issue of being advocates for something. At some level, if you're going to take sustainability and stewardship as your goal, then you are advocating that. So the question is, how far are you willing to go with that? • Scott Sampson

- I think we're very willing to take a strong position. I don't think this museum has shied away from much historically, and I think stewardship is absolutely embedded in our

interpretive philosophy. And if you can't do it in Barbara Lee's district, where else can you do it? We would be remiss if we didn't take a strong advocacy role. • Lori Fogarty

- I agree. • Lance Gyorfi

Advocacy Separate from Exhibits

- The Science Museum of Minnesota has decided to advocate for eighth-grade algebra. Now, we have mathematics exhibits in our galleries, but we're not mounting an algebra exhibit. However, in the role as convener and a place to raise issues of importance in education, we are supporting eighth-grade algebra throughout Minnesota. But we're not doing it through our exhibits. We're doing it in other ways by saying, "Hey, we'll be the place where the Department of Education can hold it's monthly meeting on X. And by the way, can I get a chance to talk with you while you're here about why eighth-grade algebra is really important?"

We're doing it through collaboration with other entities. We don't say to visitors in the galleries, you know, we think 8th grade algebra is really important. It's a different level of work. I think your notion about advocacy and the stand that you want to take may take some different forms other than just in the exhibits. • Julie Johnson

Love and Passion

Immersive Environments and Field Trips

- Several people, Stephen Jay Gould among them, have said you're never going to save anything that you don't love. If stewardship is about getting passion for a place, you need to think about how you generate passion. In Edward O. Wilson's book, *Biophilia*, he makes this really interesting thought experiment. He says, imagine if you could create a pristine environment that was absolutely beautiful, with a canyon and a lake, but it was all fake, all plastic, the animals and everything. What would that be? Would that strike a chord emotionally or not? His argument, and I would tend to agree, was that in some ways it would be a nightmare. It's not anything that would make you feel close to that place at all. It would almost be odd and eerie because there's nothing living there, even though it's spectacularly beautiful. Dioramas are kind of like that. It's very unlikely that they're going to inspire passion and stewardship in the way that we would want. But that doesn't mean that they couldn't be useful tools.

If you could reorganize that area, I would argue for more immersive types of environments, even if you cut down the number that you dealt with and had maybe four or five examples of biomes in California. But you could make them immersive and then organize trips so people could go and see those places, whether it's a redwood forest or

coastal habitat or whatever, and not exclude people.

You can take groups of people through, whether they're guided members of the public or school groups and say, "Here's the Sierra Nevada and here's how the ecosystem works and it's fantastic, and here's some of the impacts going on. And oh, by the way, next month we're leading a tour of the Sierra Nevada if you want to see it in person." You'd be able to then get people to really understand what these things are.

So to my mind the dioramas are useful for conveying knowledge, but certainly not for generating the passion. That has to happen another way. • Scott Sampson

REACTIONS TO THE GALLERY

Decontextualized, Disorienting

- The word I came up with was "decontextualized." I was disoriented, so as I went through it was very difficult for me to understand exactly where I was. I started thinking to myself, gee, I wonder if I were from California if this would be a very different experience, but that's kind of how it felt. I thought, surely there must be more here, so I kept trying to grasp onto something but had a very difficult time with it. I also had the sense of being overwhelmed and could completely see why other visitors groups would sort of go through because

Yearning for the Stories

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- Rick and I had an interesting conversation. I said, "You know, I keep wanting to see stories here. I keep thinking, if there's a story, what's the story that this particular diorama tells?" We kind of tried that a couple of times. Rick came across these Red-winged Blackbirds and he told me this whole little story of one being dominant and so forth. It was a fun game to play, but it encapsulated for me something that could be a real tool, which is to think about what story you are really telling and then how you allow visitors to tell their stories. Potentially, that story could be many things. It could be about something that reminds them of something in their back yard, or it could be a story about being in that particular place and having an experience there.

• Cecilia Garibay

- I couldn't read the lettering on the plexiglass so I made up my own stories. What are my stories and how do I find out what other people's stories are? • Julie Johnson



What is the story on this Red-winged Blackbird?



The Topographical Map of California

- I have a long history with this museum, just as a visitor. I did do a project here, Jungle Hill, working with the community, which was very exciting. So I have a lot of baggage with that gallery and I was trying to come in there fresh and I just can't. But one of my memories of liking it better in the earlier days relates to that topo map. In the beginning there were projections that, in my memory, did orient me.
 - Darcie Fohrman
- The missing piece of the projection is strictly the failure of an old interactive technology. There used to be a show that was projected on

there was almost too much. I wondered if you could strip it to just some core pieces that you thought were really important and emblematic for a reason and tell stories around those rather than cover everything.

• Cecilia Garibay

Orientation in the Gallery

- Have you thought about the KQED Quest idea of recording sightings and mapping it onto the areas? That was one of my reactions to the gallery, I don't know where I am. I know there are maps and words and all that, but I was really pretty disoriented. It seems that could potentially be one approach, since KQED is already recording that. • Wendy Pollock

that big map in the front that gave you the geographic orientation to the gallery. It projected images of the gallery plan over the state and came at it a couple of different ways. It was run with five Ektachrome projectors and slides and the technology just was not sustainable. What you're seeing there is an artifact of being unable to migrate the technology.

• Christopher Richard

- It was primitive, but it really did make a difference. • Darcie Fohrman

- "Decontextualized" is a good word. I felt the same going through it. Any revamp would need some kind of orientation and I'm a fan of orientation videos. If you're trying to get people to think in new and interesting ways you have to orient them to think that way and give them things to look for as they're having the experience. I felt there was very little to orient me geographically. If I was really looking for it I could find the little California map where things were highlighted, but I had to work at it and a lot of people just aren't going to work at it.

• Scott Sampson

- I was trying to find the story depicted in the "Current Gallery of California Ecology" hand-out you sent to us prior to this meeting to see how these themes presented themselves in the gallery. I don't think as a visitor people will get that. Having an orientation and map and some way of figuring out where you are is important, as well as how the separate things fit together. • Julie Johnson

What's Not There

Scales

- In terms of scales there was really nothing from micro to macro or how to access different scales. • Scott Sampson

Evolution and Geologic Context

- The gallery could be a creationist gallery in the sense that everything is just dropped



there as if created by god, everything is just beautifully laid out as is, and there's no sense of how it came to be. I mean, there are four billion years of evolution that have created the ecosystems that are sitting in that gallery, but there's no sense of history. There's no sense of geologic context, of the geologic history and the plate tectonics, of everything that led up to California being where it is on the margin of a large continent with an impact from an ocean. You don't get any sense of how life and environment have interacted over time. Really, these things are just sitting out there in space and I couldn't really get a sense of how to interpret them.

Now, do I think the elements in there could be recycled into something else that would be more important? Yes, I think so. • Scott Sampson

Something that Makes You Stop and Say, "Oh!"

- There was nothing to make me stop. I was thinking about the fact that visitors spent thirteen minutes in a 25,000-square-foot exhibit, and I think it's partly because there was nothing that made me stop and go, "Oh!" I was looking for the rat's nest and the bird thing and I walked right by them. There was nothing that actually made me stop, whether it be a physical barricade that I had to stop and walk around, so I was like, okay, I'll just keep walking. • Julie Johnson

Tactile Experiences

- Then there is the issue of touching. There were some places where it was clear you could actually touch something, like the woodpecker tree. Once I got there I thought, well can I actually reach into those other dioramas and touch them? Who's going to stop me? Granted, none of you would stop me today, but I don't know if your visitors are allowed to get into the redwood forest or if they do. But I'm all the way there [at the woodpecker tree] before I can actually touch something that's real. It wasn't plastic, I knew it was wood, I saw the shavings.

The texture piece was really important. Then I went back and we had this whole conversation, "Are these redwoods really real? Let's touch 'em and break stuff off and let's see."

[A staff member says, "By the way, you're not supposed to touch the redwoods."]

I'm sure you're not. However, if I lived in urban Oakland, as accessible and easy as it is to get to nature, some people never leave their block. And so if my only experience is going to be here, I want to walk through the redwoods. I want to know what it feels like.

Coming back to this idea of an immersive experience, where are the things that are tactile that let me experience the things that are in the vitrines, and how do you balance the two of those? It's not only for people who are visually impaired, it's for

Live Animals

- What is the potential for live animals in your gallery (live animals being the furry small things, not the people walking through the gallery)? I understand there's a hidden aquarium section back there. What is the ability to bring live animals into that space as juxtaposition to the stillness that's there and a way for people to make some different kind of connection? I do think it's hard for people to make connections with things that are not moving. If you want emotion and passion, you may need to think of some other ways of doing that. I'm not suggesting that it takes over, but there might be some good plant or animal species, or both, that would really add to the feel. That relates back to Scott's question regarding the dreams for the area and therefore, what would make sense? • Julie Johnson

Digging Deep Instead of Going Overly Wide

- In your write-up of what you're doing, it said that it teaches the principles of ecology. All of the things that were mentioned—adaptation, biodiversity, plant and animal relationships, nutrient cycles, stories of survival, the interdependence of living organisms—are things that you say you want to do in there or are doing in there. That's impossible to do, let alone the fact that it's not happening the way it is. I think it's just too much.

There can be digging-deeper things where you get into that, or you can use humor and relate those adaptations to human behavior and something that I can relate to. There could be fun things that you could do with that, and then people might want to dig deeper and really learn these fundamentals and principles of science. I would like to be drawn in to how I could relate to that. Mobile phones could be a way to offer access to information without having to read a lot of text. • Darcie Fohrman

people who want to feel the texture of a tree. I didn't get the sense there were a lot of places to do that, though I did do it today because no one was going to stop me. • Julie Johnson

Live Research

- Where is the live research that people are actually doing reflected in this natural history environment? I didn't know it was based in the 1400s, I actually did think it was representing today. Maybe that's in the video introduction and people get that sense, but my assumption was that it was today or within the last two or three decades, not hundreds of years ago. So if people are actually doing research here at the Oakland Museum about sustainability, how is that talked about with the exhibition? • Julie Johnson

Space Configuration

From Giant Room to Immersive Spaces

- One of the other aspects for me is that you're supposed to be depicting all of these different environments, but it's all in one giant room. So you walk into this large room and you don't know when you've left one and entered another one. For me, I can't orient myself in any kind of meaningful way then.

Once again I would argue for more dividers, more immersive kinds of spaces, better use of lighting, better use of sound effects that

are directed to those types of specific spaces to create more of an immersive experience. And yes it's fake and we all know it's fake, but that doesn't mean it can't be inspiring in some respects. • Scott Sampson

Uneasy Sameness

- I felt as if I was in a glass case. I'm trying to capture the feeling I had. It was a very uneasy feeling being in that space. There was just a sort of sameness and this spread-out quality and the sense of needing enclosures and variety and most of all, some sense of connection with the world outside of there, whether through live feeds, people bringing in sightings they can report from right around there, or human beings to interact with. I didn't see a place where I could expect that to be happening there. I just had this feeling, where am I, and what is the relationship with anything living? • Wendy Pollock

Connections or Lack Thereof Between Exhibits

The Aquatic-Terrestrial Divide

- The first thing I noticed was the great divide between the aquatic world and the terrestrial world, literally and figuratively. When I got to the end of the terrestrial world there was this great picture of this canyon in Anza-Barrego State Park that shows the desert habitat, and then when you get to the end of



the aquatic one there's exactly the same place, but there was no connection. One focused on the seeps and the stream that goes through that valley and the other focused on the things that were ten feet away from that, so there was this huge separation between the aquatic world and the terrestrial world when they are intimately interconnected. • Terry Gosliner

- Part of the challenge with dioramas is that you have all of these separate vitrines and yet they don't exist that way in nature. They actually exist connected, so the experience in the gallery was disconcerting. • Julie Johnson

Lighting

- Is there something different about the lighting? It seems to me it may have been more dramatic in the past. • Darcie Fohrman
- The lighting is pretty much the same, although a number of the cases had the mansard tops with built-in fluorescent tubes and we replaced those with track lighting. • Christopher Richard
- With those kinds of dioramas I think the track lighting is just devastating because they need to be internally lit. You can't have that glass and have lights reflecting off it and get any sense of intimacy. • Darcie Fohrman

- I didn't understand why I had the reaction I did until listening to Darcie. When got to the other end of the gallery where there's an art and history exhibit, I wanted to go in there. I didn't want to go into the Natural Science Gallery. It was too glary for me. I felt like I was on the Starship Enterprise and had just landed somewhere and was seeing what life looked like a million years ago. When I got to the end, the lighting was nice and my headache went down and I looked at all the pictures, and then I had to go through the Natural Science Gallery again to get back. • Rick Bonney

Making Sense of Models

- With exhibitions and dioramas, there's an underlying assumption that people use models and understand how models are used. I'm not sure those assumptions we hold about models are true, or at least true for a majority of people. So I think to say that I look at this diorama with the Red-winged Blackbirds and can immediately say, oh yes, this occurs in X kind of place, or have a fuller concept about, is a flawed assumption.

It might be interesting for you to explore how people use models in your community and whether or not you need to reconfigure some of those to really make them accessible in terms of models and what they mean to people and how people use them.

- Julie Johnson

Furniture, Carpeting

- I also have a real problem with the furniture that the dioramas are in. I love most of the dioramas and agree with Scott about groupings and knowing where you are. I think you should keep them and I think you should change the furniture, at least the bases. They call too much attention to themselves. It looks like they're from some exotic wood that wouldn't be sustainable. • Darcie Fohrman
- It's California walnut. We wouldn't want to throw it out. • OMC staff member
- If you have to keep it you could at least change the lighting in the cases so it doesn't call as much attention to the bases. And the carpet has got to go. I think you could do something with the floor that would be interpretive that would help you know where you are. • Darcie Fohrman

Interpretive Wrappers Around Dioramas

- Another idea is interpretive wrappers. It was interesting to hear Darcie talk about the furniture. I was thinking there are some very strong story statements you could make with wrappers around these dioramas, some positive and some negative. I was imagining, for example, dioramas that are in shipping boxes because they're going to extinction and some of the heavy metaphoric ideas that you can get away with. Is it hidden and you have to get to the diorama? What is the way in and how could furniture help people with that as opposed to being something distracting. Though I think these things could be distracting as well.
 - Nina Simon

- I was here a couple of weeks ago for one of these meetings and that was my first time in the gallery. I spent a lot of time thinking about what Julie brought up: How do you query a diorama? For me, as somebody without a lot of experience with that, I had a very hard time going from some of the 2-D information to the 3-D diorama.
 - Nina Simon

GALLERY AND EXHIBIT IDEAS

Links and Meaning Making

Interpretation of Current Events

- The other thing that kept going on in the back of my head was, what's going on in these places right now? Where is the contemporary interpretation of what's happening in our back yards, what's happening in the deserts of California? When something appears in a newspaper or on TV or the radio, this should be a place where people can come. How can this institution help people make sense of that in a more meaningful way, not just physically but via the Web and other tools?
 - Terry Gosliner

Surprise, Fun, Social Interaction, Immediacy, Dramatic Lighting, Performance, Object Theater

- I tried to think about what would enliven the space since I've had the advantage of being here more than some of you. I think you

need some elements of surprise, so maybe put one thing in the diorama that doesn't belong there. Do something fun. Have a treasure hunt that gets you to notice things in the diorama.

Think of ice breakers as conversation starters. One thing that came to mind was a PBS or Discovery show about bringing tigers to Africa. It seems like such a stupid idea and somebody is trying to do this and it made you talk about it. Why would they do that? They don't belong there. It's the idea of trying things to get strangers to talk to each other and introducing social networking ideas. Usually people talk to each other when something is broken and they can't figure out how to use it, or they want to know what it's made out of. It doesn't have to be contrived.

In that question show that we did at Stanford, we raised a lot of questions and it was similar in that visitors were asked about what their questions were about art and museum practice. We built a whole exhibition about that and the gallery was lively and people were talking. It wasn't the hushed museum. I think some of the reason was because they couldn't figure out what was going on because we took such a wacky approach. In a way that's bad, but in another way you're stirring things up a bit.

There is also immediacy, live streaming videos from these locations, or at least giving



the illusion that they're seeing that. Talk to scientists, find out what the scientists are thinking about these places and what they're like now.

Then there is drama. Use lighting and projections to enhance the experience. I love what they did at the Cal Academy, projecting elephants onto the savannah so you could see little elephants going by. That's just a subtle little touch, but there's so much you can do now with projection and lighting to really help the experience.

I also think having live performances in there would really be great if you could create a theater space. Lindsay mentioned the idea of creating an object theater. You might create a theater where you could actually sit down and do it on your own or have some live action. • Darcie Fohrman

Sound

- I wanted to mention the sound environment, having worked on this exhibition, *Wild Music*. I know that your sound collection is such an asset and there are recordings in there, but you could do so much more with that, even in terms of programming. People don't have to be limited to contributing visual materials, they can contribute sound recordings. There was a youth project that preceded the *Wild Music* exhibition at the Science Museum of Minnesota, which involved local kids going

out with a musician and recording the sound of water around the Twin Cities and then he composed that with them. There's so much that could be done with that. There was a need for some sense other than the sense of sight. • Wendy Pollock

- You could have a symphony of sounds in there that the visitors generate and they could go to this spot and they would know what sounds they were creating, even though you wouldn't know until you went over there. • Darcie Fohrman

Identifying the Verbs for Social Objects and Social Interaction

- During this visit to the gallery I felt a little more free and was talking to people in the gallery and realized how easy it would be to blow by and do the kind of visitor experience that Mary Jo was reflecting in the tracking in terms of people not spending a lot of time deep in. As a nonspiritual pilgrim museum person, I had the unique experience of trying to do that the last time I was here. This time when I reverted more to my standard, I found I was just breezing by.

Then I started thinking about the social element of the dioramas. One of the things I've been thinking about recently is social objects. There are some interesting people talking about what makes an object some-

Nature Exchange Corner

- At the Science Museum of Minnesota they have a place in the gallery they call Collectors Corner, where people can bring things they find. You could have something similar with a nature exchange. That's another way to have a relationship with the nearby community. • Wendy Pollock



Wendy Pollock listening in the Bat exhibit

Connecting Visitors to Nature at a Variety of Levels

- I was looking at these content questions and hearing what you are saying, especially in terms of making the message very simple: Save the birds, or save the ocean. I was also thinking about what is our distilled version of our mission statement, which is about connecting visitors to the natural and cultural environment of California. Maybe we're making it too hard by saying we have to do scientific literacy and exploring the outdoors and citizen science. I put down, "partner with our visitors in connecting to the natural environment of California."

You're meeting those partnerships at a lot of different levels. For some people it's partnering in a way to just understand simple science concepts. For some it's really making that connection to the outdoors at close-by places like Lake Merritt. For others it may be to go to that level of stewardship. It's like what Susanne was saying. If you're getting them to connect with something in the natural environment by meeting them at their entry point, that could be, by definition, a lot of different levels.

• Lori Fogarty

thing that elicits or mediates a social interaction. One of the things people talk about around that is, what is the verb that people do with the social object and how does it relate to other people? So it's not just the fact that I look at the diorama, but am I sharing with somebody else? Am I pointing something out? Are we having a discussion about our story around it?

I think it would be interesting to imagine, what are the verbs that relate to the social engagement you want to see around these dioramas? • Nina Simon

Moving Outdoors

A Treehouse and Other Outside, Off-site Installations

- It would be so great to have extensions of this exhibit into the community. I was thinking about a treehouse. I am a treehouse fanatic. There is the idea that a museum is a place to have a time apart and focus and see new things. How neat would it be if the museum, as a gift to Oakland, had a treehouse nearby and you could sit and look at some of the things that are really in nature? At first I was thinking it would be great to have these kinds of interpretive experiences in the gallery, but where it would really be great is not in the museum but somewhere else. There is a lot of good stuff that you can put into the museum, but I think the challenge is, what is some good stuff that you can put outside other than some trail maps and encouraging

people and offering programmatic experiences outside? Are there opportunities to really have exhibits outside? • Nina Simon

Linking to Lake Merritt, Gathering Citizen Science Data

- Putting together a few of these things gives me an idea. I think it has already been said, but I'll say it again anyway. Nina was saying exhibits outdoors. I think the exhibits are out there and they're real, they're nature. Those are the exhibits that are outdoors. A treehouse would be a great place to sit and watch it, but I understand that there's a lake near here. Let's pretend for a moment that there's good stuff out there at the lake and it's easy to get to with a group of community members. There could be an exhibit in the exhibit hall about that lake. You've already got a lot of stuff in that gallery that's probably at the lake. The ducks are some of the nicest taxidermy that you have out there. Get some raccoons.

Make an exhibit of the lake, but then take people to the lake and gather data about what's out there. Take water quality samples and count the birds. We'll sell you an eBird kiosk and you can come back and put all of your data into the kiosk and compare it to all of the other data from around California about birds you've been seeing. And then, heck, you could compare that to all of the data from the last hundred years and look at how climate change is affecting this area. Or



get people out there and look at when the buds are bursting and come back and put the data in the BudBurst project.

I did a quick google on “citizen science San Francisco Bay.” The result you get is, “Volunteer Citizen Scientists Dive in for Sex on the Beach.” It’s about grunions. The point is, that’s bringing the people into it. There’s a grunion-greeter project and people are involved in it, and there’s no reason that couldn’t be interpreted here also. • Rick Bonney

- That goes back to the question, what is the research that is happening that you are reflecting? It also gets back to, why should people care? If one of the primary things you want is for people to think and behave differently, how does the experience lead to caring? And is it only for the science gallery that you want that to happen or is it one of our intersecting threads? • Julie Johnson
- I love the off-site idea. Our science staff has been thinking a lot about how we do that—“The museum has left the building”—and having exhibits that tie into Lake Merritt or make that connection. • Lori Fogarty

Making it Oakland-Based

Origin of the City’s Name

- There were two parallel sand dunes formed during the Ice Age when San Francisco Bay

was not a bay but a valley. One was Alameda and one is Oakland, at least from about where we are out to as far as West Oakland went naturally. Each of these two parallel sand dunes had a grove of oak trees on them. “Alameda” means oak-lined boulevard. There’s also “Encinal,” which means oak grove, which is a street over there. So Alameda was named after the oaks as was Oakland. • Christopher Richard

A Jumping-off Point

- I think this is your jumping-off point. You’ve got to deal with all of California and want to tie California to the world, but start the visitor with where we are. With a name like Oakland, you’ve got a gift. • Darcie Fohrman

Art and History Links

- The art department has a great painting depicting a section of Eighth Street about three blocks away. It was the horse and buggy era and Eighth Street was completely arched over by the oak trees. • Christopher Richard
- So you could combine history and art with natural science. • Darcie Fohrman

USING THE DIORAMAS

Using Them As Is

- If what we want to do is connect with visitors at a lot of different levels as Lori described,



Kathleen McLean and Darcie Fohrman

Probably Not

- I’m throwing out this idea of using the dioramas as-is as a rhetorical question because what I’m hearing from every single one of you is probably not. • Kathleen McLean
- Not if you want to do stewardship in connection to the local area you can’t. • Rick Bonney

Installing a Diorama in the Art or History Gallery

- It would probably be worthwhile to take at least one of those dioramas and install it in the History or the Art Gallery of this institution, and then interpret it as a work of art or a work of history as an exhibition. • Terry Gosliner
- Or install it in the library or the YMCA. That's what I'd love to see. • Anon.



Scott Sampson and Rick Bonney contemplate wood rat

we have heard all of the examples that people have been throwing out here about what we could do to make that happen, and a lot of this has been based on experience in understanding what really does engage people and get people excited about this stuff. I go back to the question: Can we take our assumption that we can use the dioramas pretty much the way they are, bring visitors in to talk about the natural world of Oakland right now, and create interventions that use the existing dioramas to get those conversations going? • Kathleen McLean

- Knowing that we are going to do some other things in the gallery in terms of the design itself to address some of the things people were talking about. We're definitely getting rid of the carpet, but some of the other things we see as design techniques. • Lori Fogarty
- Right, and doing Web cams and all kinds of interactions and stuff like that around those dioramas. • Kathleen McLean

Start with the Visitors

- I worry that you're putting the cart before the horse in the sense that you're saying, well, we'll add Web cams or whatever without knowing if your visitors want that. I don't know what you know about how your visitors experience life in and around Oakland, how

they experience those areas that you're currently showcasing. I don't know that Web cams and kiosks are what you're going to need. I think that's a question you're going to have to figure out. • Julie Johnson

Lack of Interconnections

- As to whether or not I think the dioramas can be used as is, maybe some of them, but as I just said, they're distinct and life doesn't happen in distinct little plexiglass cases, it's interconnected. Unless you're going to put two or three together to make something, I don't know. How do you make it immersive unless you can open the door and walk in? • Julie Johnson

Reconfigure to tell Stories of Biodiversity, Invasive Species

- What I think needs to happen is that many of the organisms that occupy those dioramas need to be pulled out of them to tell comparative stories of different places where the same thing is happening over and over again. What is really good about it, and what I think you want to preserve, is not the linear transect across California, which is currently the main storyline. What you want to do is talk about California's biodiversity, preserving as much of that diversity that's resonant in those, but interpret it in a completely different way.



And some of those dioramas may function as dioramas because I think you want to have some element where you depict habitats and particularly those that are going to be most familiar to the majority of your viewers because I think that's a point of connection for many of them. The other thing is that you want to take that diversity and tell different species survival and success stories and cull examples of that.

One of the things that people have a real problem with is the fact that there is life all around us, but some of that life is not beneficial to preserving the biodiversity that is unique to California. Somehow that needs to come across, that if you have French broom and pigeons and eucalyptus all around you there's life, but it's got nothing to do with the life that's unique to California. Somehow that understanding has to come across and has to be fundamental to that sense of stewardship. Otherwise you don't know what you're trying to achieve in terms of stewardship. You don't know what the goal is. Somehow all of that has to come together in a new paradigm of creating that kind of understanding because that's the fundamental connection that people have to make in order to be able to become responsible stewards. • Terry Gosliner

A Focus for Argument and Discussion

Like the Torah

- One of the things I think about related to this is that I'm a Reconstructionist Jew, and Reconstructionists are people who believe tradition gets a vote but not a veto. You go to those services every week and the Torah is the same. They think of it as an antiquated, problematic document that they're going to spend every week grappling with and working with. In some ways I think there's an opportunity to do the same thing with the dioramas if they're considered as valuable as this set of Jews think the Torah is—something worth arguing about every week.

I think there's an opportunity to say, "Hey, we have some problematic stuff here, but we also have stuff that we think is important in some ways. How do we keep arguing and red-lining that stuff?" I always think of these ninety-year-old congregants who would be holding up their copies of the Torah that they had crossed things out in that they didn't agree with. That was something that was part of this practice. I think there's a lot of opportunity to be doing that kind of thing with visitors, but that's predicated by feeling like the dioramas have a kernel that is valuable enough to retain in some form, which I think they do. • Nina Simon

Collection as Instigator of Dialogue

- My take on this was, what if you go back to thinking about the gallery less as an exhibi-

Is There a Torah?

- Regarding questions we'd ask of visitors, I wasn't thinking we'd ask visitors what we should do, but ask them to come in and look at these dioramas and these birds that are all labeled and grouped, or these things that have little chunks of land next to them, and see where it goes. Not about what we should be doing, but what are your questions about these things? And we could see if those questions don't then give us a good starting point for dealing with those things. But that is based on an assumption that we've got the Torah out there and it's about refining the Torah, not necessarily writing a new book. • Kathleen McLean
- There's no Torah. There's no Torah out there for most people to be understanding this. Most people don't understand ecology or evolution or any of those key ideas that we want to be able to communicate so that you understand how natural systems work. Most people don't get that. If they don't understand anything about the Torah they can't start to critique it in any way. It's up to us to decide how we're going to present these ideas I think. • Scott Sampson

Telling New Stories in an Outdated Library

- Like Darcie, I have a lot of baggage with that hall. I was a tech here twelve years ago and having been in museums for a long time, there's a lot of appreciation I have for the technique of making those things. To me it's a little like coming across a time capsule from the '50s or a library from the '50s, and no book has been written since then. I'm thinking of all the literature that has been written in the last fifty-four years that in fact should be in that library. All we have is that library, so how do we make those stories visible? I've thought, well, you could have plastic washed up on those beaches. You could have the albatross dying on those beaches because they've eaten the plastic. You could have people going to those places and somehow the gallery is having their visit as part of that trip and they could be good stories and they could be bad stories. But there's not the bridge to the outside and there's not the bridge to the present.
 - Mary Jo Sutton

tion and more as what it actually is for the Oakland Museum, which is a collection, and then beyond that to Julie's notion of a library? If we looked at the dioramas as a kind of library of living things and habitats of California, that then could be the jumping-off point for dialogue. Maybe some of it is even contentious dialogue: "Who cares about woodpeckers?"

There are some scientists over at the Exploratorium who say that these charismatic megafauna have very little to do with the bigger issues of life on earth, and yet we all go around loving birds and furry things when in fact they're not the most important thing you should be studying. Well, you bring in that school of scientists and they'd say rip out all of the dioramas because that's not what's really important.

But we've got to start somewhere. And if this doesn't seem like a good way to go, we need to know now. Does the notion of thinking of those as provocateurs of conversation or question instigators have any value?

- Kathleen McLean

The Dioramas and Stewardship

Study Findings: Restorative and Emotional, Not Stewardship

- I've been thinking about your goal and the stewardship piece and whether dioramas are really the venue for that, and I've been thinking back on earlier studies about diora-

mas, one of which I was part of at the Chicago Academy of Sciences, which is well known for its incredibly beautiful dioramas. What we came down to is that what the visitors really got out of that was essentially a restorative and emotional experience.

I would be really hard pressed to think of a study that has been done on what visitors get out of dioramas and think about that as stewardship and action. You could argue that it created a sense of connection. You could argue that it created a sense of imagination and putting yourself in a sort of pristine place. For people who have come a long time, maybe they are the ones who could start thinking about issues of extinction because some of those dioramas were old enough that they contained things that had long since died. But thinking about using the dioramas to get to this goal of stewardship seems like a hard sell to me. I'm struggling with the issue of whether that is really the goal that you want, and that's the ultimate goal. • Cecilia Garibay

What About a Sense of '60s Eco Appreciation?

- What we're coming up against is diorama and stewardship. Stewardship has always been this parallel thing that everybody is really interested in and everybody says the museum needs to be dealing with. And then there are the dioramas. I think part of the idea of thinking about the new gallery would be,



what if you could forget stewardship, sustainability and all of those pressing issues and that wasn't the goal of the gallery? Instead, what if the goal of the gallery was much more of a '60s ecological goal, which is when these dioramas were created, involving an appreciation for the intricacies of these habitats and these critters? That's it—just an appreciation for it. • Kathleen McLean

- My answer would be the same. It wouldn't work that way. • Julie Johnson
- One of the societal problems and dilemmas here is that in the '60s people were probably more connected to the natural world than they are today, and yet the necessity to have people have that connection is much greater now. This is why we are in such a crisis. People's understanding is diminished and the necessity to have that understanding is increased. That's what we're up against. • Terry Gosliner

Gap Analysis: What Is Achievable?

- I think that we need to unpack some things here. We need to unpack stewardship. Back in the early days of citizen science, my idea for success was data received at the Lab of Ornithology. How much data was I getting from the school kids or the pigeon watchers? It took me a while to realize that was absolutely ridiculous because there were so many kids that were getting our materials, and their teachers or Saturday morning academy

leaders or whoever were taking them out and showing them the different kinds of pigeons. They learned there were different kinds, they realized there was wildlife in the park, they learned that not every bird was a pigeon, and they might have even collected data, but they never sent it to us.

So I had to go back and revise my whole view of what was success in this continuum. Getting data was wonderful, but having a kid go into a park and realize that not every bird was a pigeon was huge, absolutely huge. It was the first step. And it's actually the first step towards stewardship. So your '60s awareness is stewardship. At least it's step one because without awareness you can't have the next step and the next step.

We really need to come back to unpacking all of those goals and trying to figure out what is achievable here in this institution and then do a gap analysis: Here's what we want to do, here are the things you need to do it, and here's what we have. You've got dioramas, you've got a talented staff that is already bringing people in from the outside, and you'll find out what you're missing. Then your proposal or plan becomes filling in what's missing and putting it together with what's here. • Rick Bonney

Climate Change

- I don't think it would be real useful to have these discussions about the dioramas until you really know a little bit more about what

Visitor Research on Dioramas: Compelling, Visceral, Storytelling Fodder

- A bit of research that I found compelling dealt with visitor questions in front of dioramas. Having been a parent with small kids around these dioramas I found this interesting. One is that the dioramas themselves are really compelling. These things were alive, they are real, authentic things. Unlike other science institutions where you're seeing interactive elements, there's something very visceral when kids see these things. They were really alive, they're not alive now, and they know that these really existed. Then it goes into this incredible storytelling, even if we're not going into scientific literacy. Is this the mom? Is this the dad? Is this a family? Who is hunting whom? Will it live? Can it kill it? Will it eat it? Does it kill it and eat it? It's amazing, the stories that you can tell.

So I would propose that there is something worth building upon. We know there is a gap there, but it's hard for me to think of another construct where there is so much rich fodder there for the storytelling and the authenticity. There is a lot there that I think we can use.

- Lori Fogarty



Wendy Pollock and Rick Bonney in gallery

you want visitors to go away with from the experience here, both in terms of learning goals and emotional goals.

One thought is that with the studies they're now doing of how the climate is going to change in regions and with new papers coming out constantly, there is so much more now than there was a couple of years ago. People are making predictions and because of our Mediterranean climate there is real adaptation that is being talked about. These dioramas were created based on region. The climate in those regions is changing, what would be in those dioramas is changing, and there are going to be new environments that never existed before as well as different plants and animals.

It seems like there's something there, to use those dioramas as real examples of place and region, and how those might change and what they might look like. That might mean even adding a diorama or letting visitors imagine what a new environment might be like. It seems there's something dynamic here. Again there's the issue that we don't know for sure, but you can let that be part of it. Here are these predictions and this is scary, but it's an adaptation that is already happening. Look how well it's going or look what people are doing, using models of mitigation but also models of adaptation. The dioramas could be the starting point for understanding climate change and its ramifications.

In my view that's the most important. I'm prejudiced. That's the bottom line. If I ran this place it would be very advocacy driven about wanting to do something about climate change and at least being part of the movement. • Darcie Fohrman

Culling the Dioramas for the Stories You Want to Tell

Deciding on the Stories First

- What if we think of the dioramas as "ecological theater," a term the researcher Karen Wonders has used? Today was my third visit in the galleries and I kept thinking, what is holding me? Why am I stopping at certain galleries? It's because a story was told there, there was drama. Predator-prey was the most common drama there in the gallery. If we think about the theater of the diorama telling a story, every story is generated from something and every story is told in different ways. It might be an exercise to think about how we're generating the stories. They would come from the visitors' questions, what's relevant to the visitors, what's happening in science research, what's happening in the bigger world. Those are going to generate the stories.

Look at the dioramas and how a diorama could tell that story, and then you get to thinking about how it would be told through Web cams or iPhones or whatever—that's way down the line. I think the challenge is going

to be generating the stories that are going to be told. You have visitors asking certain questions, you've got a lot coming out of science about the environment.

I think your challenge is back in the beginning about how to generate those stories. Then look at the dioramas and decide which ones to keep. You may not keep them all, but you might keep some that tell the story the best. • Mary Marcussen

Switching Out

Vitrines to Tell Different Stories

- You may have many stories to tell. Figure out how you can make that a moveable, changeable space even though it's permanent. You have a sum total of dioramas out there now. Maybe you only need half to tell a particular story for a two-year period of time. Then you change your collection and put the next part of your story in. Think about the vitrines as moveable and you design them that way so it's not difficult to change them out. • Julie Johnson

- Right, they can be on wheels and move as the climate changes. • Darcie Fohrman

Inventorying Stories

Related to Existing Dioramas

- One of the things that would be a really good starting point, and maybe you've already done this, at least mentally, is to have an inventory of stories you can use with the

existing dioramas or elements of those dioramas. There were two things that immediately came to mind. When I was looking at that great section of the intertidal zone that showed the zonation of different organisms, we know that since 1975 that has moved up a foot. That's pretty incredible given the time frame.

When I look at these little animals called pikas that live up in the alpine zone, we know that everything is migrating upward in the mountains, five hundred to a thousand feet in the Sierras. Those pikas are at the tops of the mountains. They have no place to go if it gets warmer. Those are the kinds of things that are immediately relevant stories about stewardship that have got to come to the forefront. Those have to be the things that are in that inventory of what you're going to keep. You can still tell the splendor of nature story and then take it to the next level of the impacts and how that relates to stewardship. I think that is the way I would inventory the keepers. • Terry Gosliner

Do Better Stories = Better Push Content as Opposed to Better Process?

- I would push against that a little because while I think it would make this gallery better, I don't think it would make this gallery what you talked about in the very beginning in terms of making this place a leader in the field and in innovation. There are definitely better stories that could be told around this content, but that's not enough for why we're



A keeper in the story inventory: the pika



Audience Partners, Off-Site Experiences

- A couple of the partnerships that we've thought about in terms of the audience question includes partnerships with the YMCA or Oakland Parks and Recreation or the Oakland Library, where there are those visitors that we're trying to reach, but where there are also opportunities for off-site experiences as well as dialogue here. • Lori Fogarty

here. I feel going down that road is something that a lot of museums are doing very capably, but that this is a museum that has an opportunity to do something else.

I think it's worrying less about goals and thinking more about conversations going on. If visitors are talking to each other and if you can create infrastructures that gear the conversations in certain ways to certain levels of sophistication—not even necessarily about content, but what kinds of conversations they're having—you'll be hitting these from a different angle. If you tell better stories I don't see that as community focused, I see it as better push content than what you already have. • Nina Simon

VISITOR INVOLVEMENT

Ongoing

- I have a comment related to questioning the assumption of the format. I'm curious to hear what your timeline is. Do you expect that the visitor intervention time will happen, and then you will create exhibits based on that, and those will then be pretty static? I would question that and say we should be looking at opportunities for intervention to be an ongoing thing on the floor. • Nina Simon
- That is the intention. And I think Julie brought up a good point regarding putting

the cart before the horse. In some ways this project is about the process of gathering information from our visitors and beginning to understand, what are those questions that visitors have? What are those partnerships and connections we can create in the community that are going to tell us what kind of interpretive or technological or design overlay we would have, or intervention in the dioramas themselves? I think definitely the idea is that we don't want to build ourselves back into the same plexi box that we have here. So how do we have those conversations be ongoing? • Lori Fogarty

- And the change is ongoing. • Nina Simon

Asking Visitors Questions

Caution: Asking Visitors What They Want

- I want to speak a little bit about getting opinions from the general public. When I was in Utah we did this for the Utah Museum of Natural History. We went all over the state of Utah and talked to communities and asked, what's your opinion of natural history museums, what do you think we should do? Of course there was an entire spectrum of answers. Many people had never been to a natural history museum, many had no intention of ever going to one, but they had opinions about what we should be doing. It gets to be the wrong question.

At some point you have to decide up front,



what is our identity? What do we mean to this community? You can ask the community that to some extent, but at some level you have to decide for yourselves and it goes beyond your mission statement. Consider what would happen if you were to go and pick randomly a hundred people, your average Joe on the street, and ask, “What does the Oakland Museum mean to you and what would you like it to mean?”

You need to decide for yourselves. If it’s really about sustainability, and you polled those hundred people and asked what it is the museum should be talking about, sustainability is probably not going to be at the top of the list. If you want evidence of that, look at the current presidential race. Where is sustainability there? This is a key point. We need to build awareness. In natural history museums we do have the scientific knowledge to know that this is a crisis that we’re facing.

We shouldn’t expect people to echo that back of us and say, go do it. We need to go out there and it’s not that we’re just passing down wisdom from on high, we need to engage them in the process. But you need to be very careful about the questions that you ask, and you need to do a lot of internal decision making before you go out there and do that. I think that’s what I’d say from the experience that we had. • Scott Sampson

Engaging Visitors in Conversation

A Process Instead of a Message

- In the title of my project overview, “Bringing the Dead Back to Life: A Community Inquiry and Co-Design Project,” the reference to “dead” is acknowledging the visitors’ primary response, which is universal across not just these dioramas but all dioramas. Is it dead? Was it ever alive? Did you kill it? It’s the first wave of questions we’re going to get around anything that has dead animals in it.

It gets back to Julie’s question about models. Museum people, particularly people who care for these and prepare them, think of them as perfect examples of the natural world. At the Exploratorium they would talk about their exhibits as natural phenomena and they weren’t. They were models of natural phenomena. A fan isn’t the same thing as the wind blowing outside. The air moves, but one is created by a fan and another by a real natural phenomenon out in the world.

These are not living ecosystems, these are models. These are pieces of organic material and some plastic material and lots of paint and lots of stuffing. They represent something that the scientists and museum people know, or at least have an inkling about, but that’s not the same thing as

Asking about Models and Maps

- One of the questions you might want to ask is, how do you use models in your life? It has nothing to do with the specific nature of the content, but you really want to understand if and how visitors use them because those are going to be tools or elements that you might want to put in your exhibition. I think those are much more valuable questions than, “What do you think we should do?” because visitors know what they know and don’t know what they don’t know. • Julie Johnson



What Happens to Goals?

- Are you approaching this idea of the conversation with the possibility that people might say, this has nothing to do with this goal? • Wendy Pollock
- Yes. Well, I wouldn't say this has nothing to do with the goals because the conversations aren't about goals. They're about, what is that thing and why is it in there? • Kathy McLean
- But the museum is not going to disclose in this conversation that it has a mission here? • Wendy Pollock

what they potentially represent to visitors. So it is pitching this as a project that is more about the process of having conversations with people and seeing what comes out of those conversations and how those conversations can be inspiration for intervention in the gallery. That is a kind of opposite way of approaching these rather than saying, what is our main message and how are we going to deliver it?

That's where I keep coming up against this idea of stewardship, global warming, sustainability—that's our message. There's

stuff out there that I think could generate really interesting questions that get us there in a roundabout way. • Kathleen McLean

REFOCUSING THE DIALOGUE

Grappling with a Mismatch Between Goals and Dioramas

- The goals for the gallery [see page 36, sidebar] are very nice goals. These are goals that every single museum articulates. They are very broad and general and they can be interpreted in many different ways. These

Conversation Off the Rails: What Are We Talking About? Visitor Process? The Gallery? Both?

- It sounds like we morphed a bit ago and I missed the morphing. I missed the turnoff. There's a project that you want to do around engaging people in dialogue, and then there's this project you want to do about your gallery. We're responding to "We want to do gallery and here are the goals of the gallery." And there's a piece in this larger process about talking to visitors and engaging them in conversation. Is that correct? And we recently switched from talking about the proposal you want to do, in which you want to talk to visitors about stuff as part of this larger thing to get you to all of this other stuff, which we are still talking about. But somehow now we're talking about another smaller piece? • Julie Johnson

- It might actually be that the conversations with visitors shape that gallery and revise those communication goals. • Kathleen McLean
- So where we started earlier was, you wanted our input and understanding about the gallery and now we've switched the conversation. We were at one level of input in talking about the gallery in terms of these six measurable ideas, and then there was this slightly different conversation about a project that would engage visitors and define certain questions, which will reframe or do something different. I feel we're having two conversations at the same time. • Julie Johnson
- I agree. It's either two separate conversations or two stages of one conversation and we need to be clear about what we're doing here. If the goal of the gallery is scientific literacy, linking to what

they see outside, stewardship and citizen action and how that gallery gets you there, but then, as part of the design process, you're going to be engaging the community in dialogue to further shape what the gallery is going to look like, that all makes sense. What it sounded like you were saying with your last comments was, well maybe stewardship isn't the point at all, maybe the end point of the gallery is to engage people in dialogue, which is when I started rolling my eyes. My question is, any old dialogue? And there was Wendy's question, doesn't the museum have a mission? I think that's where this side of the table got confused. • Catherine McEver

- We're confused on this side of the table also. • Scott Sampson



set you on a course: If you're going to do this, this is what you need to do in your gallery.

What I'm hearing from you is, if you want to do this, the stuff you have doesn't really map to this very well. What I'm hearing is, maybe the best option would be to get rid of everything and do something different. This is something I think we've all been grappling with a lot. Those gallery goals don't map to what is out there right now.

Underlying these goals—scientific literacy, exploration outside, and stewardship and citizen action—as we've heard from a number of you today, are pressing issues for this planet. We could forget everything else. There's this much time and we have to all mobilize around this or we are not going to make it. We're hearing that over and over.

If that's the case, and if the Oakland Museum is really committed to that, then it seems like you might say, we're going to figure out what this means. We're going to figure out how the group that we identify as the community engage in the world. What are their languages and tools in terms of models, maps, and questions about their own personal life? How do we take this piece and that piece and put it together?

The dioramas are just techniques, and they may not be the best techniques for introducing the Oakland Museum community to the

ideas contained in those gallery goals. I think that is actually true, depending on how you define these ideas.

The other part of it is that the staff of the Oakland Museum are totally committed to keeping the dioramas and maybe adding a few more, filling in the gaps for things they don't already have. That doesn't change the problem. Adding a few more dioramas to flesh it all out doesn't change the problem of realizing these goals.

One of the things we've thought about doing is taking a different approach, saying okay, these are our altruistic goals. These are the goals of all good science people across the planet. What we have to do then is figure this out. The idea of backcasting came up earlier. If we say one of the givens is the dioramas in the gallery, and these are our goals that we want to reach in some form, and we've got our audience in there somewhere, how do we backcast from the dioramas and with our visitors to get to those goals?

That's kind of the way we've been coming at it, to see if there's a way we could think really differently about the problems, using the depth of relationship with the community that exists now in other parts of the museum to galvanize the community and the dioramas, throw them in the pot together, and then see how we backcast to this.

• Kathleen McLean

The Goal: The Best Project Given the Time, Money and Materials

- This may be mind-numbingly pragmatic, but I think we are not in a blue sky situation. This is not tabula rasa. We own what we own, for better or worse. We can keep, we can toss, we can modify, but we've got \$9 million bucks and we've got something like a completion date. From my point of view the discussion needs to be, working with what we've got and the money that we've got and the time that we've got, what's the best project that we can put on the floor for the people of the city of Oakland? • Christopher Richard

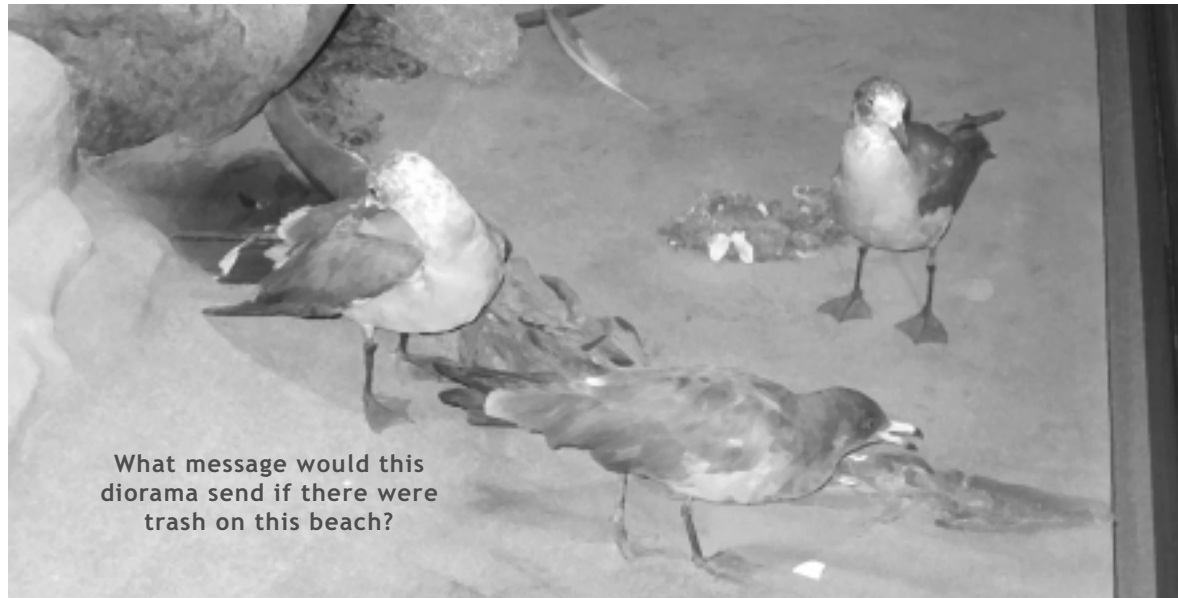
Which Discussion Are We Having?

Three Distinctly Different Conversations

- I think we're having three different conversations. First of all, at the loftiest level, are we going to engage the community in something completely different or potentially different? Secondly, are we going to stick with those goals and if we were starting *de novo*, how would we go about doing that? Thirdly, which is where I think we are, can we modify the dioramas and their components as a basis to achieve that? I think we need to be clear which of those three things we're talking about, and the solutions are radically different. • Terry Gosliner

The Scale of the Discussion: Gallery or NSF Proposal?

- Then there's a fourth question, which is, what is the scale of the discussion here with this group? Are we talking about helping you redo your entire gallery or are we talking about helping you do an NSF proposal? Those are two entirely different things • Rick Bonney



What message would this diorama send if there were trash on this beach?

NSF Grant, Co-Creation, Organizational Change

THE NSF GRANT

Innovation: Content, Audience, Format

- I think perhaps part of the reason that we shaped these questions the way that we did is a conversation that we had a couple of weeks ago with Al DeSena, the head of NSF Informal Science, who said that NSF is looking for innovation on three fronts. One is content, one is audience, and one is format. Our questions stem from that. Is the content more about scientific literacy or stewardship, and where are we on that spectrum, knowing that from an institutional perspective, we do have some level of goals on each of these fronts from a content standpoint?

Then there's the audience piece. We know it's a very broad audience, it's a very diverse audience, it's Oakland, it's California, it's sophisticated, it's entry-level, it's urban, it's conservation-minded. So we have all of those questions. How do you serve that full span?

And there are the format questions, which is what Kathy was talking about and where we really started down the NSF road. Rather than doing this the traditional way, saying we're going to take the questions the visitors

ask and then create an exhibition to answer those, it was more what Nina was talking about. How do you truly engage in a dialogue and conversation and have that be an ongoing one in which we're not deciding the content to push, we're actually letting ourselves be open in this process to the questions of visitors? • Lori Fogarty

- You can make that pitch to NSF, the way you just outlined it and as you've written it up here. You're going to undertake this experiment with the idea that you'll end up with a new approach to formats in a natural history museum that open it up on an ongoing basis in a way that requires a new relationship to the community. To me that makes sense as a proposal. I realize you're also dealing with institutional issues and a whole other discussion. • Wendy Pollock

Purpose of Proposal/Funds

- I have a question about what the intent of the proposal is. Is it to find additional resources to support this renovation of the hall? Is it to get the prestige of having an NSF grant to add weight and relevance to the project? I just don't understand how that re-



Wendy Pollock and Terry Gosliner in gallery

lates to the other conversations we've been having. • Terry Gosliner

- The money that we have budgeted for the gallery assumes no NSF money, so we'll do the gallery at the \$9 million level for the exhibit portion, separate from the architectural portion, regardless. But I think

A New Type of NSF ISE Proposal

- For those of us familiar with NSF ISE proposals, a challenge is to let go of our previous models. This is not going to be a proposal where we have eight learning goals and say that seventy-five to eighty percent of visitors will walk away having achieved those after a twenty minute visit to the gallery. Even the struggle of us trying to conceptualize how to move somebody looking at a diorama to think about global environmental sustainability is huge. We can't even articulate how we're going to do that, but we're going to experiment with ways to do that.

This is very forward thinking, it's very experimental. I think it's interesting to NSF because there are a lot of the pieces that NSF is interested in. They're interested in the audience, which is broad and diverse, and in how one gallery addresses all of these different people. They're interested in the content. There's a big push among many if not most natural history museums to switch from environmentalism as a goal to sustainability. NSF is interested in that, even documenting how you move someone from scientific lit-

eracy or awareness to sustainability. So we might not even have several goals, but might look at the play or interaction between those goals because it may not be linear. Because you're aware of something doesn't mean you're going to care. One photo of a harp seal will get me to write a check. I don't know anything about its natural history, but it's so damn cute you've got to write a check.

There is also visitor voices. A lot of people have talked about it, there are many examples in your book about integrating visitors and visitor-generated content and questions, but who has really done that and monitored it, especially with a diverse audience, trying to move them from awareness to global sustainability? I suggest that we pull back from the need to be so explicit because this has never been done with this combination to this degree, and it's going to be difficult to articulate it in a proposal in a way that we can give some intent regarding what we want to do without it being too loose or too confusing and promising more than we can possibly do. • Mary Marcussen

what we have institutionally set out to do in all three galleries is push ourselves to a different level because we know, particularly for the community that we are in, that business as usual is not going to fly. So part of it is a self-imposed challenge that we have set ourselves to say not only what would be really different and really innovative, building on what has been done in the past at this institution, but is there something that would have relevance for the field as well?

I do think that's part of what we're asking of this group today. Are there issues and challenges and questions that we're grappling with that are shared by a lot of institutions out there with dioramas that they're probably not going to trash either? Or maybe they will at their great expense and loss. But is there a way that we could be doing some research and visitor engagement and community engagement that could be beneficial to the field at large?

Then I think, as part of that process, the kind of work that we do either in visitor evaluation, visitor research, community partnerships, new methodology in exhibition design, or new engagement with technology does set a new bar for us and we then continue to push ourselves to be at that new level. • Lori Fogarty

- The way Lori describes it, it is using NSF in the way that the Irvine project influenced



the Art Gallery, in that it really is about institutional change. And if you enter that realm of peer review and best practices, it challenges you internally to do things in a different way than you did before.

- Kathleen McLean
- We submitted an NEH grant for the History Gallery. I wish NEH was giving the amount of money that NSF gives, but it is a very similar process. • Lori Fogarty
- Will you be able to use some of this to test out some things? • Julie Johnson
- Yes. The board has asked me, if we went for a \$3 million grant, how much of that would fall to the bottom line of the budget that we have for this gallery? I've told them it would only be a percentage because a lot of that would be for visitor research, visitor evaluation, and the process that we would engage in with our community partners to get to the place of figuring it out. • Lori Fogarty

Timing and Parallel Activities

- For the larger context, if you're submitting this proposal in December, the way things have been going there you won't hear about it until next October. What other work is still going to be happening related to this project? • Julie Johnson
- Before the grant goes in there will be some

front-end research started. There will be some more front-end and maybe even some formative work over the next year.

- Kathleen McLean
- We should be thinking as well about some of the questions we think need to be answered at the beginning, before you've even started. • Julie Johnson

Staff Concerns/Fears About Grant and Opening

- There is a pragmatic issue, which is how do we design a gallery (and we need to start soon because it needs to open in early 2012) and at the same time embrace all of the kinds of visitor dialogue and visitor questioning that we've talked about? How do we meet the practical goal and at the same time open ourselves up to this experiment that we're talking about? That's my lay-awake-at-night question. • Lori Fogarty
- My fear is that the timeline feels tight for the opening. I'm assuming many iterations and would clearly like to do many prototyping levels to make sure we're headed in the right direction, and that seems like something that takes time. • Anon
- Yes, it's terrifying, but fear is a good motivator. • Anon
- Would it help if we pitched it as: These four

NSF Grant Audience: Professional as Well as Public

- As Mary was speaking about the NSF proposal it reminded me that if you look at the new NSF framework, they define their audience in terms of public audiences and professional audiences. As Mary was talking, it seemed to me that you were talking about both, and it's important not to lose that kernel that is about the professional audience in the conversation. • Cecilia Garibay

Time ≠ Decision Quality

- When I did this project at the Tech Museum and we were trying to make an exhibit in five months, people were saying it wasn't enough time. I'd say, well, in other cases if we had two years we'd just screw around and make other bad decisions, and maybe they wouldn't be much better. I'm a person who's thinks that speed lets you avoid making the bad decisions that take you a year to get to as opposed to the bad decisions that you make right now. Although I think that by iterating you can make plenty of good and bad decisions along the way. • Nina Simon

years are experimenting with what it means to do co-creation and to develop prototypes that are more engaging and have a longer generative life than just putting it out on the floor and it starts to get old? To think of it as a living thing that maybe really kicks in once you open? It's not like, okay, we're done, tada, and it's perfect. It's like creating a place, a marketplace that's thriving. Would that help, or is it scary? What does that mean, a marketplace? • Kathleen McLean

- I am very comfortable with ambiguity and trying new things and not knowing what the outcome is, and yet not having a product in mind or an example is causing some anxiety in me. Although previously my fear was that we might not be innovative enough. All of the ideas that have come up so far sound fun and interesting and I've thought they would be good and entertaining for me, but that's four years from now and it could be dated. • Anon
- I had an experience around a political event a few years ago that somehow seems related. My daughter and I were going to go and thought we should make a sign and wondered what we should put on it. We had a plan involving what I thought was an unusual quotation, but we didn't get around to doing it. When we got there other people had done exactly what we had in mind. It gave me this wonderful feeling. You don't have to do it all by yourself. There's so much energy out

there and it can help carry us all along. That really gave me hope. • Wendy Pollock

- If what we have at the opening is process more than product, if we shoot our wad and all we've got is process and no product, we need a whole other wad to get from process to product. • Anon
- I think ideally visitors will supply that second wad if the process works well enough. We were talking about the idea of opening empty so that you have something that is fundamentally inadequate, with the goal that it is then becoming full and being filled again and again. • Nina Simon
- I wouldn't be so concerned if it weren't for the financial concerns. If it was just the concept of developing a process and then opening the doors and playing the tape, that would be fine. I'm just concerned about the ability of our community to support something that would be a decade process rather than a four-year process. It's not my responsibility, but I get to live with the results. • Anon
- That is a concern. We are close to reaching our initial fund-raising goal, but one of the big concerns we have is that the more that you introduce pieces that need to be tended and fed and generated and kept up, then it's really never ending. I think that's been a big challenge at this institution and why those



galleries have stayed the same for so long. There hasn't been the infrastructure to do much more than dust and do some basic upkeep. I think our whole model will need to change in terms of how you keep these galleries alive, particularly when you have that visitor-generated content happening and attempt to keep it current. • Lori Fogarty

- Our group had that same question. Basically, can we afford to keep it going after it has started? Can the museum somehow guarantee a sustainability piece for itself, if it's about change? That's very hard to do. • Anon

CO-CREATION

Examples

Examples and Understanding of Co-Creation and Co-Curation

- One of the things we've been grappling with is, what are these ideas of co-creation and co-curation and visitor generated content? What might some of those look like? What are the models? It was helpful when Julie mentioned earlier the open space session and the nanoforums. We'd like to hear more about some of those formats and processes because it's hard for us to picture what those look like sometimes. We have some models we are using in art and history, so we have some history with that, and of course we've all read the *Visitor Voices* book, but it's still something we're trying to figure out. How

does the process of generating questions move into something that is an exhibit process? • Lori Fogarty

Jungle Hill and Monterey Museum of Art

- Here at the museum we did *Jungle Hill*, and that was a year of weekly meetings with paid co-creators. We worked with them diligently to create an exhibition and try to have it be

Taking a Leap of Faith

- It's kind of a huge leap of faith in a way that may be considered ill advised or Pollyanna or out to lunch. I believe that if you do things that are really compelling for people, if you really are genuinely engaged with them, people are hungry for that in this society.

It's like when we did the Web Design for Interactive Learning (WDIL) conference and invited Jimmy Wales, who started Wikipedia. He was talking about when he started it and what it was like, and he said he just decided at one point that the world would be a better place if all people on the planet had access to information and that information was free. He came up with this notion of Wikipedia. I think if he had been rational and logical and pragmatic, he never would have done it. He said he really didn't know where it would go, but he believed there was something important about that idea. There are probably more of those that bomb. We believed that the WDIL project was going to have a life of its own and it didn't.

But when Jimmy Wales talked about what he did he hit some kind of nerve that got lots of people invested very quickly and they kind of took it over. Even though there are people who filter and manage and so forth, the power of the vision was stronger than all that and it really had a life.

Nina said she believed visitors would supply that second wad and I believe they will too. It's like saying you can come and play in our yard, we have great things to do. Or join the band. But it does in some ways require a leap of faith.

• Kathleen McLean

- And money, staff support, and people to maintain and make the changes that are necessary because the changes will have to keep happening. You really need the staff with the vision and belief and ability to carry it out and keep on top of everything. • Darcie Fohrman



Terry Gostliner, Lindsay Dixon, Julie Johnson

their vision, but it took a huge amount of staff time and preparator time. I'd say it was a lot of the teen vision that came into that project and we used a lot of community people, but it involved meeting with the same teens for a year with all of the issues that teens have. They created a park out of a vacant lot and the exhibit described the process.

I did something similar for five years at the Monterey Museum of Art. We started with teen interns and it was the same situation where teens applied, so these were the top students in terms of being able to articulate why they wanted to be involved with this. We started in the fall figuring out what their theme would be, took them through the whole exhibition planning process, and opened an exhibition in the spring. But it was their topic, which is very different.

So the only models I have are with a small group that really bought in. They were paid and this was a job. • Darcie Fohrman

- What were you as a museum bringing to them? • Mary Jo Sutton
- The opportunity to work at the museum and do this, and they got some school credit. On the *Jungle Hill* project it was just a job I think. They got paid. • Darcie Fohrman
- But not much. I was on the first part of that project and we worked with them for a year

gathering data and getting up to speed with what was going on and working at Jungle Hill going out and interviewing people. The teens found out what the community wanted and what the issues were and collected lots of data from the people who lived all around the neighborhood. The exhibit was the result of this year-long project, so they were actually involved for two years. • Kathleen McLean

Art Gallery of Ontario

- Those examples are one way to do it that are very focused and have a big bang to the end of the universe kind of approach. You start it up, think it through, assess it, develop ideas, and then try to fit what you do as a person outside of the museum into a museum frame in a museum that had never done this before. All of that is very cumbersome. But then you can look at places out there that have done this kind of stuff and are doing it more and more.

One of my favorite examples is the Art Gallery of Ontario, where they did the *In Your Face* exhibit. They put out a call at the museum, online, in the news and via snail mail for people to send in their portraits, and the portraits had to be a specified size. There was a London project that was similar, where teens did self portraits about identity and then wrote about it. Again, people didn't know what was going to happen. They put the worm on the hook, threw it in the water

and waited. • Kathleen McLean

Minnesota Sesquicentennial

- Minnesota just did it for their sesquicentennial and they got a lot from the state fair, which is a smart place for them. It was for the 150th anniversary, so it was about the 150 things that should be in this exhibit.
 - Nina Simon
- That's not co-creation, that's somebody's vision. • Darcie Fohrman

The Tech

- We found that at the Tech also. When we were open to any kind of creative input, people were interested, but they were really interested when I was able to say, look, here's what's going to make an exhibit that we would actually put on the floor. That's what they wanted to do. What we thought would be too much work to them, they kept asking for more and more of.

What I found also doing that Tech project, where we had people creating exhibit models virtually and we then selected them and build them for real, is that all along that process there were other opportunities for pulling in co-creators. I felt like I had free rein to do what I wanted. There was a time, for example, when we needed to take video of people painting paintings, and we were going to put this in as part of an exhibit.

I needed to get video of people painting and

didn't know how to do it, so I put a request on Craig's List. I found an oil painter, a graffiti artist and an acrylic woman. The graffiti artist was the best story. Here was this guy, he grew up in San Jose, he hadn't been to the museum since he was a kid. He came and did the graffiti at the shop in the museum and the shop guys loved it and we video taped it. Then he called the next week and asked, can I come back and do more art at the shop because you have this big wall? The guys at the shop said great, so this guy came back with his friends for three weeks.

He came to the opening of the show. I've worked at Chabot with teens who were paid, which is great, but this was different. When he came to the opening he could not believe it, and this was a guy who had no interest in this museum any more. It was a place he went in fourth grade and he was never going to go back.

This is of the things that I get excited about. Terry was talking about people wanting the dioramas to be there even if they're never going to visit them. People have this respect for museums. I think of it like church. You want it to be there, but you might not go. But then if you get called to sing in church, then it's a big deal and you want to bring your family to come hear you. I think we do have an opportunity with museums to awaken this interest that people have and this respect or whatever and that authority-giving. But where I'm going more is that

Giving Criteria and Direction

- What I've found in these projects is, the more criteria you give—I heard this from Kate Roberts when I interviewed her about MM150—and the more you are able to clarify for visitors what you are looking for, the more they feel like they have a real job to do that is valued by the museum and they understand what that job is. • Nina Simon

About Making?

- I'm trying to say that there's a spectrum, it's not just one kind of thing. It's this really broad spectrum. And it's not just making. We talk about exhibit developers and people making exhibits. Maybe it is just making, like the Makers Fair. Maybe we forget co-creation and say that it's about making. • Kathleen McLean

there are these other ways to pull in co-creators. And with this Craig's List thing, they weren't getting paid, it wasn't an ongoing relationship. • Nina Simon

What Do We Mean by Co-Creation?

The Habitat for Humanity Model

- What about the model that Julie was talking about earlier, Habitat for Humanity, where there is a house being built? You can pick up a hammer and you can do what you can do to help build that house. I would say that Habitat for Humanity is a co-creation project at its best. • Kathleen McLean
- That is really different though. I think they're wonderful projects. Habitat for Humanity is a collaboration. It's a definition thing, it's semantics. Habitat for Humanity is a wonderful thing to participate in because in a way it's a metaphor for saving the planet for poor people by giving shelter to our world. By participating in that, you are bigger than yourself and you're really doing something for humanity. But you're picking up a hammer and are doing something you are told to do. • Darcie Fohrman
- Which is what we do all the time when we are making exhibits—pick up a hammer and do what you are told to do. Let's get real here about what we're doing. • Kathleen McLean

- Then why are you calling it "co-creation"? • Catherine McEver

Creative Ownership

- Nina's project was wonderful, but it was about her vision. She picked the artists, she made it happen, she steered it. • Darcie Fohrman
- And that was a fundamental problem. The one-person aspect was a big problem with that. • Nina Simon

The Need for Definition (or not)

- Darcie, are you saying that's the way it needs to be? • Kathleen McLean
- No, I'm just saying that it needs to be defined. There's nothing wrong with doing it this way or that way or any other way, but I think it would really help this project, especially for staff, to decide what you mean. • Darcie Fohrman
- Then I think we say, it's a palette of things like this, this, this and this. If we say, "This is what it is," then it's dead in the water. It's not a generative thing if you say this is the way it is. It's something that you discover on the way to doing it. • Kathleen McLean

Setting the Stage for Visitor-Generated Content

- I think the idea of the whole spectrum is a really interesting one. I think about the *Visitor Voices* book and the idea that there are certain types of experiences that are more likely to actually inspire visitor-generated content. Advocacy is one of them that I remember coming up. This is less on co-creation than on visitor response, but when people really felt compelled to write a letter to their congress person or governor, it was a time when people felt, I really want to do something, it's not just my opinion.

It's setting the stage. The Vietnam Memorial came to mind. This was an artist's piece that was a granite wall of names. What you go to see there is not those names, it's the experience of those people who have lived through this time and are leaving something behind. That is so evocative because of the personal experience, the historical context, the time in your life, the personal relationships. Even if you weren't directly related, there is something you want to see and participate in.

• Lori Fogarty

A Spectrum of Interaction

Playing With A Full Continuum

- This is a very fascinating discussion, and however one wants to define the thing, I don't think you want only one way of col-

laborating, cooperating with, co-creating with your visitors. I think you actually want a multitude of ways of thinking about those interactions across the continuum because of the pragmatic fact that you will not be able to sustain all of them at peak levels for a variety of reasons. That's number one, and number two, because certain things are just going to perhaps lend themselves more towards collaboration than co-creation. I guess I would urge you to think about an array of different kinds of experiences and label them in terms of increasing degrees of complexity.

That's the way that you want to do it, and it shouldn't only be because you're going to get an NSF grant, it should be because you want to do it. The NSF grant, or whatever grant, allows you the opportunity to play around somewhat, to get messy on someone else's dime with some of these different ways of interacting and engaging with your audiences. So in the end it is something that you do want to do and you've figured out that it does mean you need an extra person or you're only going to do it at certain times, or whatever those things are. • Julie Johnson

Models for Participation: Contributory, Collaborative and Co-Creative

- You're using some of these different terms and I'm working now on an inquiry for the Center for the Advancement of Informal Sci-

Defining the Process, Concept, or End Product

- In the Vietnam War Memorial, design is essential. It allowed for what followed to happen. And somebody did design it and it is somebody's concept. Maybe she didn't know that would happen, but whatever you guys do, somebody's got to decide what's there and what's in it. How are you going to get from here to there? • Darcie Fohrman
- Who knows? • Kathleen McLean
- So just keep it open? Then what do you ask NSF to fund? You've got to have something to say. • Darcie Fohrman
- There's plenty to ask NSF to fund. In a way, I feel like you are saying, "What's the end product?" In fact, there's lots to fund that's about how you even find out what the end product is. • Kathleen McLean
- But that is my fear, that we will not have an end product. • Lori Fogarty

The Tom Sawyer Model

- My sense is that if we pick ten things and say this might be kind of getting close, six or seven of them might just flop dead, but two or three of them might really work. It's like you don't know. That's why I said it's kind of a leap of faith. You know there are things out there that inspire people to come alive and participate. And sometimes the participation just might be that, participation.

But I think if you step even further back it's kind of like the Tom Sawyer model. I think the model of museum people sitting in a museum waiting for somebody to raise money to pay them to do the work themselves, the fun stuff as Nina said, that model is dead in the water.

We have to figure out ways like the ecomuseums in Europe did, where you become the facilitators or ignitors that ignite your community to gather and do the work. It's like the Tom Sawyer model, getting people to pay you to let them paint the fence. • Kathleen McLean

- That's what citizen science is all about. • Rick Bonney

ence Education (CAISE), which is an ASTC-based project. We've been asked to look at the impact of public participation in research and we've come up with a range of different models for ways that the public can participate. After sifting through a huge amount of literature and looking at lots of different projects we've come up with three basic models: contributory, collaborative and co-creative.

What we were trying to do was get away from terms like "community science" or "participatory action research" and come up with adjectives: "contributory," "collaborative" and "co-creative." The truth is, no one of those is going to be right. You need the range. There are some people who are happy with contributing something. Those are the people with hammers building with Habitat for Humanity. They are happy to look at the birds and send us the data, but there are other people who really want to create a whole project and that's what the co-creative projects are all about.

My initial impact study suggests to me that there is a trade-off with these projects. People learn the least from the contributory projects and they learn the most from the co-creative projects, but a co-creative project is a small number of people. It's fifteen or twenty people, whereas I have eighty thousand people doing the Great Backyard Bird Count every February. We really need to have that whole range.

The moral of this long ramble is that for me, the fear is that you would try to have that empty hall and have the community come in and create the whole thing. You need an empty room in the hall that you try to have them create. Then you have another room that you've got some stuff in, and you have Nina with her technology ideas helping figure you out how to do something. And then you probably have a bunch of other exhibits that look just like they do now for the people who want those. For them it's a work of art, and for them it doesn't matter if they don't move or talk or sing or whatever. There has to be the whole range of these different things. • Rick Bonney

ORGANIZATIONAL IMPACT/CHANGE

What is Required?

- From your experience of going through any kind of project, major exhibition or new initiative, what are the organizational change processes that you have experienced? • Lori Fogarty

Example: Staff Resistance at the Lab of Ornithology

- Lori was asking about organizational transformation, and certainly citizen science at the Lab of Ornithology is one of those things. I remember when I wrote the NSF grant that



ended up starting the program, it was ridiculed by all of the other professional staff. The director of the Lab asked me to show it around before I sent it to NSF and I did. People said, "This isn't science. Why would you want to reach out to the public?" All that kind of stuff.

And the review panel said, "This is charming. This is how all NSF proposals should be written because this is a true collaboration here." I remember when I got that first grant, saying to the director of the Lab at the time, we need to think about how we're going to reorganize the Lab of Ornithology because this is going to be big, and everybody laughed at me again. That was seventeen NSF grants ago and now we have thirty-five to forty people working on it. So there was a huge transformation that started with a risk, where we had no idea where we were going, and we still don't completely know where we're going. • Rick Bonney

- How many of those original people are still around, and are they still skeptical? • Nina Simon
- No, we don't have skeptics, we have people who argue over what's science and what we can do with the data and how many claims we can make with the data. But no, we don't have any skeptics. We have people who don't care about it. We have a staff of 250, so there are people who aren't involved with

this at all, they're off studying whales or other things. • Rick Bonney

- But what about the people who were originally skeptical? • Kathleen McLean
- Most of them are gone. Some retired, some have gone on to other places. Now people clamor to come to the Lab because they want to do this. I'm getting graduate students now who are coming because they want to study citizen science as a field, and you can't do that anywhere else that I know of except at Rutgers with Rebecca Jordan. • Rick Bonney

Staff Involvement

Allowing/Encouraging Staff Voices

- I have a story about institutional change that is not a happy story. I'll cut to the moral of the story, which is, if you're going to acknowledge visitor voices it is really important to allow staff to have their personal voice out there. In some cases it's positive and in some cases it's fearful. I think one of the interesting parts of this conversation is when Wendy asked earlier, what voice does the museum have in the conversation about sustainability or whatever it is and are you willing with a clear voice to say, here's what we believe? To a greater extent I think it has to be the lots of different voices who work here.

The Easy Part: The NSF Proposal

- The NSF proposal, as Kathy said, is a process. Julie said that too. It's a way to experiment and play and come up with ideas and a model to find out what's going to be in those different rooms. The scary thing for you is that you have to have some faith that there's going to be something in the rooms when you get there. That's going to take some faith. But if you have a good staff and a community that cares, I think you'll get there. • Rick Bonney

Staff Development Activities

- At the Cornell Lab of Ornithology we did a whole series of team leadership development exercises together including a ropes course, and that changed everything. Before we did that, at the senior staff meetings and the faculty meetings there would be incendiary arguments. Now there are disagreements where people speak their minds very loudly but very clearly and very respectfully. We learned that through about a year of coaching with some really good coaches. It just completely transformed the Lab. And we only broke one shoulder at the ropes course. • Rick Bonney

The Voice from the Top

- In my experience it is the voice from the top that makes a big difference. It really is the voice from the top that will dictate how the institution goes and whether or not people embody it. • Scott Sampson

When I came to the Tech to start this new process for how they were going to do exhibits and involve all these other staff who were mostly fabricators who were clamoring to be part of this, they were told because of the hierarchical structure, “No, you’re just going to build this stuff at the end.” There was a real missed opportunity to have everybody be part of this new process.

I think that when it comes to anointing individual voices that are new to the museum, those voices, if they’re in conversation with staff, can’t be in conversation with a monolithic institution. They should be in conversation with individuals who work here and have idiosyncracies and have specializations. I think that’s a real opportunity, but some people might not want to expose themselves in that way. And it might mean a diversification of what or who the Oakland Museum is that is not going to be entirely on mission. • Nina Simon

Staff Buy-In and Meaningful Contribution

- I would echo that. Based on my experience I would say that first and foremost, if you are going to do institutional transformation you need buy-in from a significant portion of the staff. A lot of what happens after that comes from the director in the sense that the director has to lead by example, but the director also has to give people the power to go and change things. You can’t just have a bunch of conversations with people and say, we’re go-

ing to talk to the exhibit department today and the research department tomorrow and get their feedback and then nothing really happens. You really need to take their feedback and show them that you synthesized it.

The same goes for talking to the general public. You need to go back to people and let them know what you’ve learned, and hopefully you’ll bring them back to the process a second time.

It’s very easy for staff to feel alienated. When things are changing people are always uneasy, it’s just their nature. People don’t like to change, even if it’s an exciting thing. So you need to make sure everyone is on board, you give them a chance to express themselves, and then you listen to that feedback and you use that as you go. • Scott Sampson

Staff Diversity

Dealing with “Us” and “Them” Divisions

- If the Oakland Museum wants to reflect a diversity that is more in line with the Bay Area diversity, what does it mean that the creative staff is not as diverse as the visitors that you are trying to get? It seems to me that as you talk about institutional change, that is a huge piece of the equation. When people feel like they’re dealing with “them,” it’s a different kind of process than when they feel like they’re dealing with “us.” That “us” and “them” thing is so much a part of



our reptilian brains. So who is the “us” and the “them”? I wonder if there’s any advice from our guests about how you really start to take that on. • Kathleen McLean

Director’s Lead + Time

- I think that has to come from the director too, and it takes time. Obviously it takes time because people come and go and that’s how you gradually change it. ASTC’s director has been very devoted to this and has done an incredible job. It makes a difference when you’re inside an organization like that. • Wendy Pollock
- The Director of the Museum of the New South has done that and it has taken a long time. She’s building up the staff and it’s a small museum. She recently hired a new VP of Education who is Latino, with English as her second language, who has a strong background in community development but no museum experience. That was a choice. • Darcie Fohrman

Career Ladder Model

- Then there’s the New York Hall of Science career ladder model, which has been so successful for them. It seems like they do such a great job and from on the floor all the way up they have people who have gone through and graduated from this program. Visitors come in and they see themselves reflected in the floor staff and then you meet people like the Director of Education, who

was a high schooler involved in that program. And I think the Queens, Brooklyn, is similar to Oakland in a lot of ways.

It’s a formal program and they get paid for participation, and I think they’ve exported it to some other museums as well. • Nina Simon

Capitalizing on “Us” and “Them” Interactions

- If I understand the history of your museum, you’re not starting from zero in terms of having connections and ambassadors within your various communities. You do have these councils. Regarding “us” and “them,” you could have “them” in the room and still not pay attention and the voice is still not heard. The question, when it comes down to the dichotomy of “us” and “them,” is more about how you come to understand the dynamics and the interplay of all of your audiences so that “they” don’t have to be in the room to be represented.

Whether it be experiences with your council or the thousand conversations you’re going to have that are going to be supported by this NSF grant, how do those various experiences allow you to make new connections and start to build new bridges and new ways of understanding? • Julie Johnson

Examples of Staff Buy-In and the Effectiveness of a Simple Mission

- To me, the Monterey Bay Aquarium is an amazing example for a lot of reasons. In part because I go there and the guy serving me lunch is talking about conservation. How do they get these people? It’s amazing. Everybody there lives, eats and breathes their mission of conservation. That’s another reason to have a simple mission. Everybody knows it, everybody’s into it, and you can’t walk into that institution and not get the conservation message.

It might be a challenge for this institution to think, what is our message that is so clear that when somebody walks in, they’ve got it, that is our identity in this community? It’s a tough thing to figure out and to get enough buy-in to make it happen. They’re an example that has really done it. • Scott Sampson

- One of the things that we did is that the staff worked together collaboratively on designing our mission statement. You read us your mission statement before and made some kind of joke about how you should have it memorized. Well you can’t memorize it, it was something like three pages long. I think ours is thirteen words or something like that, and we talked for a year about every word that was in there. • Rick Bonney

Making Current Staff More Effective

- There is a longer term goal. What does it mean to move staff to be more effective? Unless they're doing a bad job, you're not firing them. Capacity building is an incremental thing, and there will be several ways to do it with different kinds of internship experiences, etc. I think there's a much more wholistic way of thinking about it that you want to employ, and that it's not just along one dimension, it's along multiple dimensions. • Julie Johnson

Alternate Strategies for Incorporating Diversity

Teens as Community Interviewers

- Earlier Julie was talking about several studies that they did at the Science Museum of Minnesota. We were talking a lot about how even thinking about going out into the community, it wasn't that the staff just march out and confront people on the street. One of the programs they developed was training youth to go out into the community to do those interviews and questions, so it was a more embedded process than museum people saying, "Look at my gallery, isn't it great?" • Kathleen McLean
- There's a project we're working on with the Youth Science Center. Part of their effort was to try to understand the impact they'd had over the first eight years and figure out where they could go. We trained staff and teens in a participatory group consensus process and they went out and did twenty community visioning dialogues over a period of about three months collecting the data that helped inform their strategic planning process. There are some twenty different languages spoken in the Twin Cities and there was no way we were going to get the breadth and depth of interviews we needed by hiring individuals. Because we had people who knew us and were committed to us and wanted to do stuff in their communities, this approach made sense.

The teens felt very empowered to go and represent the museum and themselves, but it took some coaching and it took some training in order for them to be able to do it. We didn't say, "Come to one three-hour session and now you can go out and do this." Time is required, whether it be for teens or other individuals that you want to engage, to have people become familiar with the culture of how things work in one's museum. • Julie Johnson

Using Key Community Informants, Community Advisors

- This current project at the Levine that I'm working on is about the changing demographics in the south. There are 120 languages spoken now in the Charlotte region. The title is, "Changing Places: From Black and White to Technicolor." How do you represent all of those communities? It's impossible, but for the early planning and early evaluation and talking to communities, the museum found key informants from the community. You're taking the word of this surrogate, and in general it is someone who is very involved with the community. You have that here. You have these advisor groups, which is huge, so you're not starting from scratch. It seems that you should start there. • Darcie Fohrman



Docents

New Roles for a More Diverse Group of Docents

- We also have a major docent program with about 400 actively touring docents. They are not necessarily representative of the community, but it is something that is a great strength in this institution. One of the things we've started to do, particularly with the History Gallery, is the human mediation in addition to all of the technological overlays.

We're realizing that the whole structure of our docent program is going to have to change dramatically because in these galleries that have had almost no interpretation, it has been the docents who have led people through and essentially told the story, like a lecture. Now if you have technology and you have visitor voices and you have visitor response, what is the role of the docents? And how do you recruit and engage a diverse docent/guide program?

We do have a model there as well, which is the *Days of the Dead* exhibition. We bring in guides specifically for that show, which is for a specific time period, and they're very engaged with the subject matter. It's a different kind of experience. We're experimenting now in the History Gallery with the question, what's a whole new model for docents in a different kind of gallery? I think we have the same opportunity in the Natural Science Gallery. This isn't somebody walking

through and giving you Biology 101, but a very different kind of experience. • Lori Fogarty

The Need for Advance Planning for the Human Factor

- It strikes me that even something like a docent program means you have to start thinking in advance. When the Chicago Historical Society closed and changed its name to the Chicago History Museum, they sort of shifted their docent model. Part of the challenge they had is that they really hadn't thought about it in advance. They had a core set of docents very loyal to the institution who never got brought along with the change. What they're dealing with now is this still very loyal group of people who still think their role is to give you Chicago History 101 here and something else in the next gallery.

It has been a real interesting challenge for the institution to figure out. It seems to me that part of it was the planning piece that needed to happen well in advance. There was planning for the closing and all of these new galleries being changed and so forth, but the human factor and those pieces were never really addressed at the same time. It's something to think about and it's important to not forget that piece. Where does the human element happen in your planning?

- Cecilia Garibay

Combating Prejudice via a "Living Library"

- There's this very cool library project going on that is happening at festivals and things called "Living Library," and it is specifically to combat prejudice. They have books that are people, so it could be a policeman, a homeless person, a gay person—things where there are loaded stereotypes. People who serve as librarian facilitators have these catalogues and you can go check out a "book" and then you spend half an hour with this person. It's such a cool program. It's very human heavy, but if you had the people, you could be doing this "us" and "them" mediation in such cool ways.

I think a lot of museums have the opposite problem. They're trying to have no people on the floor: How can we use technology so much that you never have to talk to a human being? And human beings are the best thing you have, especially if you want to be doing things that are dynamic. • Nina Simon

Goals for Organizational Change and Professional Audiences

- I was thinking about Lori's question about organizational change. My sense is that I don't see that reflected in the organizational goals, and you might want to think about this in parallel with your audience goals. What are the internal organizational goals? That is something to think about in terms of the organization as a whole and then specifically for the gallery. Then there is also the NSF proposal, and what's not here is the piece regarding professional audiences. How would you flesh out the goals for the professional audience in the NSF proposal? • Cecilia Garibay

- Maybe there's even a piece in this grant you're going to do, where there's an element in there with your docents. • Julie Johnson

A Treasure Trove

- Christopher talked earlier about the docents and their experience in the gallery with these dioramas. They have to be a treasure trove of opinions and knowledge and visitor questions and their own interpretation. • Darcie Fohrman

Docent Focus Groups

- I was thinking that during the next few months as we do focus groups with our advisory councils we should be doing this with our docents too. They know more than anybody but the science staff itself about the stories that these dioramas tell that are hidden to many people. • Lori Fogarty
- It would be interesting to see if they all have the same story. • Darcie Fohrman
- I can tell you they don't, but that's because of the diversity of stories to tell within the cases. • Anon
- A lot of them probably have strong agendas too. • Nina Simon

Sustaining Organizational Change

- Lori asked earlier for examples of organizational transformation and things we remembered that were important. There is this one notion I had working with this one group inside the museum. Most of the time when we do transformation projects, the goal is to get to the transformation. When we go on vacation, the goal is to not only get to our destination but also to get home.

When we do transformation projects, we forget the getting home part. We get to the destination, which is the change, but we don't think about the return trip, which is all of the other stuff after the change. For example, do we have a budget structure that helps support the fact that we now have additional staff or additional costs for keeping something fresh and new every twelve or twenty-four months? Have we thought about losses in the sense that change represents loss for some people? Don't forget the return trip from the transformation destination, which involves the mundane stuff, the stuff that's easy to forget. • Julie Johnson

Second Thoughts on Key Issues

OUTLINING PROPOSAL, PRIORITIES, NEXT STEPS

Foundational Steps, Timing, Getting Started

Mock Charrette with Real Exhibit to Sort Out Difference Between Contributors, Collaborators, Co-Designers

- I have some foundational questions. Is this a project to design exhibits based on visitor questions, or to invite visitors to the table as co-creators? That's an area that I don't quite get. I loved what Rick Bonney said regarding the difference between contributors, collaborators and co-designers, and we will have all in this project. What I would suggest is having the local staff team go through a mock charrette. You could do this after Day of the Dead when you have nontraditional visitors here. You could tap your docents. Get a handful of questions that visitors might ask. Go into the galleries and work through: What do we mean by contributing, collaborating, and co-designing?

I think what might come out of that is a relaxation in the tension that I feel in addressing the question, what is co-design? Maybe we could sort that through by doing a walk-through with a real exhibit, with real questions. That might help everybody grab

onto what we mean by co-design. • Mary Marcussen

Goals: Sustainability or Progressive Steps Along a Continuum?

- In terms of content, can a natural history gallery really address sustainability, or are you talking about a connection to nature? I suspect there is some research out there. I know there is something called the "environmental continuum." I think what this project will probably do is end up creating your own rubric and not promise that everybody will walk out of this gallery with action items. Instead, you do your best to bring them along that continuum. The interesting part of this project is that you are going to look at that.

But I think this is a real issue. Are you saying this is about sustainability, or is this about a connection to nature which leads you to the next steps along the continuum? • Mary Marcussen

Target NSF Funding on R&D Labs Within the Gallery

- I have been thinking about the question of format. You have this gigantic gallery and NSF isn't going to fund all of it. Maybe the whole gallery isn't involved in this co-creation or co-design. Maybe there are some R&D labs within it. I know some museums do

Clearer Goals and Direction for Duration of Meeting

- I felt that on day one of this meeting we meandered around and I'm not sure that we offered a lot of help to the staff here. Certainly we want to walk out of here today having done something constructive. I think it would be important for the staff to help guide us and make sure that we're heading on the right track and not meandering. If today is about writing the NSF proposal that's fine, and if it's more about envisioning the gallery that's fine, but we need to figure that out. • Scott Sampson

Need to Identify and Elaborate on Educational Goals

- Have we even really talked about educational or curricular goals of the gallery? We said we want there to be stewardship and we want there to be co-creation, but we didn't really talk about what the educational goals are. For example, are we trying to communicate the nature of ecology or evolution? Those are tough things to do in galleries. Are we going to try to fit those into the current models that we have, and how do you do that with co-creation? Those educational goals are a huge gap that we haven't dealt with. • Scott Sampson

that. There are certain areas that are dynamic, open, flexible, and meanwhile you have your beautiful gallery and the cases that are the same. So many of the things remain the same, but NSF funds pockets of research labs. This may be a way to look at this whole gigantic project and focus on what the NSF dollars are going to go for.

• Mary Marcussen

Schedule/Timing: Starting Now

- I had some feelings of panic in terms of what we have to do now. I think the idea of a mock charrette to define what we mean by collaborating, contributing and co-designing is really important. We need to look at the schedule. If the gallery is going to open mid-2012, that's three-and-a-half years from now. You could spend the first year on audience research and dive into that already if the museum has the resources. What do you really know about the audience, and what part of that audience do you want engaged in the contribution, collaboration, co-design? Maybe you don't quite know enough yet, and you could dive into that now. • Mary Marcussen

Planning for the Ongoing Journey and the Return Trip

- You guys have enough stuff for the next twenty years, which is a good thing. The question is, what do we do first? I want to push against this notion, are we planning the vacation or the destination and not remem-

bering the return? The destination is opening the new gallery and then there is stuff after that. It's not like you're building something that will stay fixed for the next forty years as is, it's the beginning of a series of things.

Starting with what you know best and connecting people to the here and now is your beginning place. What Mary said about stepping through some progression of heightening and deepening kinds of experiences might also be a way to think about it. • Julie Johnson

Learning from Other Museums Undergoing Diorama Renovation

- I would advise you to conduct systematic interviews with all of the other natural history museums that are undergoing renovation: the American Museum, Denver, the Field Museum (which has done audience research), Alabama Natural History Museum, and Los Angeles, where they have really reinvented the natural history museum. The team could divide it up with everybody taking two natural history museums and interviewing them about audience, content and format and make sure we're not reinventing the wheel and have carved a niche for this project in that we're doing something different. You could do quickie interviews by e-mail starting tomorrow. You could even do that to form a conference grant, depending on what you want to do. I have lists of all of these natural history museums, and Doug does as well.



These are natural history museums, many of which are in California, that are undergoing dramatic changes to their dioramas. • Mary Marcussen

Grounding: Assets/Unique Elements

- I started thinking about what makes the Oakland Museum so different. The following things grounded me.
 - The Oakland Museum is a unique confluence of diverse urban audiences.
 - It's a museum for the people with a sense of place—oak land.
 - Dioramas that are interdisciplinary with art and history, which is unusual. I started looking through some different quotes and research papers about the value of dioramas. There isn't a lot out there. There is enough that we can document the value to ecological education, but it's really wide open. I know that Kathy has asked around to knowledgeable researchers in the field. There isn't a lot on how people learn from dioramas, so that is a research thread that this project could really pursue.
 - A top-down commitment to connecting people with the environment, which is also unusual.
 - Another grounding is the visitor voices. In the *Visitor Voices* book there's a list of why it's important. I don't think it's an option to go back. I don't think it's an option to not have visitor contribution, collabora-

tion or co-design in this project. I think the world has changed, the way people learn has changed, and the importance of dioramas has changed. It's not to teach which species are which but about ecological concern, and people expect to be involved. It's the way they learn now. Online or wherever, they expect to be involved.

I think my reason for bringing up the dioramas, visitor voices and co-design is because that's what makes this project unique. We're not giving up the dioramas and we're not excluding the public. We need to just ground ourselves there and move forward knowing those two things. Those two things are part of this project. • Mary Marcussen

Scoping Out the NSF Grant

Audiences, Request Categories

- I thought about what an NSF proposal might look like, and I really think it's a co-designed, research-based exhibition. Yesterday at one point I was thinking it could be just professional development. This could be all about the collaboration between staff and the community. It could be an exhibition to really build and prototype and play with things. I went back and forth. Well, it's both, and what Cecilia was saying about the two audiences is exactly right.

We've got our primary audience, which I think should be the public as contributors,

Why Visitor Response as an Element in Exhibitions?

- To validate visitors' experience, knowledge and emotions
- To support visitors in personalizing and integrating their exhibition experiences
- To redress a perceived imbalance in the content of an exhibition
- To enable the institution to engage a wider audience
- To expose visitors and museum staff to diverse perspectives
- To open up possibilities for dialog and exchange
- To extend participation beyond a programmatic event
- To reinforce visitors' intentions to take action
- To help people find others with common interests
- To provide a constructive way for a community to respond to a contentious or emotional issue
- To deepen museum staff's understanding of visitors' experiences
- To honor public creativity

From *Visitor Voices in Museum Exhibitions*, Kathleen McLean and Wendy Pollock, eds.; ASTC, 2007

The Technology Component

- All of the “ask NSF” categories you just detailed had to do with people. Maybe this falls under exhibit design, but it seems to me that there is a technology development element to creating exhibit components that support dynamic, continuous input. I think that is going to be a big one that’s about stuff. • *Nina Simon*
- And you’re assuming that does come under exhibit prototyping, program design and implementation. • *Kathleen McLean*
- As would a citizen science element and docent training. There’s all of these other parts that we’ve talked about that are not just about rebuilding a diorama. They’re all pieces. • *Mary Marcussen*
- But I think Nina’s right. That’s important to pull out separately. What’s the infrastructure for supporting this kind of engagement with the community and making sure that it continues over time? They’re using that term, “cyber-enabled learning” all the time. What does it mean in a museum? It would help NSF move forward with that also. • *Wendy Pollock*

collaborators and co-designers, and as informal science learners. You’ve got two parts of the public here, which is really important to acknowledge. The secondary audience is museum professionals—those who are reinventing and reinterpreting dioramas, and those interested in co-design. There are many in each of those groups, and maybe they overlap and maybe they’re separate. So we’ve got subgroups within the public and the professional audiences, but I really think engaging the public is really what it’s about.

Then I thought about what you would ask NSF for. If they could give you a nice amount of money, what would you spend it on? I think there are four parts. The first is what I would call participant support, and these are your community people. I would give them stipends, I would give them transportation, food, memberships. I would create events to bring them here. I would just pour money into getting these people here to work with you. Have family nights with pizza after everybody gets off work. That’s how you start, and that’s a big investment.

The second part is the exhibition design and development. The designers, the curators, the fabricators, the prototyping.

The third part is embedded research. There are two threads, and there might be more that come out of the conversations today. I think one of them is about this whole issue of behavioral change—where people start from

and how you can move them along in a diorama-based exhibition. There’s not a lot of research there and it’s wide open, so we can not only teach ourselves and better this project, but it will also be extremely useful elsewhere. The second one is co-design. What is it? We haven’t even defined it among ourselves, and I doubt there are many others who can. This includes the expectations, process, culture and outcomes, and how to remain dynamic and keep the people involved.

The fourth thing you could ask NSF for is professional development in two parts. There is your internal staff and your organizational change and what it takes to do that. The second is your broader field, and something we haven’t talked about is how to engage other natural history museums in this. Should they be here at the table with you as advisors? Can they help you prototype things? Can they help you disseminate things?

Those are four pieces of NSF investment. I didn’t go into what the outcomes might be as a result, but they would be significant to the public and to the field. • *Mary Marcussen*

Honing the NSF Request to Select Pieces; Approaching Others for Targeted Funds

- I’m not sure everything on your list needs to go in one NSF proposal. People at the Science Museum do this all the time. I tell them, take something out of there, focus it more, pick one of those ideas, not five of



them. Focus it and go deeper with it, don't try to do a scatter-shot thing. To that point, you may decide that all of those are really important in the next twenty-four months, but NSF is best for one of those things. Some of those other elements might be better for other funders.

When we did the *Race* exhibit we were a subcontractor to the American Association of Anthropology, but there were other pieces we felt were really important. For those we went to local funders because it was about engaging visitor voices and our community, which is not something NSF would fund, but was important to the Twin Cities funders in thinking about how to engage communities. In fact, we ended up getting funding from places that would not normally fund us. They fund community engagement and interaction, but not necessarily science museums.

The notion I want to put forth is a strategic funding plan. Look at all of the things you want to do and then figure out who are the best people or entities to go to. Maybe even one of your community councils would ante up the money to do a piece of something if you could be really clear about what that piece is. For example, NSF is not going to fund organizational change. • Julie Johnson

Combining/Prioritizing Project Components/Goals

Visitor Voices vs. Diorama Learning: Which Wins in a Fight?

- And are we assuming that you really can do both? What I'm hearing is that there's the diorama/learning about science/behavioral change side, and then there's the visitor voices side. I'm wondering what if, at the mock charrette, everybody just wants to talk about, "Here's where I want to go with the dioramas," and nobody talks about their connection to nature, sustainability, or behaviors towards nature in real life? What wins? Is it the visitor voices or the educational goals? • Nina Simon

Marrying and/or Mapping Five Disparate Components

- Mary's synthesis of this was fabulous because it pulls it together, but it gets back to Nina's question and to Scott's question earlier about educational goals. In my mind there are five major components that we have to somehow marry. The question is whether they would be interested in getting married or whether they would hate each other from day one.

I was hoping to get here early enough to post this on the wall, but imagine a big sheet with lots of little boxes on it and a horizontal arrow that says west to east. It's the dioramas, the transect, the walk through California. It's the gallery as it is right now, and it's the gal-

Laying Out the Big Picture

- In response to what Julie said, as proposal reviewer, I and others have been impressed by proposals that lay out the whole big picture and then show how the proposal fits into it. And it's even better if you can show, for this part we're going to this source and for that part we're going to that source. • Rick Bonney
- That's why it's important, though NSF won't fund organizational change, to assure them that this project has that top-down commitment and that you've undergone significant change and are continuing that process. That's an important overlay. • Mary Marcussen



Nina Simon, Scott Sampson, Darcie Fohrman

lery in terms of the content that it has right now, which is really focused on communities and interdependence. We didn't discuss this much yesterday, but it's organized around the notion of communities and the interdependence of living things. That's one thing and it could stand alone. It has integrity in and of itself.

Then we have another sheet, which is the museum and all of its audiences and all of its hoped-for audiences. In the small group I was in, we spent all of our time talking about audiences, including who they are and how might we connect with them. I was going to do that one as more of a picture of the museum with a gazillion tags, some of them bigger than others: African Americans, Latinos, families, young adults, science phobics, science geeks, school kids, Asians, Caucasians, docents, stakeholders, community activists, politicians, scientists, and so on. That's your audience piece.

Then there's the NSF sheet. My sense from yesterday and the questions that everyone had is that it is about organizational change. One of the reasons why Lori wants to go for the NSF grant is the desire for the museum to be a major player. What does it take to be a major player? It's doing things differently. It's thinking about audience, content and format in the way NSF delineates those. It's thinking about impact, collaboration and innovation. That's all the NSF informal science education.

Then, as a result of NSF, there's the impact on the professional audience. What's the innovation piece? What's the rest of the world doing out there? Why should we care at the Oakland Museum? Well, if you want to get NSF money, or if you even want to be a player in the world of museums or start collaborating with other organizations, you need to know what everybody is doing and be ready to engage at that level and have something to offer to that larger community. As in science—scientists don't practice in isolation—you build on what others have done. That's the foundation of science. So thinking about this and being a model for the field is another box.

And then there's a final box, which relates to what we heard when we gathered a group of scientists here, and to what Scott so eloquently and passionately pointed out earlier, and to what Al DeSena said when he was here. He came out to do a sustainability testimony to the National Science Board at UC, and it was all about climate change, sustainability, and the urgency of the crisis we are in. As Darcie Fohrman has stated, it is unethical for the Oakland Museum not to deal with it. And that doesn't mean dealing with it as a by-product of scientific literacy or stewardship, but as the major focus, as an advocate.

Well those five things don't all map together. For me, in thinking about visitor voices, in thinking about the gallery, in talking about



the dioramas as a library, in talking about bringing in people to ask their questions, that all works really well in a world where we say the goal of the gallery is for visitors to understand that communities exist and that all of these living things are interdependent and we're part of that. That's a very solid foundational idea. That is not the crisis at hand. They can map, but it means you really have to be tweaking. That community idea is one thing, that idea of crisis is much bigger than that. And I haven't heard the staff say that the most important thing in that gallery is that we've got to get people to understand the crisis at hand—not really.

What if what gets done in that gallery depends, as Nina said, on who wins? It's really prioritizing these things. What is the most important thing here? • Kathleen McLean

Push Content as Provocation; Visitor Action/Reaction in Pocket Spaces

- I have an idea that connects to what Mary was talking about in terms of doing pockets and it connects to this challenge relating to the content we want to push versus the experience we want people to have. Every participatory experience has a call to action of some kind. I'm wondering if there's a way that some part of the museum push part of the gallery can be provocative and direct and be that call to action. Then by the time people get to these lab or pocket spaces they're ready to be active as part of it, whether it's reactive against what the mu-

seum is saying or whether it's additive. It's thinking about using your specific goals in terms of the content you want to give as an opportunity to provoke the visitor experience, rather than trying to have the visitor experience create or in some way align with those goals. • Nina Simon

SUSTAINABILITY REVISITED

Using/Tweaking the Dioramas

- One concern I have is sustainability and how to deal with that, and what it means when we say it here. To me it means adapting to climate change. I think the fact that you have the dioramas offers a unique opportunity to address it. Everybody is making up these stupid climate change exhibits with graphics and words and interactives and how carbon dioxide gets into the atmosphere. You've got dioramas that are showing existing bioregions, habitats, and interdependencies and if you're willing to change them and tweak them, there are ways to use that to show different scenarios regarding what's going to happen, who's going to be living where, or what's going to be growing where. I think there's a great opportunity there. • Darcie Fohrman

Visitor Stages: Between Science Phobic and Connection to Nature

- Kathy McLean mentioned science phobic people as one of the audiences. I think there's a stage between science phobic and connection to nature. We've found in our experience, particularly with recent immigrant groups that come the museum, that of the three galleries the one they connect to the most is the science because of that connection with nature. • Barbara Henry

Adding Delight to the Mix

- I think the museum has to push the delight part of it too. It can't just be the icky part we push or the change-the-world part. There has to be a pleasure piece in the gallery that is stronger than what is there currently, and it has to be enough to make you go, "Wow!" There has to be a little bit of a gasp in there that makes you connect. I think it really is about that connection, and you don't get that connection unless you're touched in a way that isn't just in your head. • Mary Jo Sutton

Pinpointing the Goals/Focus Relating to Sustainability

Focussing on Clear Goals Along the Continuum

- I think that we really have to focus our goal more. Stewardship is great, but it's huge, and I think we need to be a little bit gentle with ourselves in using the Habitat for Humanity model. Let's think about what the museum can do with this as a starting point or somewhere along the line in the continuum of working towards stewardship. The goal of helping people feel connected, of helping them get to that point of loving the thing before they can save it is a worthy goal. Maybe if we think of wielding a hammer instead of building the entire house, we can get there. So I think we really need to focus and find the heart of the project and stick to it.
 - Lindsay Dixon
- The continuum is pretty well acknowledged in all of this activity. The real question is, do we try to do it the way we articulated it originally, taking the whole continuum and then get realistic about putting 70% of our efforts towards connection to nature and only 5% of our efforts towards behavioral change? Those are the questions the museum will have to decide because you can't do 100% for everybody. During her opening presentation Nina talked about the concentric circles of audience and the fact that you can't just keep trying to reach everybody

forever. You've got to really target and focus. But I think everybody out there is talking about this and the question is not so much either/or, the question is, where does this museum focus and put its energy?

- Kathleen McLean

Connecting to Nature

- I think there's a problem in that I'm hearing that sustainability and connection to nature are two different things. Or that the mission here and what the dioramas can do is connect people to nature, but can we do sustainability? We don't know that. The world is in such big trouble because people aren't connected to nature. Maybe others are teaching sustainability in the wrong way. They're giving people things to do, telling them to go home and recycle, and so on, but how can that work if you're not connected to nature?

So maybe this connection, which dioramas can do so well, is foundational for teaching about sustainability. The Santa Cruz Museum of Natural History declared sustainability as the overarching goal for the renovation of their galleries. The Cleveland Museum of Natural History joined up with a local eco nonprofit and created the Center for Environmental Sustainability at the museum. Is it all action sustainability and we're forgetting to help people connect to nature so that they eventually get to sustainability? • Mary Marcussen

Cal Academy: Focus on Global Impact

- Let me share an anecdote about the California Academy of Science. The decision was to do the California Hall with climate change as the focus. Our first idea was to start with the California we love—the connection with nature, what we love in the first place about it, and relating it to human activity so that's part of the jumping off point. Half-way down the road the administration made us change it and have it focus on climate change impacts. They wanted to get the global impacts in there because it's more dramatic. • Darcie Fohrman
- Why do you think they did that? • Kathleen McLean
- I think it's because in many cases there are conservative forces working within museums on boards and so on, that are afraid to take an advocacy position. It's easy to report on the science of climate change and carbon dioxide buildup and everything else, but it's another thing to say, we advocate this, and we advocate people doing this and this. Even getting people's passion up is not something that people typically do. Most scientists are not passionate. Most scientists are not connected to the natural world at all. We know about the natural world, but we're not connected to it at all. We're some of the worst ambassadors out there in connecting to the

natural world. In general that's a true statement.

People who work at natural history museums, especially big ones, are exactly the same. The talk about passion and enthusiasm and wonder or reverence, let alone spirituality, is something to which most scientists will respond, "No, I'm not going to go there."

- Scott Sampson
- They won't write about it, but they will talk about it. • Darcie Fohrman
- If you get them going, but they still don't feel comfortable building an exhibit about it. It's much easier to do carbon dioxide buildup, so I think that's part of the reason. • Scott Sampson

Using Visitor Input to Pinpoint the Focus and Push Content

- I was starting to let this go, the question about whether the focus is connection to nature or sustainability and stewardship because I actually think that's going to come from our visitors. Last night I went home and my fifteen-year-old son's assignment in American History was to compare the policies of Obama and McCain in about five areas. He went to their Web sites and had this chart comparing their two positions and then went to factcheck.org and checked on these. I'm looking at this thinking, he's fifteen years old! The kids have a better

Simple, Clear: You Are Part of It

- I also like a clear simple mission: save the birds, save the ocean, etc. Lindsay and I were talking about this earlier. We really want people who come here, no matter what gallery, to know that they are part of this community and humans are part of the environment, whether we like it or not. If we just look at you, as an individual human, when you enter the gallery you are part of it and everything else stems from that. • Amy Billstrom

Example of Visitors Pushing for Content/Input

- I have to admit I had a significant moment teaching eleven-year-olds in the gallery. We have a program of fifth graders in which we teach them to teach their peers. I had a group in the high alpine, teaching what I love, glaciation, talking about water storage in glaciers. Then I slipped in global climate change issues and California's water situation. They said, "Well what can we do to stop global warming?"

I was taken aback. I asked, "Where do you shop? Where do you buy groceries? When you go to do errands, tell your parents you want to walk or bike."

One of them said, "We live across the street from the grocery store," and I said, "Well you get credit! You're already doing it." • Amy Billstrom

understanding of all of this. His whole school is green now. They have read *An Inconvenient Truth*.

Now this is not every kid and this is not every Oakland urban youth, but I think if part of our co-creation and collaboration contribution comes from kids we will go right to that advocacy place. It won't be about us pushing the content, that content will be pushed at us.

So I kind of let it go a little bit. We can do connection to nature, which is our mission statement. What is memorable to me about our two-sentence mission statement is that it's about connecting community to California's culture and natural environment. If we live that mission in this gallery, I think sustainability will be there from our visitors. That's my sense. • Lori Fogarty

Bringing it Home: Connection to Place

- I have another story about the Lab of Ornithology. When I wrote the NSF proposal that gave us the funding to do our exhibits, the big idea that I focused on there was helping the public understand about birds and bird ecology because we are the Lab of Ornithology and we're an international center. I thought, I'm not going to say we're going to talk about the Lab of Ornithology because why would they give us \$2 million to do that? Or to talk about Sapsucker Woods because

it's just a small place.

Our evaluator was Beverly Serrell, whom I'm sure a lot of you know. One of the first things that she found in her front-end evaluation was that people didn't want to learn about birds and bird ecology. They wanted to learn about what the Lab of Ornithology is doing and what's there at Sapsucker Woods, especially if they'd traveled a long way to get to Sapsucker Woods. Now this museum may be different, you may not be a pilgrimage destination like we are there, but I found that pretty interesting.

We built a theater and we put several films into the theater. When I was doing the summative evaluation I had to force people to watch the films that I needed to evaluate because all they wanted to watch was a film on life at Sapsucker Woods, which wasn't even funded by the grant. I had to pretend that it was broken so that I could get people to watch the stuff that was funded so that I could look at the audience reaction.

I was on Sanibel Island in Florida last year, where I go every year in February and March. I went to the weekly lecture at the Audubon Society and there was a guy talking about diving and sharks. He had a lot of underwater photography and it was really amazing. He was showing us all of this shark footage, and then he told us where the footage had been taken. It was under the bridge that we all drove across every day. People said,



“There are sharks down there? Hey, we swim in that!” My son won’t go in the water any more, but other than that it was a really cool lecture. This is happening right here and we didn’t even know about it.

The point I’m trying to make is that I know you’re the Oakland Museum of California and I know that you are trying to interpret all of California, but if you really do have a strong, local, East Bay audience they probably want to know more about what’s right here and to try to connect to what’s right here.

I was talking to my wife on the phone last night and I was watching the Black-crowned Night-heron right outside, and she said, “There’s a Black-crowned Night-heron at the museum? Where’s the museum?” That’s pretty neat.

I agree that some of that advocacy probably will take care of itself if you can connect people to this area. If there are wood rats here, then do something with that wood rat exhibit. It has a pretty cute look on its face. It’s even carrying a branch. Do something with that and make people have empathy for wood rats if they lived here or if they used to until global climate change came along. Don’t put up exhibits about how much carbon dioxide there is in the San Francisco Bay Area because they know that already from everywhere else. Connect them with something that’s local here.

Then in terms of what can we do, it’s not

shopping at a certain store or driving less, it’s what we can do about this wood rat. I want more wood rats. The answer may be to drive less, but they’re not driving less for this abstract reason, they’re driving less because this poor, cute wood rat is going to die. I don’t know if they really are, there may be more wood rats with global warming, but you get the point that I’m trying to make. Bring it home. Focus it on home. Then I think that a lot of the visitor voices stuff and the evaluation comes from finding out what people connect with, what they’re going to connect with when they come here.

• Rick Bonney

- I want to echo what Rick said. I think the idea of teaching about place ties in directly with many of the other concepts we’ve been talking about, including sustainability. Sustainability, as we were talking about it earlier, is a place-based thing. If people are going to become sustainable they need to know about place. Moreover, there are books like *Place-Based Education* by Dave Sobel and others, and a lot of research now showing that the best education is focused on place, that it’s constructivist, that it’s interactive.

You could tie into all of these things, like the Center for Ecoliteracy in Berkeley and many other pioneering groups located in the Bay Area and the East Bay. You could link up with them and you could do a nature tour of Oakland. Most people don’t even think there’s much nature in Oakland. We were just look-



Connecting to nature right outside the door: the Black-crowned Night Heron

A Special, Welcoming Place

- I think this building was designed to be a special place and a welcoming place in this community, and the fears and problems in this neighborhood have put up fences to this being a special place. Maybe it would take a huge security staff dressed as greeters and welcomers to initiate this change, but you need to have this feel like a place people could just walk into and go to the garden. There are contacts and information and things out there, and you can look at Lake Merritt and learn something too, but I don't think this community connection can happen without that.

I think that's really bigger than some of these other things, like what people are going to do in the gallery. • Darcie Fohrman

ing at birds outside the museum last night and there's nature all over Oakland. You could tie that in and make that part of your mission—part of what the gallery does is just tie people directly into this place.

I think that teachers in elementary schools and high schools are often intimidated by this concept because they feel like they don't know enough about even their own place. The natural history museum can help them by providing materials, by providing curriculum, by making them feel more confident. So that can be a major focus of programs too, which can literally change the way that schools do what they do. • Scott Sampson

WELCOMING, HUMAN ATMOSPHERE

Open and Welcoming

- Another concern I have is that working at the Cal Academy on natural history exhibits there are lots of problems we've been dealing with. At the reception I went to last week, the thing that was so impressive and overrode the problems was the people, the greeters, the feeling that you belonged there, that you were welcome. There were people everywhere helping you do and know and see. When I walk around here the guards are always friendly. Unfortunately it's usually empty when I come. I think that's going to

change, but it won't change unless the gate is down.

What brought it home to me was dropping Barbara Henry home last night. There was this welcoming entrance to her little house, and she told a story about this little boy she found in the garden. • Darcie Fohrman

- This little boy who lives up the street is from Russia and he has adopted my garden as his special place. One day while I was sitting by my fountain he just came into the garden and started playing. I think he thought it was a park or something. He told me it was his special place that he comes to every day. Sometimes I'll go out and find that some rocks are arranged differently, and I enjoy it and like the fact that he considers it his special place. • Barbara Henry

The Human Connection

- I want to echo the idea that several people have brought up, including Darcie and Mary Jo. It's this idea of humans as interpreters for the natural world. I think that human connection when a visitor enters the gallery has so much impact that it can make or break the experience.

I have an anecdote that relates to that. When I was doing some work in the Art Gallery before it closed, I was here for *Days of the Dead* and this was one of my first times collecting data and trying to welcome people



into the gallery and get them to give me their data, so of course I was smiling and saying hello and so forth. Granted, there were a few who saw me with my clipboard and took the long route around me, but by and large, most people really wanted to engage. They wanted to ask questions, they wanted to offer me ideas, they wanted to tell me how long they'd been members. I didn't have enough paper to write down all of the information.

For me that was really powerful as a museum employee because I saw how important that human connection was. And maybe it was just me making eye contact and smiling, but that could have been the resonant experience for that visitor in the gallery, so I do think that kind of ambassador, person-to-person experience is really critical. • Rebekah Berkov

VISITOR ENGAGEMENT

Ongoing Engagement, Sense of Community

- Something that has always resonated with me in the years since I've been here is that many people who participate in our programs develop a deep relationship with the museum.

For example, in our artist-in-residence program there was a quilt artist who would just keep coming back on her own to visit. I

didn't directly ask why, but I was intrigued by this. I was able to ask her what it was about this contact, even though there was no program she was doing and she was just seeing some of us. She just felt such a part of this community. I don't know whether it was education or art or what it was that resonated with her, but that happens a lot. Some of the people who participate in the programs, the advisory councils have been engaged for ten years now. I think that is a given we have here and it is strong. People have a strong sense of community. • Amy Billstrom

Guided Input and Engagement

- I have a comment about the push/pull thing. I'm a pusher from way back. I'm old and I'm adapting. I used to take my installation shots without people in them. It's a struggle for me and in my recent exhibitions over the last ten years or so, I've made sure there's visitor-generated content or at least visitor contributions, even if it's just Post-its. In my experience, which granted is limited compared to what's happening on the Web and all, the most powerful visitor-generated contributions to exhibitions are when they come in response to direction from the museum: You ask a question, they've had some experience that serves as a catalyst for their contribution, and they know your opinion first. You say, "This is what I think, what do you think?"

Resonance and Wonder

- There is an article by Stephen Greenblatt that has really inspired me in the museum field. It's about resonance and wonder and the idea that those two feelings that have to be evoked when you go into an exhibit. For me, this is something that has shaped my experience in a gallery. It could be a visitor services person who says, "Hello, how are you?" or something along those lines. It could be the exhibit itself, it could be an animal that I recognize, it could be any number of things. • Rebekah Berkov

Back and Forth with Visitors at the OMC

- The art and history departments here have been doing some of this kind of work already. They did a prototype that involved putting comment books next to very provocative or troubling artworks. People made comments and then the curators responded to the comments and signed them as curators, so there was this very interesting dialogue that went on. • Kathleen McLean
- However, I would say that the response from curators could have gone deeper. Often the response from curators was something like, "Oh, it's great to see you all responding." The curators took the first step, but I think they could have taken the content further. • Barbara Henry
- There were a few where the curator responded and then the visitor comment that came back provided another petri dish with that back and forth quality that we want to get to. • Kathleen McLean
- And "argue with the curator" is really different than "ask the curator." • Nina Simon

I think that there's always some fear when I present these ideas in the planning process that the visitors are going to come in and just randomly suggest stuff that's not guided. I'm sure that can happen, but I think the most powerful stuff has direction. • Darcie Fohrman

Keeping the Exchange Going, Responding to Visitor Input

- I think what I haven't seen in these projects is the museum then responding and picking up on the visitor part of the conversation. Kevin VonAppen at the Ontario Science Center has this wonderful analogy: When museums want to invite visitors to talk they say, "Okay, here's how it's going to work. We're all going to talk for ten minutes, then

I'm going to leave and you guys can talk amongst yourselves." It's true that we are lousy dinner hosts in that we ask questions and care very little about the answers.

I think it would be great to see a project that really then said, what's the next thing after the visitors have had their powerful output? What's the next thing after that? • Nina Simon

- In the show we're doing we have a talk-back booth. Granted, it's going to be harvested by the museum, but we're putting powerful footage back into the exhibition and there will be this PBS show. • Darcie Fohrman



Cecilia Garibay, Nina Simon, Julie Johnson

Potential Design Scenarios

DESIGN GROUP ONE

Strategies for Understanding the Audience

Julie Johnson reporting

We spent most of the time focused on what the institution really understands about its current visitors and what are the kinds of questions that need to be asked in the next few months to get a better understanding of who comes, who doesn't come, and who almost comes. In the "almost comes" category are those who visit the Art and History Galleries but never make it to the Natural Science Gallery. Apparently that does happen.

The idea is to get a better feel for that so that whatever happens in the gallery or whatever processes or activities you implement, you're able to identify which group makes sense for which kind of processes. This gets back to the question of whether they are participating, contributing, or co-creating. The notion was, not everybody is going to do everything. How do you understand which levels of engagement might be important for which audiences, and what will work for whom?

We talked about possible ways for the institution to find out more about and engage this variety of groups, both those that you know and know you well and those that don't know you.

I mentioned that at the Science Museum, one of the things we've come to understand is that purely demographic information is not helpful



Group One Members

Kathleen McLean, Julie Johnson, Terry Gosliner, Douglas Long, Amy Billstrom

The Task for Small Design Charrette

- We are asking each of the small groups to work on the project design and this question of backcasting, knowing the following:
 - what we've got in the gallery;
 - that we really want to be more inclusive and that that is a very realistic thing to do given the track record of this museum;
 - that we want to do something that is really focused on the authentic process of visitor engagement or community engagement and prototyping ideas that come out of these dialogues with the community.

What might this project be? What do we need to be concerned about, aware of? How might we scope this project out? This is a design charrette that involves the conceptual design of the project instead of the design of an exhibition. We have staff and invited guests divided into three different groups. We are going to ask you to articulate what you think this NSF project could be. What could this NSF project look like given what you now know about the gallery?

The real goal of this exercise is to continue the conversation of getting grounded in terms of where this project should rest, given the continuum of things we have talked about today. What should we really focus on, and what could be some good examples of things we should do? Which groups should we really be focusing on? This is not a project in which they are going after everyone or trying to reach the most difficult—those who have not and have no desire to go to a museum. The idea is to reach those who might come if the museum reoriented itself, and who could benefit from coming.

• Kathleen McLean

- You just listed three things: NSF, gallery, and goals. Is each group going to take one of those or do we all have to swim in that whole ocean?
 - Scott Sampson
- If you decide you only want to tackle one of those you can, but I think you can't talk about any one of those without talking about the other two. They're really so interconnected.
 - Kathleen McLean

Tapping Science Museum of Minnesota Audience Research

- I made a note to remind us to get in touch with the Science Museum of Minnesota and with Julie. They have the summary of the report and the instrument they used (which is up on their Web site) so we don't need to reinvent the wheel. • Kathleen McLean

Terry Gosliner, Kathleen McLean, Amy Billstrom

to us in determining which groups to go after. In fact, it's more about identifying some of the commonalities across the groups. For example, we did a study last year that involved 600 intercepts, within the museum as well as focus groups in communities outside of the museum (those were the "who doesn't come"). Typically, our museum is 80% Caucasian, pretty high income, and what we were finding out was that there were some cluster profiles that more align people than separate them.

For example, people who spend time with their families on weekends are more likely to go to museums, and it doesn't matter if they're in the low-income group or the high-income group. If they're more inclined to do things with their families on weekends, then they're less inclined towards museum-going experiences. If they're families that tend to go to sporting events, by and large they do go to museums, and it does not matter if they are

low-income, middle-income or high-income.

It is those kinds of characteristics that we're trying to look at as opposed to just demographics. Some of that is predicated on work that is done in market research in companies that target specific groups, such as the group they affectionately call "soccer moms." It is a category of people. The way that those individuals tend to operate in the world that makes them more likely to do certain things, and it doesn't matter where they are socioeconomically.

What are other things you can find out about your audiences that help you look at similarities across strata? If you say you want to increase Latino participation, probably only a certain sector of the Latino population is going to include the ones you want to attract because it is where the energy expenditure will be easier. Unless you use different ways of looking at your audience you don't know if you're expending the right energy on the easiest, the low-hanging fruit, or not.

So our whole discussion was around different ways to look at understanding your audiences. Some of the strategies we discussed included:

- Intercepts at the museum,
- Focus groups,
- Open space sessions,
- Science cafes (there are a lot of coffee shops in Oakland),



- Going places where people are to engage them in some conversations.

As I said during the small group work, you're kind of embarking on "one thousand conversations." Yes, these are data collection, but all of these are conversations.

We also talked about some of the types of questions that you want to address as you engage people in these conversations. While you want to get to a value question such as, "Don't you think these dioramas are really important," that's not the question you start out with. You really need to look at object-level questions because the way we think involves processing data and information, reflecting on it, and then making interpretive judgments about it before we make a decision. That process may happen in a split second, but it's still a process that we go through.

If you're were going to do some walk-throughs with people, engaging them with the dioramas to get their feedback, you would want to structure the conversation so that when you get to the interpretive question they've actually reflected on some things in the gallery. You get a much richer answer than you would if you started out with the question, "How is this valuable to you?"

Q & A/Discussion

- Is it really a conversation or is it more asking questions? • Darcie Fohrman
- At the Science Museum there were two different things. First there was the survey and then there was this piece about taking people through the galleries. I was suggesting that that way of collecting data might be different from certain other pieces of survey material. • Julie Johnson
- It would really take a talented person to do that kind of conversation. • Darcie Fohrman
- Yes it would. • Julie Johnson
- We realized that because we have a very diverse audience we need to have a lot of different ways to talk to people, so it is doing the questions, maybe using the open space technique for a couple of day-long meetings, informal meetings with people in their own places, like parks and gardens, talking to people about why they are into that. We can experiment with different processes for different groups. • Kathleen McLean
- It's going to be a lot of work. It's going to be exciting. I would prefer to start everything from audience just to get direction and grounding in terms of what we work on. • Amy Billstrom
- The question I had as we discussed this was, what is the audience? If we are the Oakland Museum of California, how far away from the

Structuring the NSF Proposal

- We thought once you understand your audiences better, maybe part of the NSF proposal is to help you test out some things. If, in fact, you have the money to do the exhibitions, what do the NSF grant funds provide you the opportunity to do that's unique? But you can't do a lot of that unless you really understand your audiences. • Julie Johnson
- That relates to what Mary said earlier about doing some small experiments in the gallery. • Kathleen McLean



Group One: Julie Johnson, Douglas Long

Group Two Members

*Mary Jo Sutton, Nina Simon, Cecilia Garibay,
Scott Sampson, Lindsay Dixon*



epicenter do we go? Do we try to contact audiences that live in some of these areas, such as people who live in the desert areas or up in Tahoe, or do we just want to look at the local community? And if we do decide on the local community, what are the ways in which we reach them? It's easy to reach those members of the community who are museum goers, but those members of the community who don't come to the museum are going to be very difficult to reach. That's going to be a whole other avenue of discussion. What is our audience? How do we reach them? And then, of course, there are all of the subsequent questions regarding how we co-create and work with them, both in the short term and for the long term. • Douglas Long

DESIGN GROUP TWO

Challenges and Approaches

Scott Sampson reporting

Challenges: Audience, Balancing Sustainability and Co-Creation, Dioramas

We started out stumbling a lot over audience because we felt we didn't really have a defined audience and that was difficult for us to go beyond because we didn't have a lot of parameters to nail this down. Then we stumbled because we felt there was almost a conundrum. On the one hand we want to co-create with the community, and on the other hand we have this mission about sustainability and

stewardship, so how do you do that? Another parameter that is a constraint involves the objects that we have, the dioramas. With those three things, how do you even begin to do the kind of project that's been asked of us here? How do you co-create with these constraints?

Connecting to Nature in Immersive Environments

At first I think we were despairing that this wasn't going to be possible. Then we had what I think was a breakthrough that came up this morning in some of the conversation, and the breakthrough was connection to nature. On the one hand we think that the dioramas could be used to reflect, as they do now in some ways, the biomes or communities around California. Maybe you want to narrow it down and instead of the twenty-six or so that are in there now, you do four or five and you do them really well.

Maybe you do some of them immersively and you have more walls and create resonance-types of experiences in there with that kind of content. That is then about the sustainability of these places and you are the Museum of California, so you can still reflect that. That could then be tied in with some of these issues we talked about like global warming and so on. That's where your science content is, with connections.

Collecting Personal Stories for the Human Connection

The inspiring part for us was this concept of

not trying to bite off the whole thing and get everybody to start living sustainably. Instead, let's start at the base of this and work on connecting people with nature, and maybe particularly with kids. One way of doing that is to go out and ask the public. Basically it would involve a program in the Oakland area in which you go out to the general public and ask them what are the things that connect them with nature, so you are getting local stories coming in. Maybe you have a contest with that every year.

Beyond that, you can go to communities around California, talk to people who live in these places that you're representing, and have them talk about experiences they've had in those places that are resonant with them and connect them with nature. Now you're injecting this human element, this very strong human element.

Crossovers to Art and History

Maybe you can also tie it back into art and history. There could be a contest every year for which they do paintings or poetry or nature writing or journaling about places that show their connection with nature. I don't know if you'd split these things up by place or whatever, you could decide all of that, but it would be a way of this museum reaching out to the local community and to communities around the state and tying it all back into this connection with nature and linking in art and history as well.

Elaborations

Crafting Questions at Various Levels

- One of the things we talked about was that the question, "Tell us a story about your connection with nature" is a hard question and the need to ask people different questions related to where a person is at. For example, "Have you ever been to a party in a park?" Questions would range from those more around general social experiences and the outdoors to much more sophisticated questions so that you can work with people at their level. It would involve really experimenting with questions that make people feel comfortable and make them feel like they're in a safe spot. • Nina Simon

Going Beyond the Standard Evaluation Paradigm

- Another thing we talked about was the visitor evaluation paradigm. I expressed discomfort that it was easy for us to slip into saying, "Let's do an evaluation about this," or "Let's test this." We sort of got stuck there to some extent in feeling like how we do this kind of project is by evaluating what people want and then we deliver on that in some way. We talked a little about how we could get past the standard model

Including Evolution

You could also talk about evolution. Douglas and I talked briefly earlier about the possibility of doing evolution and talking about the history of California as well. I think it would be difficult to start mounting mammoths and dinosaurs and things like that in there, but you could put some things in there and still talk about the amazing history of the place that leads up to it, and we think that would be important as well. • Scott Sampson

Group Two



Identifying Beginning Points

- I felt coming around to the beginning points was really critical for us. Focusing on what the true strengths of the gallery might be is the place to start. It was a relief to get to that point—the beginning. • Lindsay Dixon

Defining Co-Creation

- We also talked a lot about, what is co-creation? We need to define that. The research piece could be, here are the six or seven kinds of co-creation on the spectrum, and which are most effective and why they're most effective. That could be one of the focuses of the grant itself. • Mary Jo Sutton

regarding how to do this. • Nina Simon

A Phased Process and Leveraging Resources

- We also talked a lot about a phased process. You have to think about this in phases of a project. Maybe there's this early piece about what it means to work with communities and you deepen that. We started with the idea that if you're thinking about your NSF proposal you need to think about who your audience is, and we never really got back to that. We all agreed that you need to better determine that.

In addition to thinking about this in terms of phases, you also need to think about what you can already leverage. There are your community advisory councils for example. Right now they're a mystery to me because I don't feel like we know how you'll tap into those for this project. I think you have such a good starting point that the first phase may not be about reinventing processes, it may be leveraging what you already have.

• Cecilia Garibay

An Evolving Space as a Bridge to Nature

- We asked ourselves how the space relates to this potential conversation regarding co-creation. One idea was that maybe the space could open half-full, with the assumption that it will continue to develop as we try to think of the museum as this home base: Come here and learn about nature in Califor-

nia. The museum is a meeting place. It's not just a museum, it's a bridge. • Mary Jo Sutton

The Relief and Creative Stimulus in Starting with the Connection to Nature

- I came into the group just as it was making its breakthrough, talking about the connection to nature. Scott was reminding us about E.O. Wilson's biophilia hypothesis. It was palpable, I could feel it in the group, that sense of relief in being able to move on. Instead of asking how we do sustainability it was backcasting to, how do we start? Once we talked about the connection to nature it became a really free conversation and I could see the creativity beginning from there.

• Mary Marcussen

Emphasizing California as a Hot Spot and Creating a Community of Biophilics

- To wrap up from my perspective, I think the knowledge side of it is focused on the hot spot idea. This is the Museum of California and California is this amazing global hot spot, and most people who live here don't even know that. That's worthy of being hyped and you have the collection with which to hype it. That's on the knowledge side. On the experiential side you have this idea of biophilia, love of nature, connecting people back to nature. Let's try and create a community of biophilics • Scott Sampson

DESIGN GROUP THREE

Tapping Staff Knowledge and Existing Resources/Connections

- What we focused on was how to write the NSF proposal, which may or may not be useful. For me the most interesting part of it was listening to Christopher and Carson. I really welcomed the opportunity to get their input regarding what was happening here, so my suggestion is to put them on the spot and have them tell you what happened in our group because a lot of this is really going to hinge on the interest and desire from the staff to carry this through. • Rick Bonney
- I was picking up from Christopher and Carson a sense of energy around things like the heron out over the koi pond and the local environmental groups and some of the projects that Christopher was talking about. It's just thinking in terms of going where the energy already is. We had an animated conversation about what was going on in the koi pond out there and subsequent conversations about how to break down the outside-inside barriers here and how whatever goes on inside can take advantage of that. • Wendy Pollock
- Using what resources we already have, using the connections we already have to the community, how can we tap that? There are lots of groups that work with the museum. How can we talk to them and what information can we get out of them? • Carson Bell

Overview

Darcie Fohrman reporting

Levels of Co-Creation

We got hung up with the co-design issue, attempting to define co-creation, so that took up some time. My experience with it is limited so I was bringing that to it, where you pay them and work with them intensely. That led us to the different levels of contributing, collaborating and co-creating that Rick brought to the table earlier, which I thought was a great way of looking at it so that it's not just all one thing.

The Koi Story

What we heard from the staff about what's going on in the koi pond outside is more interesting than anything I saw in the gallery. • Overheard at dinner

Group Three Members

Darcie Fohrman, Rick Bonney, Wendy Pollock, Christopher Richard, Carson Bell

sustainability is good



Outcome

The outcome or goal is to come up with a plan that resonates with the community.



Carson Bell, Wendy Pollock, Rick Bonney

Sustainability

Of course we want people to connect with nature, and maybe that is something possible to do. Our statement, “sustainability is good,” just means the museum is taking a stand on that. It’s not just connecting to nature, it’s that there’s a reason to connect to it. We didn’t talk about what that meant and that is one thing I came away with, the idea that we need to define sustainability because that is also something that means something different to everybody.

Ongoing Community Input

We thought it was important to get community input during the planning process and ongoing. It can’t be gratuitous, it has to be something that is maintained, and your greater community family keeps building. We also talked about how to engage them meaningfully, and talked about the conversations as a tool and as an end result.

Evaluation, Informing the Field

Rick came up with some wording: “Develop an evaluation model for professionals—how to plan an exhibition about sustainability with community partners using existing infrastructure.” In addition to informing the field, this would measure the success of the project as well.

Starting Point: Advisory Groups

I start wondering how all of this is going to happen and I get to the practical too soon. In

terms of step one, based on what Christopher said, you have these four advisory groups that are so committed to this museum that maybe you could just start there and find out where the people interested in natural science are in those advisory groups. So you could build on those.

What I drew from our conversation includes the idea that you should have your first conversations with the individual advisory groups. Get all of the science/nature/sustainability inclined people into a room and have a cross-ethnic group conversation and see where the common goals are across those groups. Then get the key informants from their communities brought in. Those recommended key informants from various ethnic groups who are already involved in organizations related to the environment and nature could suggest the teachers and students and other people who might not even know about the museum. It seems like there could be a trickle-down that would be very practical so that you’re not starting too broad. I just see these time and money challenges and that would be a way to focus.

Added Comments, Discussion

Using Existing/New Advisory Councils

- Barbara, do you think starting with the advisory groups is a workable suggestion?
- Kathleen McLean



- Yes, we do this now and have the groups come together for dialogues around different topics. Years ago when there was discussion about the natural sciences here, one of the topics that came up across councils was, will you deal with medicinal plants? Or there was the idea of folk tales, such as a traditional story about a humming bird, stories I was told as a child, and then relating those to the gallery. So I think that would definitely be helpful. • Barbara Henry
- I suggested that we start an additional advisory council on sustainability, whose affinity is that they're involved with sustainability issues. • Christopher Richard
- Those of us who don't work here were wondering whether there was a science advisory group also for this gallery. • Wendy Pollock
- There isn't, and we should have one. • Christopher Richard
- We've definitely talked about that in terms of the NSF grant, that there would be a science advisory group. • Wendy Pollock
- A close friend of mine in Monterey happens to be the Associate Director of the Nature Conservancy for California and she was the Conservation Advisor. It's a different perspective and I get a lot of my advocacy from that perspective, from the Nature Conservancy. It's different than dealing with the

public, but I think there's so many people in the Bay Area and from Stanford, and they should be involved in this before you eliminate the sustainability issue completely.

- Darcie Fohrman

GROUP DISCUSSION: INFORMING THE FIELD

Evaluating and Testing Models

Experimentation with Co-Creation in a Way that Informs and Illuminates

- Rick described a project that he's recently been involved with that is working on a framework for evaluation. Two projects were evaluated in the course of it as an actual, concrete outcome, so they themselves as an organization got something accomplished and ended up with a product. But the way they did it was to be thoroughly self-aware and self-examining and to thoroughly document the tools and techniques they used to devise the framework for the evaluation, conducting the evaluation in a completely transparent manner. At the end of the whole thing they had a framework for evaluation using these two very concrete examples, with all of these tools and techniques that could be shared with the field.

He was suggesting this as a possible way of looking at attempting to experiment with co-creation, and now we've got these three levels (also suggested by Rick) of contribut-

Keeping Sustainability on the Table

- I wouldn't say we should eliminate sustainability either, and some of the earlier conversations we had about this have been very much based in recognition of the Bay Area as its own hot spot of sustainability. There's a lot of activity here. • Mary Jo Sutton

Example: CLO Proposal

- That was beautifully stated, but a clarification: That is a proposal that is pending. It's about developing an evaluation framework for community science or public participation in research, so it's a way of getting NSF funding to do something that needs to be done, which is develop this framework, but also get my projects evaluated at the same time. But I have to warn that it hasn't been funded yet.
 - Rick Bonney

ing, collaborating and co-creating. As we've said, everybody is grappling with how we're defining it, what it means and the different levels involved. You could hone in and be very specific about the idea that you're conducting these one or two experiments with co-creation with this intended outcome, include a definition of the different levels of co-creation you are utilizing, and focus on how a museum with traditional dioramas co-creates with the public. Throughout, you can be very conscious of your documentation and your process and the tools you're using so that you can share that with the professional community. I thought that was a great idea.

- Catherine McEver

Process Documentation versus Rigorous Research and Evaluation

- I think you have to be careful of the idea of documenting process versus actually having a rigorous research and evaluation design, and they're two slightly different things. I think you have to document process regardless because it's an interesting experiment and that's useful, particularly to practitioners, to understand at some level how it is that you undertake something like this.

But I think if you're talking about research and evaluation design, that's slightly different. I think you have to come up with some sort of understanding early on of what the theory of change is or whatever the underpinning is, what your assumptions are, and

really develop something based around that issue. • Cecilia Garibay

Testing Co-Creation Models

- In our group part of what we talked about was, is there a model you use where you actually test out different ideas of what it means to co-create or to co-design and really have almost these different treatments and try out and understand and evaluate what each of these give you, what the experience is like, what the outcomes are, so you're really creating different models. But that would be much more in a rigorous evaluation sense than documenting process. • Cecilia Garibay

The Need for How-To Info and Resources

- But it's a little bit more than what you just said. My frustration is that as a practitioner in this field it's really hard to find something that says, "Here's how to do it." That's partly because there's no one right way to do things. That's one of the reasons why the Web site for the Exhibit Files project exists. It's an attempt to give people a how-to-do-this, how to develop exhibits. That's what our Citizen Science online Web site is about—here's how you develop a Citizen Science project. I know that it has been welcomed by the field. People are using it and are so grateful for it because the references are there, the database of projects is there, and there's step one, step two—it's all right there.



I have a huge frustration that there isn't more of that in this field. I'm on an advisory board right now helping to create a practitioner's guide for the field. It's a joke so far in terms of being able to actually use it to do anything. It has tips for practitioners in it, but it's useless. Everyone in this room knows every one of them. It doesn't go deep enough.

What I was trying to get at here was to create something that could be used by other institutions. There's a balancing act. You want to focus it down, which is what Mary was trying to do earlier, describing different ways we could approach this proposal, and then Julie said it's too big, you've got to focus on something. What I was trying to do was focus on something that would really be useful and doable, but the trick for an NSF proposal is that it has to be narrow enough to be doable and broad enough to really be useful to enough of the field so that NSF will find value in funding it. • Rick Bonney

- So why wouldn't testing out different models be useful to the field? • Cecilia Garibay
- I didn't say at all that it wouldn't, but what I was going to point out was that if my proposal gets funded, what happens when it gets done is that there will be a lot of stuff there that you can actually go and use. There will be survey instruments that you can customize, there will be strategies that you can borrow for your own evaluations and that sort of thing. • Rick Bonney

- So it's more than documenting the process. I think we're maybe talking about two different things. I was addressing more the aspect of what the project does and you were thinking more about the professional development for the field that you would get. We've had this discussion before because I'm an advisor on that proposal, but we have a somewhat philosophical issue around how much you can actually have cookie cutter evaluative tools. I'm not saying there isn't some value there. Certainly in psychology, for example, you have an array of different assessments you can use, so it's not that. It's just that you have to be really careful about what that balance looks like. • Cecilia Garibay
- In the *Are We There Yet?* book we say, you may want that but we're not going to give it to you because you have to do a little extra work. You can't just take a checklist or cookie cutter thing and think you've done enough homework to do a good job. • Kathleen McLean

Design Pattern Library Model

- One model I've seen that I think could be an extremely useful thing you could do for the field is a design pattern library model. Yahoo does these design patterns for user experience. For example, they have a whole set for participation online. How it works is, you go there and you want to know about ratings. They have a design pattern around how rat-

The Practitioner's Need: Something Useful

- It's an important push and pull here because I hear what Cecilia and Kirsten Ellenbogen, who was another one of my advisors, are saying, but I'm sorry, as a practitioner I need something. Give me something I can use. • Rick Bonney



Rick Bonney



Nina Simon

ings impact the use of different kinds of sites, whether it's a shopping site like Amazon or another type of site. They're very simple, they're one page, and they always have bullets about, "Here are the things ratings support and here are the things ratings prevent from happening."

I think that my frustration is that the *Visitor Voices* book is a great starting point in terms of seeing case studies, but there has been very little evaluative work done, such that somebody could say, "Oh, if I want this kind of participation, I should look at this kind of pattern." I'm not giving you a specific evaluation tool, I'm giving you a vocabulary. Here are the different ways that this could apply, you can mix and match. You could say, these things align with my goals so I'm going to apply these patterns and I'm going to look at all of these examples. • Nina Simon

- I love that term, "design pattern library," because that's what we were referring to when we talked about testing out different treatments and seeing the outcomes. • Cecilia Garibay

Open, Collaborative Experimentation with Other Museums

- In support of the transparency goals that you have overall, I would love to see you setting up an experiment set that is open. You could invite other museums to go along with you on an eight week adventure in which there's a

different experiment going on every week and it's documented on a wiki so that people can post what they got, and everybody can feel like they're supported by other people doing this wacky thing at the same time. I feel that kind of thing could be of huge value in terms of a collaborative element with others in the field. • Nina Simon

- A couple of places, like The Field Museum and the American Museum of Natural History, are really interested in that kind of thing because everybody knows they've got to think differently about this stuff but they don't know how to get started. Having a project where there might be some collaborative effort may do that. • Kathleen McLean
- Or maybe there's a month where the expectation is, each week each museum signs on for the equivalent of ten hours of an experiment and there's a sharing hour at the end of each week. I think it could be pretty low impact and you would be serving them a lot of content that they could just start playing with. • Nina Simon

Concerns, Advice, Final Thoughts

STAFF CONCERNS/QUESTIONS

Process versus Product

Which Drives the Project?

- The other big thing that is troubling me is the process focus versus the product focus. That's where a lot of the ambiguity comes up. Are we doing this component here because we are really focused and driven by what that product is going to be and we will do whatever it takes to get to that product, or are we being driven in this component because we have an idea of a process that we want to run, so this one is going to go wherever the heck the process takes us?
• Christopher Richard

Clarity re Parallel Journeys

- I wonder if you might allow yourselves to take a parallel journey for a while so that in fact you look at both simultaneously. I think there are intersections between the process that you're going through right now to get to a product or series of products—one is the grant proposal, one is the curriculum. You may need to do this sort of back-and-forth piece to finally come to where they intersect so that you can say, "Okay, for this particular path we're going with a product and for this one we're doing a process," and you may

end up doing both. It may be a little early to decide either/or, but that doesn't mean you can't be really mindful that, okay, right now we're talking about process and we're going to come back to product. You may have to be a little schizophrenic for a bit, but just be really clear in your schizophrenia: Today we're doing process, tomorrow we're talking about product. And then reflect at periods of time and come back to it. I think it might be a little early for you to say it's one or the other. • Julie Johnson

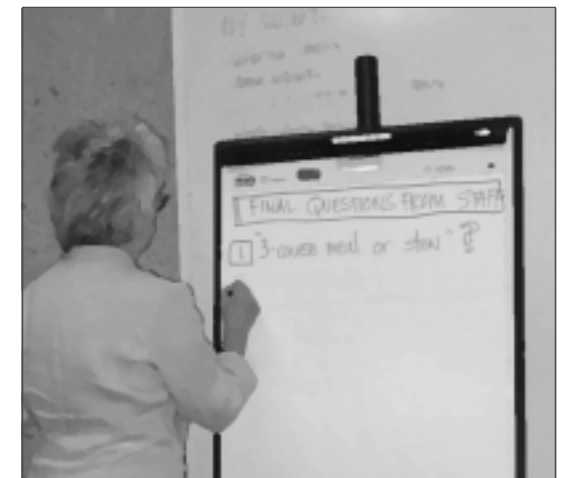
Chunks and Phases Along a Continuum

- One of the things I've done is sketch out the four big chunks of this project. One is the visitor conversations and the visitor research, and understanding who our visitors are and talking to as many visitors and non-visitor groups as we can. Then there's the design and fabrication part of the exhibit. Then there are the community partnerships, which I see as related to but a little different from the visitor conversations. We've talked about possibly partnering with environmental organizations, as Wendy was saying. Maybe we're showcasing their work in the galleries that relates to a specific habitat, or maybe we're inviting their members to be part of a program that is happening. And then the last part is research and evaluation.

Pressing Questions

- What are the pressing questions that the staff has at this point, given that we've been together for some time and they've heard our thoughts. It would be nice to know what's on the top of their minds, and that could focus our conversation. • Cecilia Garibay

Kathleen McLean



The way I'm envisioning it is phase one, phase two, and phase three, and we're doing different things in each of these categories in these different phases. I feel the need to approach this in a very practical-minded way also, and we do have to deliver an exhibition on a budget and on a schedule. But what that looks like and how it is continually fed and enlivened and how it incorporates visitor engagement is part of the ongoing development. In terms of visitor co-creation,

collaboration and contribution, it's not like we're going to gather all of that and pump it out at the end into the exhibit. That is going to be an ongoing process.

So one thing that I think would be helpful is if we look at this in different stages along this continuum. • Lori Fogarty

- And you may, in order to enable you to be sane in your schizophrenia, have some visual that helps you know: Today we're here. It can be in a place where people can periodically go to see, okay, we're still there. Some way to help you keep track of where you are would be really important so that you're not trying to carry it all in your head. • Julie Johnson

Are We Saving the World or Just California?

- Are we saving the world, or just California? What's our goal? • Anon
- I'm intrigued by this question. I would say that you can't save the world without saving California, and you can't save California without saving Oakland, so it really comes down to: You've got to start where you are. That reminds me of a couple of things. One, my favorite book is Stephen Covey's *The 7 Habits of Highly Effective People*, which you should all read if you haven't. One of the things he talks about in there is the sphere of influence. Everybody has a sphere of influence and for some people it's very small—it might be a couple of friends or family—and for some people it's very large, such as an elected official over a large area. But it is as big as it is and it can get bigger or smaller. The only way for it to get bigger is to do something. If you do something, then people notice it and it

gets bigger. That really works. I didn't even know I was starting a Citizen Science program when I began, I just had an idea. I wrote a proposal to try something out. And now it has gotten pretty big and we can document it and it is fairly successful. But it just started out with trying to do something, to do one thing. You don't have the option of doing one thing because you have to recreate a gallery, but you certainly have the option of saying you're going to try to do something new and just try to figure out the starting place. Keep the big picture in mind, but without getting swallowed by that big picture. Just ask, where do we go from here? Then look around and say, okay, where do we go from here? I have this sense that maybe we're all being a little overwhelmed by how big this is, without just trying to think of a couple of steps to take along the way. • Rick Bonney

An Institutional Paradigm Shift

- As someone who is coming in fresh to this, it seems to me that part of what is happening here is that this is really about a paradigm shift in terms of the way you develop exhibitions, the way you engage with audiences, and in terms of where you go as an institution. I think that's really important to keep in mind because why is it not possible to do both process and product? We think about it as either/or because that's the way we've been wired to think about it. So you might think about the fact that you are engaging in a conceptually different shift for the entire organization, and that really has to inform what you're doing. • Cecilia Garibay



Defining the New Product (the Gallery) and Creating a Process to Get You There

- I'd like to speak briefly to the process or product focus because this is a sore spot for me sometimes. The reality is that of course there's a product focus and it's the gallery. I think that you had a traditional process that was going to lead you to a traditional product. You decided that in some way that product was not right for you, so you said, you know what, we're going to put this aside and find a new way. If you think about separating stages, I think defining what the new product is will help you in feeling confident that you are creating a process that's going to lead you there. I think you may need to use visitors to get to that new product concept, but having that there is really going to help.

My example is when I was working on *Operation Spy* for the Spy Museum. It was going to be a pretty different kind of museum experience. It's a narrative, game, hour-long experience with choices. There were a lot of new process things that I did in doing the development for that. I always felt confident, even though they were weird from an exhibit design standpoint, that they made a lot of sense given where I was trying to get. I knew, for example, that a plot twist in which visitors felt like they were on top of it and could have the "Aha" moment was important, so I learned about plot twists and figured out ways to experiment with plot twists, which is something I wouldn't usually do in the ex-

hibit design process. But I had to start knowing that I wanted a plot twist to come up with the process by which to get it, even though it was a new process.

So I think there are two stages to this project and the first stage is defining, with your audiences, what the vision is for that product, and then what processes are going to get you there. And if it's a dynamic product, that's great, but that's not a process, that's a dynamic product, and that's something I think you're shooting for. • Nina Simon

Documenting the Process and Sharing it with Others as Part of the Proposal

- I agree with Nina when she said she thought this product/process question was a little bit bogus. For me, you can't have a product without a process, and if you have a process you're going to have a product. What I was trying to get at yesterday was a strategy for writing an NSF proposal because really, that's what I do, I write NSF proposals. And not to belittle writing NSF proposals or NSF, but it's a game. Writing proposals is a game, it's a fun game, and I love it. What I'm trying to get at here is that

Design as the Connector/Facilitator

- I've been thinking that one of the connections between process and product is in the design. One of the challenges is, how does the design facilitate all of those other things you want to do? Maybe that's a way to think about connecting them. In what way can whatever gets built facilitate these relationships with those community partners or facilitate ongoing conversation? • Wendy Pollock

Rick Bonney, Nina Simon, Mary Marcussen



Goals: How Does the Community Define Success? What Are Staff and Organizational Goals?

- Julie has already touched on this and we talked about it yesterday quite a bit. Beyond the organizational outcomes you need to detail, you might want to not just think about these goals as long term, but about two other things as well. How do the communities you serve articulate success? It might not be the way you are envisioning it. So you might think about your outcomes and goals from that a community perspective and how they see success.

I think the other piece is to think about what your outcomes are for staff and for organizations, and I'll give an example. Working with the Vietnamese audience development initiative at the San Jose Discovery Museum, they had goals that looked very much like yours—a 20% increase in Vietnamese audiences and so forth. As we were looking through the evaluation piece and really examining that, we found that no, they haven't achieved that and it was clear that it was an unrealistic goal. But one of the key pieces is that they as individuals and staff have deepened their understanding of that community so much, and have created these relationships they hadn't had, and had done X, Y, Z things. I consider those measures of success that were just never captured. Those are the kinds of things you might want to look at. • Cecilia Garibay

this is a paradigm shift. There's absolutely no question that this is a paradigm shift. The world is not the same place it was when those dioramas were created. It's a different place now and they may be relevant or they may not be relevant, and you're trying to think of a way to make all of this relevant.

All I'm saying is that as you work towards what that new product is, lots of museums want to do that. You want to document it, you want to build a toolkit, you want to have a publication or Web site: Here's how we did it; you can do it too. For me it's all part of the proposal writing game. And that's "game" with a small "g." It's a positive game like chess, it's not a manipulative game like politics. • Rick Bonney

How Can We Assure Wide, Diverse Ethnic Representation?

Distinct Audiences Within Ethnic Groups

- I have many, many questions, but one of the ones that really got to me was from the discussion that we had in our group with Julie Johnson. The Oakland Museum has always talked about reaching out to under-represented ethnic groups, and Julie said that demographics may not mean as much as you think.

One of the things I was thinking about, and I hope I'm wrong, is that the Oakland Museum looks at ethnic groups as being homogeneous. If we look at the Latino community,

the urban Latino community in Oakland is probably going to have very different outlooks than the Latino community in Watsonville, which is going to be more rural. When we talk about the Asian community, really we mean Chinese, when in fact in Oakland you have huge numbers of Lao, Thai, Vietnamese, Cambodian, and even a huge expat Burmese community. If you look at Berkeley or Newark, we have large Pakistani and Indian communities, but we don't think of those so much as Asian.

I'm really concerned about the inclusiveness. If we really are reaching out to these groups, I'm worried about narrowing them down into what we think they are, rather than the diversity they represent. • Douglas Long

- As an outsider I would say that I think your education staff and the work they've done with your advisory councils do not narrow them down to those big groups. They're very, very broad and probably a good model for the rest of the field. You guys [Natural Science] haven't interacted with them that much to see the kind of work that they're doing. Given that, what's the question? If, in fact, they are not addressing the groups in the way that concerns you, what's the question? • Kathleen McLean
- I guess the question is, how can we assure that we really have a wide, diverse representation? • Douglas Long

An Institution-Wide Issue

- This is the one question that is not the sole responsibility of the natural history collection, it is an institutional question. I just want to remind everybody that while there are definite things that you will try to do to engage people specifically and understand their perspectives for the Natural Science Gallery, I would also imagine this is something the Art and History Galleries and your whole institution are thinking about. As an institution, how are you going to approach this? And in this particular effort we're undergoing around the natural history collection, how can we be mindful of understanding the nuances of those checkbox categories? Because you're right, just saying "Asian" is not enough to understand the depth and diversity within that one group of people.

The other thing is something I said last night. Achieving diversity will not be resolved when you open this particular exhibit, and it won't be resolved three years after you open this exhibit. That's why I'm a little concerned about one of your goals, though you didn't put a timeline on it. It's the thing you never totally achieve, and I think you need to understand that. It is the thing that you work towards and it is a moving target.

Something that would be really important is spending time not just within Natural Science but with your entire institution thinking

about the path that you are on. • Julie Johnson

Use of Buzz Words

Need for Clarity and Shared Definitions

- One of the things that was really bugging me was the use of buzz words like "sustainability." I kept track and it was mentioned twenty-seven times this morning and over fifty times yesterday without a single definition of what "sustainability" means or more importantly, how it can be applied to our gallery. A community garden might be an example of sustainability, but it really has nothing to do with California biodiversity per se. • Douglas Long
- It doesn't? • Kathleen McLean
- I would say no. It has a lot to do with getting people interested in maybe gardening. You could get them to use native species of plants. It's a tenuous link. But to get back to the point, what I would like are definitions. We've talked about co-creation and it seems to be pretty unanimous that nobody really knows what co-creation really means and that there are a lot of interpretations about what it might mean, how it might work, and what approaches might be used. I'm sort of a nuts-and-bolts guy. I would like to know specifically what words we are using for what approaches we need to take. • Douglas Long



Diversity:

An Internal Learning Process

- In terms of diversity specifically for this engagement, I could talk for a long time about how you might do that in terms of very specific, concrete steps. I think the important nugget is that you have to start some place, and there are places where you can already do that, such as your community advisory boards. But it has to start with an internal piece. I would challenge you that each of you should be able to tell me a whole lot about your community and what that looks like. Not only in terms of ethnicity, but in terms of families, in terms of the kinds of recreational activities that people do, in terms of what you see as the major issues that Oakland is facing.

It's going to be a learning process. Part of reaching diversity, ultimately, is how you as an institution are learning that so you can then begin to focus: What does it mean to serve this particular community? How do you even define community? And so forth. • Cecilia Garibay

Definitions and Intentionality

- Looking at the definition question, the process you're embarking on is really one of intentionality. If you can think about being really clear about what your intent is, a lot of this can be answered through this process. It's similar to your mission. You have to be so clear about it and you have to really understand what is your intent and your process. Is it really ultimately about engaging the community? Is it about how you position the museum within Oakland and the larger California area? I think you have to be really intentional in what you're doing because that will help clarify your definitions.
 - Cecilia Garibay

Defining Sustainability

- Definitions are something that people don't like to deal with. Very quickly, because we've been talking about sustainability so much, the definition that most people use comes from something called the "Bruntland Report." It goes something like: meeting present needs without limiting the ability of future generations to meet their needs. I like to think of it more simply as living within earth's limits or living within the limits of the place, however you define it. Banks talk about being sustainable in the long term. Obviously that's a very different kind of economic sustainability. That's not the type of sustainability we're talking about.

One of the key aspects of the sustainability we are talking about is that it is not a product, it's not an end point, it's not a place that you get to. It is a process. So getting to the process/product question, clearly an exhibit is a product and you are going to create this product. There will be aspects of it that might have processes in it, but you still need to create this thing that you open to the public. But the institutional goals that you're talking about are process-related. Just as Julie was saying in terms of diversity, sustainability is an ongoing thing. You never get there, you just keep working at it.

- Scott Sampson

The Concept of Stewardship

- With regard to stewardship, that's a really complicated thing. I don't have an easy, off-the-cuff answer. All I would say is that we need to be very careful with that. It's too easy these days for people to say, we're going to take care of nature and make sure that we keep these nice little pockets and they're going to keep on going ad infinitum. Well you know that's just not possible. You can go outside and pick up a handful of dirt and there's not a biologist on the planet who can tell you how the ecosystem works in that handful of dirt, let alone an ecosystem anywhere on the planet. So for us to say we're going to run things is completely mistaken. We have no ability to do that.

What we can do is two things. Step back and let nature do its own thing because it's got four billion years of wisdom built into it. The other thing is a really amazing movement the museum might think about learning about or tapping into, and it's called the biomimicry movement. It's this ability to learn from the lessons of nature that have been carved out over all of these millions of years of evolution and put them to work today; to understand how ecosystems work and apply them to cultural systems, human systems, industrial systems, etc. I think those are two things that relate to the concept of stewardship. • Scott Sampson

How Do We Present Depressing Stuff (Without Being Depressing)

Avoiding a Bummer

- How do we present climate change, habitat loss, and extinction without being depressing? I don't want to go to an exhibit of a natural place that has garbage in it or trash that's been dredged up. I don't want to go there and I don't want to look at it. • Gail Binder

Empowering Visitors to Do Little Things as Part of a Larger Movement

- I'll speak to how to present global warming and climate change without being depressing because this is something I've been working on at the Monterey Bay Aquarium with several exhibits that will open in 2010. We've recognized that there is a positive, uplifting message in the cumulative impact of many people coming together. This means in some way demonstrating with an exhibition that not only does your little thing make a difference, it's in a whole pool of other people doing little things and that has some real power, along with some examples of how some groups have done that. That's what we're banking on to do this.

I would say that one of the interesting parts of that process has been that we heard that question most clearly from people on the marketing side of that museum. They felt like it was acceptable to challenge visitors in certain ways, but not to make them feel un-

comfortable for their existence in any way. That sounds obvious in terms of respecting people but, for example, we talked about whether we could have a carbon calculation of how much energy you expend if you come to the aquarium that day. Then we thought, oh, we don't really want to add that additional cost to coming here. But there it's really focused on the positive aspects of people coming together. • Nina Simon

- So you're saying the little things you do can make a difference and then success stories. • Gail Binder
- And creating ways for people to identify that they are part of a community of people doing little things. So if you make a commitment in the gallery to doing a little thing, you really see yourself as part of this larger group. • Nina Simon

Solace: Doing Good Work in Your Own Community

- One thing I think you've got to acknowledge is that it is depressing. You can't pretend it's not. • Wendy Pollock
- I think everybody knows that already. • Gail Binder
- Yes, but how you do it is the art of that, and what solace do you provide? When people talk about reaching out to the community, I always translate that to, how can this be

Part of a Hopeful, Cross-Institutional, Cross-Disciplinary Movement

- Five years ago there was a different way to look at this. Now there are all of these positive things going on and there are going to be more and more by the time you're opening. Museums including the Cal Academy and Chabot and the Monterey Bay Aquarium and others as well are grappling with these issues. It seems to me it gives the issue of the climate crisis a place. If it can somehow feel like you guys are in partnership with each other to help people connect with nature and understand how it's going to change and understand their role in it, and people have a place they can be part of and come to and it's connected to other places, it gives a sense of being part of a movement and gives you hope. You all weren't around in the 'sixties when we had this.

I think there is some kind of a movement and it is institutional, it's not just the responsibility of the natural history museum. Art and history can play into it because you have to understand the historical perspective, art interprets it—there is great potential. • Darcie Fohrman

Using Humor and Anger: “We’re big, we’re pissed, we’re polar bears”

- I would say another effective message that was not appropriate for the Monterey Bay Aquarium (or they were not comfortable going there) is using humor and anger. There are these very funny bumper stickers that have a polar bear on them that say, “We’re big, we’re pissed, we’re polar bears.” I think in terms of climate change you could do some really funny stuff, but with their dedication to an earnest approach it was not really where they wanted to go.

But I think the other thing besides depression that people feel about global warming is, oh my god, “Save the world,” this is so earnest. There are opportunities to take some alternate paths. • Nina Simon

The Dark Humor of Environmental Collapse

- Because your existing dioramas show ecological balance, there’s got to be a way there to show how some small instability in that environment could collapse the whole environment. There’s an opportunity for visitors to imagine that, and there’s something there for using the dioramas. • Darcie Fohrman
- Maybe that’s where Nina’s reference to dark humor comes in. Make it a challenge to do YouTube animations with the dioramas showing different outcomes. • Wendy Pollock

uniquely useful to the community? I think it’s one of the ways to address issues like this without being depressing because it’s not just delivering this depressing message, it’s also what’s already going on out there.

It’s related to what Nina was saying about the fact many people are already doing many things. How can this place be helpful to the people in this region in getting some of this good work done? I’ve been frustrated all through this because I don’t understand well enough your local communities. I agree this is a good first step, to get more involved. Do you have lab space they could use, do you have meeting space? What would be helpful?

- Wendy Pollock

Giving People Something to Do

- To build on what Nina was saying, I think the Monterey Bay Aquarium is an excellent example of not making depressing stuff depressing. To my mind, the way they do that very successfully and have done so for years is that every time they present something depressing, like contaminants in Monterey Bay, they empower people by saying, “Here’s what you can do to decrease the contaminants in Monterey Bay.” You’re not just left with this, oh my god we’re going to hell. It’s hey, I can just change this one little thing in my life and the bay gets better, and they can spread the word about that. So to my mind it’s about empowering people as well. You’ve got to balance the message and

you get that with the positive. • Scott Sampson

Three-Course Meal or Stew?

Tackling Major Aspects in Combo or in Sequence: What Drives What?

- The biggest problem is the mapping problem. Kathy identified five different aspects of this project earlier. The question is, are we trying to get all of these in? Are we going for stew, where everything is all on top of each other and relatively homogeneous, or are we going to niche partition here and say we’re doing the meat dish, we’re doing the carrot dish, and we’re doing the peas? • Christopher Richard
 - And they’re each in a separate tray.
 - Kathleen McLean
 - Well, they might not be in separate trays, but we have to have some clarity about which principles are driving which components as we go through this development process. • Christopher Richard
 - So this is really getting back to the content question that Scott brought up earlier about the foundational focus of the content?
 - Kathleen McLean
- ### Avoid Rushing to Solutions
- I think this question comes back to the process that gets you to figuring this out, or at

least getting to the point where you say, “All right, we’re going to put our stake in the ground.” You have enough stuff for the next millennium, but at some point you can say, “Okay, we’ve engaged, we’ve had dialogue, we’ve gotten enough understanding to say we’re going with the three-course meal.” I think all of those things help you get at this question and the final question below, “How do we focus energy and resources in a productive way?”

My word of advice would be, try not to get to this question and the one below too quickly. This is similar to what I said earlier about how to engage visitors in conversation. We skip over the data and the reflection. We just want to get to the decision. My advice would be, allow yourself to be in a place where you don’t rush to the decision too quickly. I understand you have a grant you have to write. That’s why I kept asking earlier, how do this proposal and the pieces within the proposal fit into the larger 24- to 36-month plan? There is this tension between figuring out the answers for this grant and not letting that restrict the larger picture. That’s why I’m saying don’t get too fast to, “It’s got to be this,” because you’ll cut yourself off from other ways of thinking. • Julie Johnson

How Do We Focus Resources and Energy in a Productive Way?

The Question of Focus

- For me the question continues to be one of focus. I think these are all ways of getting at that focus: the language we use, the scope of our reality. The thing I keep thinking about is the idea of the institution being the place where the sustainability message is carried. And we need to think of ourselves as being part of the institution and the institution is helping us get that message out, but we can focus on what we can focus on in the Natural Science Gallery. The question is, what is our true focus? Where can we best apply our energies to make what is a real contribution? Given what we have, and given reality as a starting point, how do we focus the energy that we have towards these larger goals in an actual, productive way?
 - Lindsay Dixon

A Warm Friendly Place to Share, Showcase Work, and Increase Spheres of Influence

- I sit here and think, what would I want in a museum like this? I have no idea what the community is really like here, but as a member of a community, as a parent of a family, what would I look for in an institution like this? Again, this is not the same world it was when this institution put those dioramas out there. A lot of what those are trying to do you could probably get other ways. You could probably go online and find out about the



Al fresco exchange of ideas



Amy Billstrom and Wendy Pollock

biomes of California. You could go to NetFlix and probably get a PBS documentary that would bring it home in a way that might be more palatable for some people.

But what you don't have is a place to go and share all of this with other people, a warm, friendly, community-based place where you are showcasing the work of other people in the community, showcasing the work that some kids are doing in their school or in the Girl Scouts about studying raccoons or wood rats in the area. A place where people can come together and share and try to increase their sphere of influence by working together.

I don't pretend to know whether dioramas are a part of that. Maybe they are. But right now that gallery is not a warm, friendly place to come and share and I have a feeling that's what's need in order to try to move towards sustainability of any definition in this area. It is something this place could probably uniquely do because you've got the space, you've got community, you've got the reputation. • Rick Bonney

Building on What Exists to Create Programs and Exhibits with Energy and Connection

- I would think that the education programs and the education department and the publications and invitations and announcements that come out of this museum and the dedicated community that already exists from

that is the beginning. You don't have to really reinvent the wheel. You have to think of the exhibits as the catalyst for continuing that work and not have it be two separate things. You want people to come away from an exhibition with that same energy and connection that they have when they come away from a program. And programs need to happen in the galleries, and the galleries need to have the life that programs have and feel animated, even when there aren't a lot of people in them. That's a design challenge and it's doable.

I agree that you have to identify the end product and backcast to connect these two things. And keep it simple and don't make it too complicated. In 30,000 square feet that means organizing the experience in a way that's easy to grasp. You need emotional goals and you need to create kinds of experiences that are contemplative, that are participatory, that are visitor generated. In some places those will be mixed, but it's a real conscious decision and you have the space to do it. You could have a theater. So I think the goals for that product grow out of the community connection that you want to make. • Darcie Fohrman

PARTING THOUGHTS

The Central Importance of Community Ownership

- One of the things that came up for me as a parting thought got mentioned by a lot of you in different ways. It's something that always gets mentioned very gently and tends to not take center stage, and it's something we all need to keep in mind no matter how difficult. I wrote down a few of the phrases and words that came up over the course of this morning. They relate to the question, "How do we serve our audience?"

When I worked at this museum years ago the department that I was brought into was created when the people of Oakland shut the museum down because it did not reflect this community—the people whose money it was that built this institution. The museum opened in 1969 and six months after it opened it was picketed to the point that it was shut down. My department, which at the time was called the Special Exhibits and Education Department, was where all the multicultural weirdos went to do very strange things. It was the place where all of the ethnic and community affairs guilds got formed, where the Black Cowboys came riding in on their horses, where the Japanese internment people did their exhibit about the camps, where the Chinese people did their exhibit about Angel Island. It goes on and on.

This place was built on the blood and sweat of a lot of people pushing for community. In fact, the first director who worked on this museum with Kevin Roche and all of the powers that be was forced to step down six weeks before the museum opened because he insisted on having community participation in the museum at a time when community participation was not appreciated. He was forced out and was not able to even celebrate the building of this museum because he insisted that the museum include community participation.

What I learned here is what has kept me going in the museum field all of these years. This museum is paid for by local tax payer dollars. We are all here to serve those people out there, and this community is so in need of a place like this. We easily forget that in all the power politics that go on and in wanting our own names in lights. We forget that we're actually public servants and this museum is in the service of the community. People said that all around the table today.

Wendy said, "It's not thinking about what we should tell visitors, it's thinking about how we can be useful to the community." Those kinds of comments just slip on by. How can we be useful to whoever we define as this community?

The other idea that kept coming up was how we can facilitate engagement, the idea that



Mary Marcussen, Kathleen McLean, Terry Gosliner

A Useful, Idea-Rich Session

- This has been incredibly helpful. There is so much to absorb and this has been an honor and a pleasure to have you here. I think many of our instincts and things we've been talking about have been reinforced by this, but we've also heard so many new pieces of wisdom to think about. I want to thank you and we hope to have your continuing involvement in this as we proceed. • Lori Fogarty
- I want to say thank you on behalf of me and my staff for allowing us to participate and work with you people. I've got this quote from Rick Bonney here, "Give me something I can use," and there have been plenty of things we can use. • Douglas Long

we're facilitators. That's really why we're here. We're not here to tell people what we think or show people how smart we are. We have to keep reminding ourselves that what we really should be doing is facilitating. At some point we're going to be gone, and hopefully this museum is still going to be here. And it is only going to be here if the public buys into it and owns it and takes it

on, and only if this place is useful for those people out there.

Hopefully you'll stay with us and help us and stay connected, and hopefully this museum can really engage and facilitate and show the rest of the museum world that it's possible.

• Kathleen McLean