

Dani Garcia

MOXI Advisory Board
The Wolf Museum of Exploration + Innovation
125 State Street
Santa Barbara, CA 93140

Dear MOXI Advisory Board,

My name is Daniela Garcia and I am currently a student in my third year at the University of California, Santa Barbara. I recently visited the California Science Center, which is located in Los Angeles, CA. This science museum provides hands-on experiences relating to scientific processes or phenomena for people of all ages, and does so by engaging the audience and making them curious to learn more. Not only do they have a number of permanent and special exhibits, the museum also holds a science camp for children in preschool through 8th grade, as well as lab field trips and science tours. I believe that my analysis about one of their exhibits could be beneficial to the construction of exhibits at the MOXI, which has very similar goals for scientific learning, as well as similar targeted audiences.

Background

During my trip I visited the *Ecosystems* exhibit, which is one of the most recent permanent additions to the California Science Center. Within this gigantic exhibit, you learn how plants and animals are interconnected, as well as how life begins and ends at virtually all environments on our planet. Once you set foot in the exhibit, you enter a dark room with absolutely nothing in it. Then, the entire room lights up and you become completely surrounded by videos of kelp forests, dry deserts and tropical islands, while you get simultaneously engulfed in the overpowering music that surrounds you. Once you exhibit that first initial room, you are invited to investigate the seven different ecological zones: extreme, river, island, forest, rot, global, and local L.A. zone. I personally visited each and every single zone, as they were all so fascinating, but the zone I am going to focus on is the Extreme zone, where you explore the world's most harsh environments.

Extreme Zone

The *Extreme zone* was broken up into four different rooms, each covering a different violent and relentless environment. There was the *Desert Room*, where you could see how different animals thrived in sometimes unbearably hot weather. You were able to see the different types of animals and insects that inhabited a fallen cactus, as well as operate an infrared camera to see the body temperature of cold blooded organisms versus warm blooded organisms. Next, you could visit the pitch black *Deep Sea Vents* that scatter the ocean floor. You could see how much pressure organisms have to endure in order to live in that environment, as well as see how humans have been able to visit these remote areas of our sea in human occupied submarine vehicles. The

Rocky Shore was the third room I explored, which displayed the plants and animals that survive pounding effects of waves on rocks. There was a touch tank where you could feel live sea creatures, and you could play an interactive game where you became a barnacle trying to catch the day's meal.

Poles

The last room of the extreme zone is what I will be thoroughly analyzing, which was the *Poles*. This is where we learned about the freezing temperatures, the long dark period where there is no sunlight for months, as well as how animals and humans have adapted to the harsh climate. The first thing you notice when you enter the room is the sound of the wind. Of course there really was no wind, but the audio you heard gave you the illusion that you really were in one of these harsh environments. The room was also a bit colder than previous rooms, and you could really feel the temperature change from the desert room to the poles. The only colors I could see in the room were light grey, white, and light blue. I presume this was done to give the visitors a sense of what it is like to be completely surrounded by ice. The lighting was dim, with special lights on the plaques that were information dense and required reading. I believe this was done with the intention of showing how much of life at the poles is spent in complete darkness, with only limited amounts of sunlight. But while the museum curators wanted to show the darkness all living things endure in these environments, they didn't paint the walls black because the whiteness of snow is a large part of the area, and is also one of the more beautiful portions. These were all aspects of the small exhibit that I first initially noticed, the ambience set the mood and made me excited about the information I was going to be learning. There were five parts to this exhibit, but I am going to focus and deeply analyze the information given in *Surviving the Poles* and the *Ice Wall*.

Surviving the Poles

When you look to your left as you enter the room, you see a display of modern snow gear for human survival at the poles on a mannequin. Clothing has been specially designed to be durable enough to withstand the extremely cold conditions, while also being thin and flexible enough so that the average human can move with ease. Each little part including the hat, the gloves, the shoes, and the pants were all individually labeled with a small description beneath them. Standing right next to the modern version of snow gear was the traditional fur coat that many inhabitants made in earlier years. The indigenous people used what they had available to them, which was only the skin and of local animals, marine and terrestrial. But these materials were extremely beneficial, as they had heat trapping properties.

The design aspect of this part of the exhibit was very minimal. The two mannequins were standing side by side in a clear glass case, with two lights, one on each of the sets of clothing. Behind the two outfits was a picture of a snow capped mountain surrounded by dark water. This was probably done to give the illusion that these 'people' in the outfits were perfectly suited for life outdoors in the coldest environments we have here on earth. Older individuals (not children) have generally had enough education to see the cultural differences in the types of clothing

displayed. I thought I was looking at the past and present versions of cold weather wardrobes, but once I looked at the information panel below the glass case, I noticed I was wrong, as it said both types of clothing are still used today, as they are both perfectly designed to endure freezing conditions

Right in front of the glass enclosure there was a small informational panel, titled “Staying warm, humans adapt in their own ways”, that had two little blurbs about each set of clothing, as well as a coinciding picture of an actual person in each of the pieces. The panel was pretty low to the ground, but I believe it was typically higher than the average 4th grader. The addition of this panel was most likely done specifically for the parents of the children visiting the museum, or more generally the older individuals that are probably more interested in reading about the outfits rather than just looking at the pretty colors and soft fabrics. The fonts were not too big or small, and the entire panel had many different shades of blue on it, thus furthering the overall color pattern of the room.

Ice Wall

The most interactive part of this room was the ice wall, which was a large chunk of the wall to the left of the entrance. It was about six feet high and approximately nine feet wide. Within the wall, there were tiny animal tracks, as well as hand indentations. The purpose of the big ice wall was to see how different types of insulators keep out the cold, and which ones were the most effective. To the left of the wall was a large metal rod, with five or six different pieces of popular insulators attached to a thick string hanging from the rod. Children and adults could then



pick up whichever insulator they wanted to personally test out, and place the material between the ice and their hand. If you couldn't feel the ice, then that was the indicator that it was an effective insulator, and if your hand became cold instantly or slowly over time, you would see that it was not effective.

What was the most surprising about this exhibit was the effectiveness of the messages the museum curators were trying to send. Almost every single child who went up to the wall immediately touched the ice with their hands directly, and only a very small portion of them actually used the insulators and wanted to learn about which one was the best at keeping your hand warm. Instead, I believe that they wanted to feel the shocking coldness of the wall, as many of the children ran from side to side, dragging their hand along the uneven icy surface. I have to admit, although I am older, I too also went straight up to the wall and directly put my hand on the ice. I know from years of experience what ice feels like, so I'm not too sure what made me feel like I needed to feel it on this large surface. But one thing is true, I too, along with most of the

children, did not feel the need to test out the materials and very shortly after arriving to the ice wall, I walked away.

Success of this Exhibit

This portion of the *Extreme zone* was the most popular, but overall it did not seem to attract the most attention out of all the rooms within Ecosystems. This section of the museum did not contain anything extraordinary, as most of the children I saw running around wanted to see something big and exciting. Most fled to the interactive parts of each room, and were thrilled to participate in the numerous games you could play. I believe that the children were mostly interested in playing games, and if they learned something along the way that was fine with them, but most of them did not go out of their way to read the little infographics or watch long video clips or complete somewhat complicated puzzles. In the Extreme Zone, there were small interactive displays, but within this particular room, the most exciting part was the ice wall, but the children were searching for games. Yes they could touch the wall and be surprised by its coldness, but they were more interested in the fun and games aspect of the museum, which is to be expected from young kids, even those in their early years of high school.

Recommendations

Since the California Science Center seems to have somewhat similar goals to the MOXI here in Santa Barbara, I think that there is a lot you can incorporate from the way the science museum is structured in Los Angeles. Both of these establishments wants to inspire young children into voluntarily learning about science at an early age. I am convinced that in order to successfully inspire children to learn about science, we need to make it as fun as possible. The more games and interactive machines and apparatuses that are displayed, the more excited the children will be to take part in active scientific learning. In almost every single room within this exhibit there was some sort of interactive component. In *Poles*, it was the ice wall, which made all the children very excited, as I have explained earlier.

Additionally, there are some sections of the *Ecosystems* exhibit at the California Science Center that were pretty informationally dense, but those were very scarce. I think they were intended for the parents and supervisors of the kids, and including them was a valuable addition to my experience at the museum. As an adult, you are not so inclined to participate in every interactive game, and sometimes you want to gain a somewhat thorough knowledge about a topic you had no previous literacy in. This was true when I analyzed the *Surviving the Poles* section of the room, as it contained a little information panel that described each outfit in detail.

One thing this museum did an exceptional job at was setting the scene in every zone and in every room within the zones. In the *Island* zone, you would walk in to a warmly lit room and hear birds chirping in the distance as well as faint ocean waves crashing on the shore. There was even a background image of a tropical beach on the furthest wall. In the *Rot* room, you would step inside and feel the ground squish beneath your feet. Of course there wasn't actual decomposing material, but it was made to look and feel like it actually was. In the *River* zone you would walk into the room and the entire left side of the room was covered in circular tassels that would sway

and shimmer as the interactive machines created wind. The atmosphere of the entire exhibit was so enticing, it made me almost run to each next room.

At the end of the *Ecosystems* exhibit, in order to exit you must walk through the L.A. zone, where you can learn about issues with garbage disposal, energy, water, and recycling in the local area. In the image below you can see part of the environmental awareness section, as well as some of the telescopes that were aimed at various famous landmarks.

Los Angeles is home to most of the visitors that walk through this museum, and it is always a good idea to become more knowledgeable about your own hometown. Here in Santa Barbara, at the moment we don't have a museum that is dedicated solely to these issues, but as a student at the University of California, Santa Barbara, I am much more informed than the average citizen in this county.



Adding a section to the MOXI that is solely dedicated to the environment and culture of Santa Barbara would be excellent, as children can learn at a young age about issues that our city is currently dealing with.

I hope you do take my analysis of the Ecosystems exhibit at the California Science Center in Los Angeles, CA into consideration when building the MOXI here in Santa Barbara. I strongly believe that both museums have very similar missions to encourage scientific learning for children in a way that is fun, but also requires them to think critically and collaborate. Thank you for your time and I wish you the best of luck with the opening of this museum.

Sincerely,
Dani Garcia