

Exploration for All: Autism Early Open Summative Evaluation Report

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EXECUTIVE SUMMARY

Exploration for All: Autism Early Open has been held at Pacific Science Center on the second Saturday of each month since January 2015. Support from Safeco Insurance has enabled the Science Center to open early from 8 – 10 a.m. and provide free entry for families affected by autism spectrum disorder. This summative evaluation aimed to answer three questions about the family experience at *Exploration for All* events:

- 1) How and why have families engaged with *Exploration for All* and Pacific Science Center so far?
- 2) What are the most beneficial aspects of the event for families?
- 3) What impact has attending *Exploration for All* had on families, in terms of their perception of Pacific Science Center and their experience as a family?

A total of 65 structured interviews were conducted with parents and caregivers onsite during the monthly events from September 2015 to July 2016. Average attendance across these eleven events was 100 visitors – or about 25 family groups – per event.

Interviews revealed that about half of respondents have been to more than one *Exploration for All* event, in contrast to only about a third of respondents having visited the Science Center during regular operating hours in the past year. Several reported having difficulty attending during regular hours because of crowds and noise. Families were motivated to attend *Exploration for All* because it's less crowded, they had a positive past experience, or they wanted to check it out.

The absence of large crowds and noise created a calmer environment that made it possible for children to explore more than they would be able to otherwise. A welcoming environment was created by being around other parents and Science Center staff who understand their children's behavior, resulting in a more relaxing experience for both children and caregivers. Through attending *Exploration for All*, families discovered that the Science Center is an accessible place where they can take their family. The event has given them a space to interact and talk about subjects they're interested in, especially the live animals, dinosaurs, and outer space in the Willard Smith Planetarium. As a result, they have learned about each other's interests and curiosity.

Moving forward, continued success will depend on a focus on positive staff interactions with guests and the maintenance of the uncrowded, calm environment that so many mentioned as being crucial to their experience. Improving communications related to parking and finding the entrance would help improve families' experiences. Additionally, many lessons learned during *Exploration for All* can be used to improve the guest experience during regular hours, including improved signage, training staff to talk to guests of all abilities, and hosting the planetarium as an open house. The Science Center thanks Safeco for its continued support for this program.

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INTRODUCTION


"[Exploration for All] makes [Pacific Science Center] completely accessible. We know that we can enjoy our time here and that staff are more aware of my kids' behavior."

In 2014, Pacific Science Center received support from Safeco Insurance to sponsor monthly early open events for families with members on the autism spectrum. Beginning in January 2015, Pacific Science Center has hosted *Exploration for All: Autism Early Open* on the second Saturday of every month from 8-10 a.m. – before opening to the public. This program has allowed Pacific Science Center to pursue their dedication to accessibility by providing a free visit for families affected by autism spectrum disorder. During the event, accommodations are made for sensory-sensitive guests, including softened general lighting and decreased noise level and visual stimulation on interactive exhibits whenever possible. In addition, Science Center staff provide facilitated experiences for guests at the Puget Sound Tide Pool, in the Willard Smith Planetarium, and on the Live Science Stage.

Safeco Insurance support was renewed for the 2016 calendar year. During both years, funding also supported staff training as well as investigation and planning for future accessibility improvements (with an emphasis on the experience of guests with low and no vision).

In the first four months of the program, formative evaluation focused on soliciting feedback from guests to determine how well the program was meeting the needs of attendees and identify areas of improvement. Summative evaluation commenced in September 2015 with the goal of exploring the impact that attending *Exploration for All: Autism Early Open* has had on families.

This report specifically details the findings from the study on family impact at *Exploration for All*. The results of other grant activities are detailed elsewhere.



EXPLORATION FOR ALL
Autism Early Open, presented by Safeco Insurance.
A Liberty Mutual Company

Thanks to a generous grant from Safeco Insurance, we are proud to present *Exploration for All: Autism Early Open*, presented by Safeco Insurance at Pacific Science Center. On the second Saturday of each month through December 2016, all families affected by the autism spectrum disorder are invited to explore Pacific Science Center during a special free morning visit from 8–10 a.m.—before we open to the public. Experience our exhibits without heavy crowds when we have softened general lighting and decreased the noise level and visual stimulation on interactive exhibits wherever possible.

Early Open Dates:
January 9, 2016
February 13, 2016
March 12, 2016
April 9, 2016
May 14, 2016
June 11, 2016
July 9, 2016
August 13, 2016
September 10, 2016
October 8, 2016
November 12, 2016
December 10, 2016

FREE ADMISSION
Before you visit download our Autism Resources at pacificsciencecenter.org/autism-resources which includes a sensory guide and tips and tools for families with children who have special sensory needs.

Pacific Science Center is committed to providing accessibility for all guests. For detailed information about our facility and services, please visit pacificsciencecenter.org. Located under the arches, near the Space Shuttle. pacificsciencecenter.org

METHODS

This summative evaluation aimed to answer three questions:

- 1) How and why have families engaged with *Exploration for All* and Pacific Science Center so far?
- 2) What are the most beneficial aspects of the event for families?
- 3) What impact has attending *Exploration for All* had on families, in terms of their perception of Pacific Science Center and their experience as a family?

Structured interviews were conducted with parents and adult caregivers on-site during each monthly event from September 2015 to July 2016, excluding the February 2016 event. Parents and caregivers were approached as they explored the Science Center with their children. Each interview took approximately five to ten minutes.

Interview questions asked about the family's previous attendance at *Exploration for All* events and at Pacific Science Center during regular hours, the most beneficial and difficult aspects of the event, the interactions the family had with each other, and how the event changed the way their family thinks about the Science Center.

In total, 65 interviews were conducted by Pacific Science Center Evaluators Kathleen Finneran and Anna Lopez and Intern Erin Salthouse.

Attendance at the event varied from a high of 164 in December 2015 to a low of 49 in May 2016. Average attendance across the eleven events held from September 2015 to July 2016 was 100 people. On-site observations during events in June, July, and August of 2015 showed that, on average, groups included four people. Therefore, average attendance was probably around 25 families per event, and ranged from 12 to 40 families.

The large amount of qualitative data collected in the interviews was analyzed using NVivo qualitative data analysis software to facilitate the coding of emerging themes. The most prominent themes that emerged in the answers to each interview question are described in the sections that follow.

HISTORY AND MOTIVATION

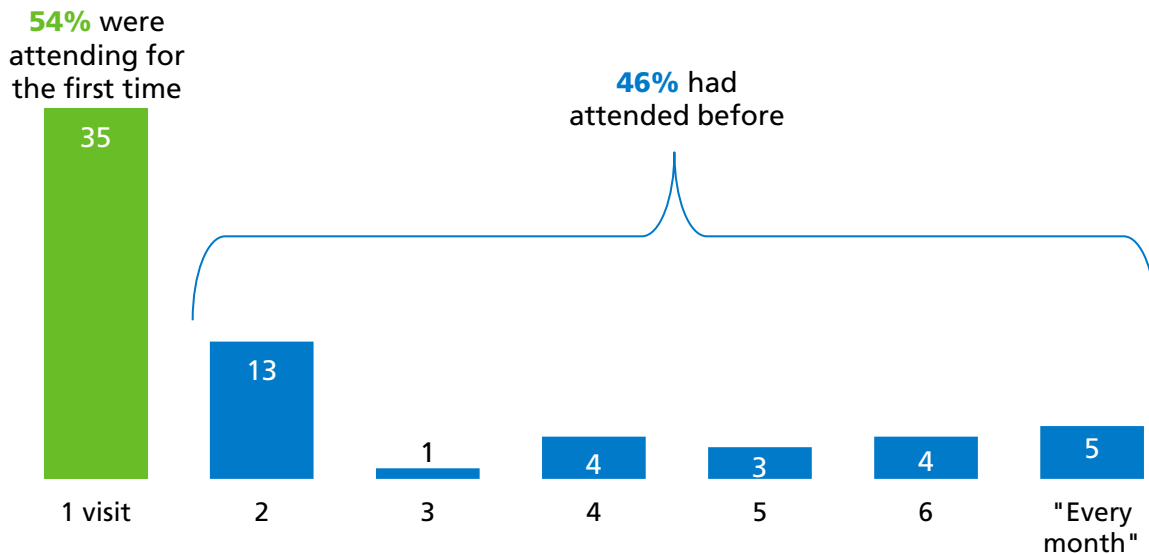
Respondents were asked about their engagement with *Exploration for All* and Pacific Science Center, including previous attendance at *Exploration for All* events, other visits to the Science Center, and each family's motivation for attending *Exploration for All*.

About half of families had been to an *Exploration for All* event before, and two thirds has visited Pacific Science Center before. Some parents reported having difficulty visiting the Science Center with their children during regular operating hours because of crowds and noise. Families were motivated to attend the event because the Science Center is less crowded than during regular hours, they had a positive experience at a past event, or they wanted to check it out.

Previous Attendance at *Exploration for All* Events

Parents were asked whether their family had been to *Exploration for All* before. Over half (54%) were attending for the first time, whereas 46% had been at least once before (See Figure 1). Thirteen families had been just one time before and five families said that they attend every month.

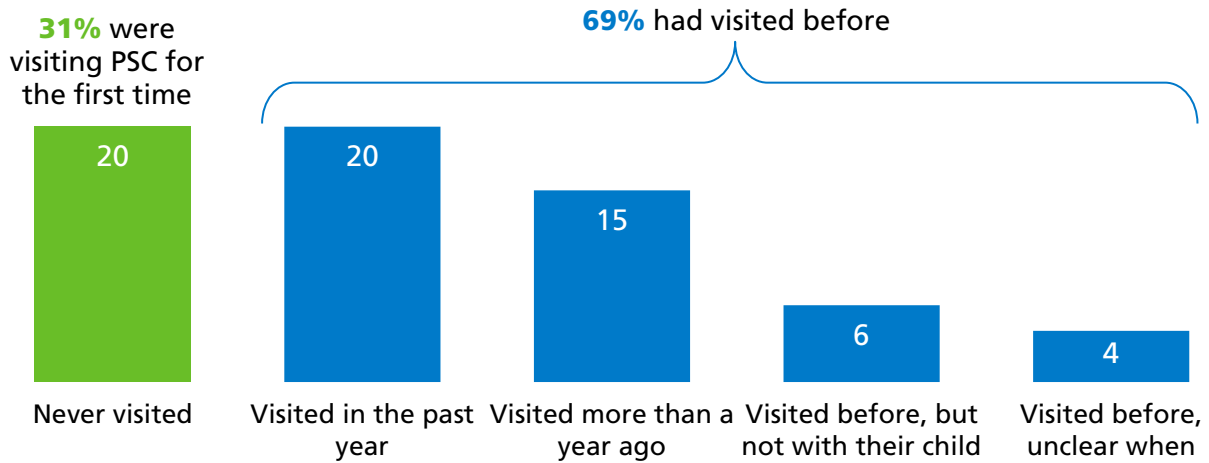
Figure 1 Almost half of families interviewed had been to *Exploration for All* at least once before. (n=65)



Previous Visits to Pacific Science Center

Caregivers were asked whether they had previously been to Pacific Science Center during regular hours. About a third (31%) had visited in the past year with their family (See Figure 2). About a third (31%) had never visited Pacific Science Center before. The last third (38%) had visited over a year ago. These results suggest that this event is drawing in a high proportion of families who do not already visit Pacific Science Center regularly.

Figure 2 About two-thirds of families had visited Pacific Science Center before. (n=65)



Six parents commented on having difficulties during their previous visits to the Science Center, often because of the crowds. For instance, one parent said that they had come for Bubble Fest in the past, but “it was too crowded. We won’t be coming back to that particular event.” Another parent said: “We haven’t been in a long time because of tantrums.”

Motivation for Attending *Exploration for All*

Respondents were asked about what made them decide to attend *Exploration for All*. This question was interpreted in different ways by parents; some parents responded with how they heard about the event, whereas some responded with their personal motivation to attend the event – and some included information about both. Parents who had never been to *Exploration for All* before most often talked about how they had heard about the event, whereas those who had been before talked about their past experiences.

Parents heard about the event through service providers (including Northwest ABA, the UW Autism Center and the Arc of King County), friends and family members, teachers, the Pacific Science Center website, Facebook groups, and Parent Map magazine.

Figure 3 shows the nine most common categories of reasons why respondents were motivated to attend *Exploration for All*. One parent’s answer may have fit into more than one category, so the total percentage is greater than 100. The most common motivations were: the Science Center is less crowded than during normal hours, they had a positive experience at a previous *Exploration for All*, or they wanted to check out the Science Center and the event.

Figure 3 Parents were most often motivated to attend because it's less crowded or they had a positive past experience. (n=65)

My family was motivated to attend because...



*Answers could fit in more than one category so totals may equal more than 100%.

Less crowded

The most common reason for attending, mentioned by 22% of caregivers, was that the Science Center is less crowded than during normal hours. Parents often mentioned that this was important because their children do better and have a better experience in a less crowded environment. One parent explained that the absence of crowds is why they decided to attend with their son: “He’s more sensitive to sound and gets overwhelmed by lots of people. I wanted to try it [going to the Science Center] when there weren’t crowds.” Another parent said fewer people make it easier for their daughter: “For my daughter, it is very difficult if there are crowds. This [event] gives her a great opportunity to settle in.”

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Positive past experiences

A fifth (20%) of parents mentioned that a positive experience at a previous *Exploration for All* event had motivated them to attend again. Some parents talked about enjoying the museum as a whole, such as one parent who said: “She loves coming here and wakes up at 6:30. We have to tell her that the museum is only open once a month.” Other parents said there was a specific exhibit at the Science Center that their child wanted to see again: “He’s been wanting to come. He doesn’t have a lot of language but calls it ‘the dinosaurs’ and has been asking for the dinosaurs.”

“He’s been wanting to come. He doesn’t have a lot of language but calls it ‘the dinosaurs’ and has been asking for the dinosaurs.”

To check it out

About a fifth (18%) of respondents mentioned wanting to check out the Science Center because they had never visited with their kids before. Some felt it was a good opportunity to try out the Science Center with little risk – because it is free to get in – in order to see if it is something their child would enjoy. One parent said: “We’ve been wanting to come for a long time. Found out about it through the Arc. We wanted to see how he’d do.” Another said: “It’s an opportunity to check it out. We usually can’t afford to come here.”

To see specific exhibits

Some parents (14%) mentioned specific exhibits at the Science Center that draw them back again and again. Parents mentioned the traveling exhibit (*Art of the Brick*), IMAX movies, *Dinosaurs: A Journey Through Time*, the Willard Smith Planetarium, and the Just for Tots area. One parent said this about their son: “He’s all about dinos. After we saw them the first time he started to say dinosaur.” Another parent said their family came to take advantage of the all-ages access to Just for Tots: “We were hoping to be able to explore all of the parts. When we come [during regular hours] he always wants to go to tot land but we have to tell him no because of the age restrictions.”



"I thought it was a good opportunity to bring him in a place that's inclusive. It's hard to take him places where people don't understand, where we get kicked out or looked at weird. So he can feel its ok to be himself."

Other motivations

Other common motivations included the fact that their visit is free, the Science Center is less noisy than during normal hours, and it's an educational experience. Five respondents (8%) said that *Exploration for All* is an event that they regularly attend. A few parents (6%) talked about this event creating an inclusive environment where other parents understand their children's behavior. One parent said: "I thought it was a good opportunity to

bring him in a place that's inclusive. It's hard to take him places where people don't understand, where we get kicked out or looked at weird. So he can feel it's ok to be himself."

GUEST EXPERIENCE

Respondents were asked about the most beneficial and most difficult aspects of their experience at *Exploration for All*. These questions allowed guests to reflect on their visit or visits and think about what worked and didn't work for their family. The benefits of the event that parents identified tended to be strongly connected to the fact that the Science Center was quiet and uncrowded during their visit. In the absence of crowds and excess noise, children and their parents were able to explore more, interact with staff and ask questions, providing a deeper, richer experience than they might be able to have during more crowded times. These observations underline the need to keep these events small in order to maintain this experience.

Most caregivers did not report any difficulties with the event itself, but some had trouble getting up early, parking, and finding the entrance. These observations point to a need to consider the whole experience of visiting the Science Center and not just what happens once guests walk through the door.

Most Beneficial Aspects of *Exploration for All*

The beneficial aspects of the event stemmed from the quiet, uncrowded environment that was intentionally created for the benefit of guests. Because it was less crowded and less noisy, families were free to play and explore the exhibits and experiences available at the Science Center. A sense of freedom was created by being in an environment where Science Center staff and other families "get it" and parents don't have to worry about their children's behavior.

Calmer environment

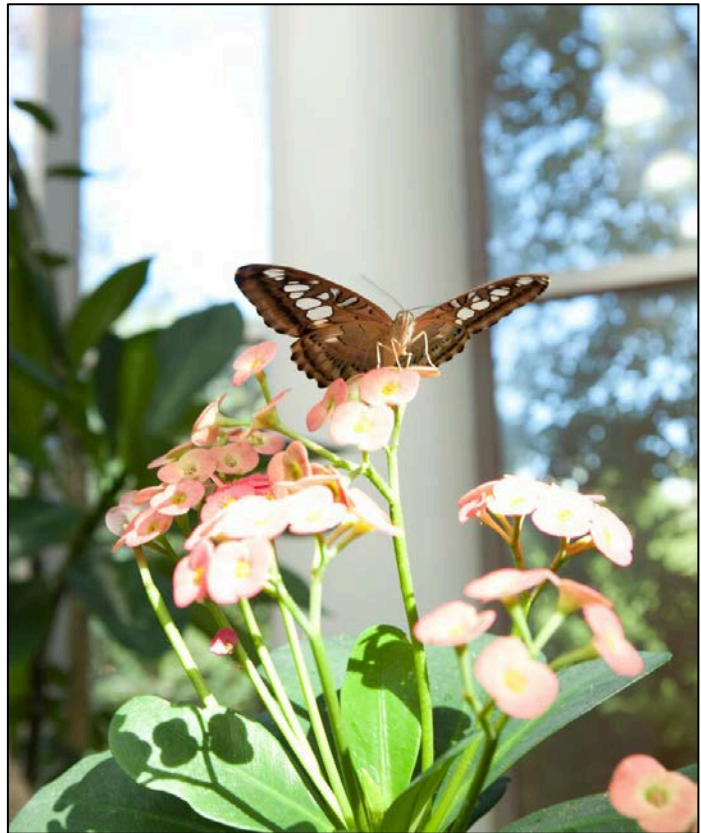
The lower volume of people at the Science Center helps to make the environment calmer for attendees, something that 45% of parents talked about. For instance, one parent said: "There's less people so my son doesn't get overwhelmed." Another parent said this about the most beneficial part of the event: "Less crowds, quieter, educational. When there's a lot, he gets overwhelmed. Kids get pushy. (My son) can't deal with lines. It's nice when there are fewer people and he can participate without being shoved aside."

"The quieter environment, not as overwhelming, is enabling kids to actually engage. If it's loud they shut down and disengage. This allows them to engage."

The reduced noise level also made the environment more calming for children and made the experience more enjoyable, something that 29% of parents talked about. One parent explained: "The quieter environment, not as overwhelming, is enabling kids to actually engage. If it's loud they shut down and disengage. This allows them to engage. If noise- they may want to do something but

won't participate because of overwhelm and crowds." Another caregiver said: "[My child is] a lot less stressed than if we were to come on a normal day. Would need to have ear phones."

Fifteen parents (23%) said that one of the main benefits of *Exploration for All* is the acceptance they feel being in a space with other parents who understand the behavior of children with autism. This socially supportive space helps parents to relax and allows the whole family to have a positive experience. One parent said: "The best part is the freedom. Some autistic kids talk really loud and there is a freedom to just be and not watch out for social appropriateness. I knew he could just be himself and that frees me up to just enjoy his exploration." Another parent echoed this sentiment: "I feel relaxed. I feel people here will understand if my son doesn't behave or has a meltdown. I don't have to work as much as normal situations. My son can enjoy the museum as well."



Staff interactions

Respondents also specifically mentioned that staff helped to create a welcoming environment. Staff at *Exploration for All* have participated in accessibility and inclusion training facilitated by representatives from Partners for Youth with Disabilities. Training has helped staff understand inclusive communication and person-first language and had provided them with strategies for engaging children with autism and handling difficult situations.

Parents were reassured by the fact that staff had received training. One parent commented: "I heard that the staff got trained and that makes me feel really good. In other place they don't know how to work with kids with special needs." Another caregiver talked about the welcoming environment: "[The most beneficial part is] feeling comfortable being around people who are more understanding of my son and won't look at him weird, if he asks weird questions or says something. It's very welcoming." Another respondent said: "It makes it complete accessible, we know that we can enjoy our time here and that staff are more aware of my kids' behavior."

Reports from parents suggest that staff are successfully implementing the strategies they learned and are having positive interactions with children with autism and their families. One parent described their child's interaction with staff: "[The staff member] totally engaged and interacted- at first I started to apologize for my kid. It's awesome that she interacted and [my son] felt safe talking to an adult." Another parent commented: "The staff are great. A lot of times my kid won't engage unless staff reach out to him and you guys always do that which is neat."

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Greater ability to explore and play

Because of low crowd levels, low noise, and reduced social stress, families were able to engage in more exploration at the Science Center, something that almost half of parents (46%) talked about. For instance, one parent said: "[My child] can be himself and I don't necessarily have to restrict or restrain him." Another parent said: "We can get to see exhibits without long lines and crowds. [My child] can approach something and see if he

"[My child] can approach something and see if he wants to engage with it. If there are lots of people around he sometimes won't even approach."

wants to engage with it. If there are lots of people around he sometimes won't even approach." Another parent said: "[What is most beneficial] is the ability to explore freely with the calmer atmosphere. Much more friendly environment than normal."

Caregivers mentioned having more access to the Willard Smith Planetarium and the Just for Tots area in particular. These areas were changed in crucial ways that made them more accessible during *Exploration for All*.

The planetarium was operated as an open house where children and their families could enter and exit as they pleased and ask questions about things they were interested in, rather than having to sit for a full show. One parent found that this worked well for their child: "It was the first time he could get into the star exhibit [planetarium]. He was scared at first, then wanted to go back in. That's huge for him."

The Just for Tots area was opened to all ages of children, rather than being restricted to certain ages. Parents were excited about their older children being permitted to play in the tots area: "I didn't know that the older kids would be allowed in the Tots area and my heart melted when I found out. My son said that he is full of joy."

Free admission

Six parents (9%) mentioned free admission as one of the main benefits. One parent said: "It's free to get in, so it's low risk. It's hard to invest the money if we don't know how long he can stay. We usually only stay for an hour." Another parent said: "That it's no cost. It's

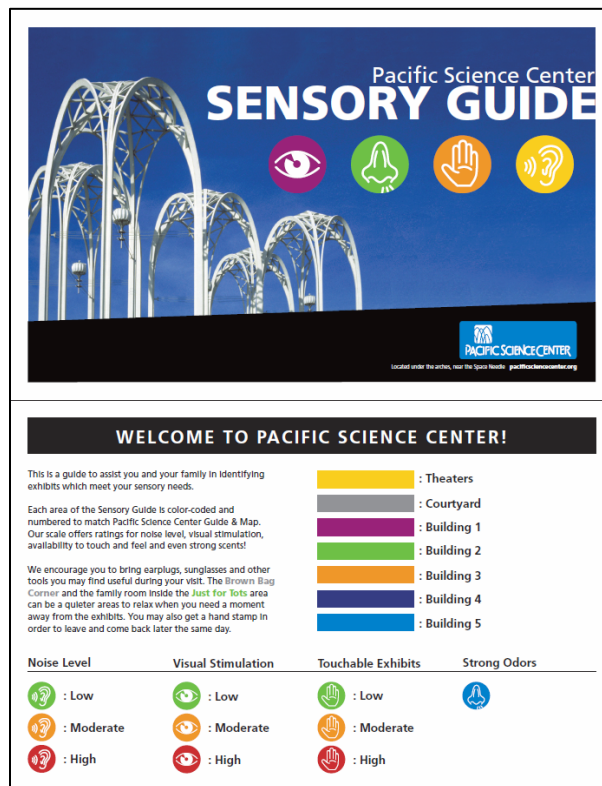
expensive to have a child with special needs, you know, we're having to pay for therapy and things out of pocket, so it's a barrier for us financially to do things like this. The price that it is normally for the three of us is too much."

"It's free to get in, so it's low risk. It's hard to invest the money if we don't know how long he can stay."

In addition, six *more* parents (9%) mentioned the fact that the event is free in response to *other* questions. For instance, when asked whether attending *Exploration for All* changed their perspective of the Science Center, one parent said: "The fact that its free is really nice because a lot of families that have special needs kids have a lot of extra expenses." The relatively low number of adults that mentioned free admission suggests that respondents were not visiting *just because* of the free admission, but it is clear that it was a big help to those who normally face a financial barrier to visiting the Science Center.

Sensory guide

Only one parent mentioned the sensory guide that was developed to help parents determine which areas of the Science Center are accessible for their child. This parent said that the most beneficial aspect of the event was: "Having the sensory guide, because sometimes noises get to him. The guide can see where there may be issues." This feedback suggests that the sensory guide is useful to parents, but is not what parents appreciate most about the event. The interview did not specifically ask about the sensory guide, but could in future to improve awareness and use.



Most Difficult Aspects Of Exploration For All

Overall, caregivers encountered few difficulties once they got into the Science Center. Before entering the Science Center, however, families encountered difficulties with getting up early, parking, and finding the entrance to the Science Center. About half of respondents (45%) said that there were no difficult parts of *Exploration for All*.

Getting up early

Fifteen respondents (23%) said that it was difficult for their family to get up early. This was, however, particularly true for families that had to travel a long distance to get to the Science Center. Some parents voluntarily shared where they traveled from. Three families traveled from Bellingham, and one each from Bellevue, Port Angeles, Tacoma and Kent. Two additional parents that said they had to drive far, but didn't say where they were driving from. Two more parents indicated that they were not from the area. Therefore, at the least, eleven families (17%) traveled a significant distance to attend the event and this presented a hardship for them.

Parking and finding the entrance

Nine respondents (14%) had difficulty with parking in the garage and finding the entrance. These parents would have appreciated more information about which entrance to use up front, before parking. One parent said this was the hardest part: "Getting in. walked all the way to Denny then came back. Sign on the 1st ticket booth would have been helpful." Another parent said the most difficult part was: "The entrance. We parked in the garage and there were signs to go all the way around to the front. It was a little hard with the rain. It would have been nice to just have that notification up front, to be prepared." One parent wrote that this part of the experience is particularly difficult for their family: "Parking and getting to the front is usually loud and scary- the hardest thing for us." Recognizing that *Exploration for All* families may find this part of the visit challenging can help Science Center staff identify how to support them and make the experience as easy as possible.

"Parking and getting to the front is usually loud and scary- the hardest thing for us."

Stage shows

Two parents mentioned that the stage show was difficult for their child. One parent wrote: "We went to the live show and there was more of a gathering of people so that was hard." Another parent said that their child doesn't do well with the live shows. However, this parent made sure to note that this comment was not a criticism of the live shows. Indeed, other parents found that the stage show was a positive addition to their visit, with one parent saying: "We saw the live show. At first our son was scared but once he saw and learned about the snake he wasn't afraid." Therefore, although it doesn't work for some children, the stage show seems to have been successfully adapted for others.

IMPACT OF PARTICIPATION IN *EXPLORATION FOR ALL*

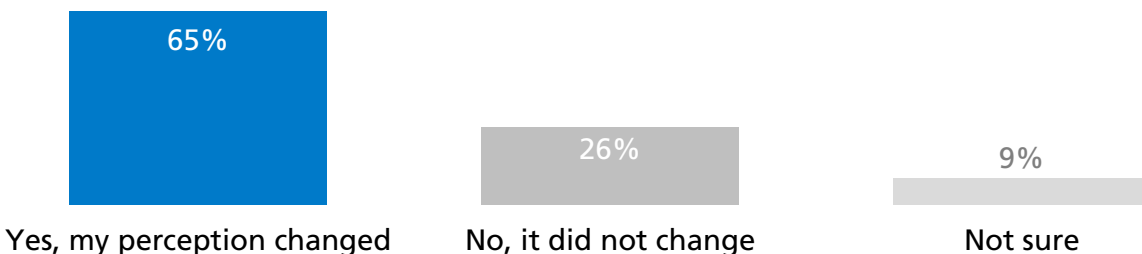
Respondents were asked three questions about how attending *Exploration for All* impacted their family: *Has attending Exploration for All changed the way your family thinks about the Science Center? What was the most interesting conversation your family had today?* and *By or through attending this event, what do you think your family members have learned about each other?* These questions afforded parents and caregivers time to reflect on the experience of interacting with their child at the Science Center and how it had impacted their relationship with their children and other members of their family.

Most respondents felt that their perception of Pacific Science Center had changed positively as a result of attending *Exploration for All* – whether it was because they discovered that it is a place they can take their family or because of their appreciation for the event – and about a fifth of parents were inspired to come to Pacific Science Center more often. Families had conversations about the live animals and dinosaurs and were able to discuss the universe in the planetarium. Interactions between family members during the event helped them to learn about each other’s interests, abilities, and curiosity. Importantly, the unique environment of the Science Center helped families to learn things about each other that they wouldn’t have the chance to learn in their daily lives.

Perceptions of PSC

Respondents were asked about whether attending *Exploration for All* has changed the way their family thinks about the Science Center. In total, about two-thirds (65%) of parents felt that it had changed their family’s perception of the Science Center (See Figure 4). Most parents felt that it had changed their perception of the Science Center in a positive way. Respondents conveyed that they had learned through this experience that the Science Center is a place they can take their family. Parents also talked about how they appreciated Pacific Science Center for reaching out to this community and some indicated that the experience caused them to think about coming to the Science Center more often.

Figure 4 Two-thirds of parents felt that their perception of Pacific Science Center changed as a result of attending *Exploration for All*. (n=65)



Discovered that it's a place they can take their family

Twenty four parents (37%) said that their experience has made them think of the Science Center as a place they can take their family, for a variety of reasons.

Some said that *Exploration for All* makes the Science Center more accessible, making it a place they can enjoy. One parent said: "It wasn't accessible to us before. He has the ability to focus on the exhibits, instead of just having to get out as fast as we can." Another parent said: "We will come here more because now I know I won't feel overwhelmed because he's not overwhelmed and we'll have more fun." Even those who had had positive experiences at the Science Center before felt that the event made their experience even better: "I feel that we can pay more attention to what my son is interested in. We have more time. We know it is every month. [We have] the chance to learn more about museum for the whole family. No rush or judgment from other people. I've fallen more in love with the museum."

"We will come here more because now I know I won't feel overwhelmed because he's not overwhelmed."

Some caregivers became aware of resources available at the Science Center that they did not know about before, whether it was because they had not been here or had not been able to access them previously. One parent said: "I didn't know there were so many things that he'd like to do.

There are lots of interactives for young kids." Another parent was able to interact with staff more: "[We're] more aware - we didn't interact with employees much before and now we do. They've been really nice.

Appreciate PSC

Eighteen respondents (28%) talked about appreciating the Science Center more because of its consideration of families and children on the autism spectrum. For instance, one parent said: "This is the first public institution I've heard of that has something like this. It's great that they take into consideration my daughter's needs." Another parent said: "I appreciate that they're aware. I really appreciate their sensitivity to autism because not a lot of people are aware of it."

"I appreciate that they're aware. I really appreciate their sensitivity to autism because not a lot of people are aware of it."

Will come more often/support

Appreciation for *Exploration for All* caused some parents (18%) to think about coming to the Science Center more often or becoming a member. For instance, one parent said: "Events like this show you really care about your community and mean what you say. It makes me feel more comfortable thinking about getting a membership when she's older and can come all the time. It'll be great!" Another parent said: "It makes me more inclined to come here. Events like this make it wonderful."

Other responses

About a quarter (26%) of respondents felt that the event did not change their perception of Pacific Science Center. Of those, eight said they already liked the Science Center. One parent said: "We're appreciative. It's hard for [my children] to like the Science Center any more than they already do." Many did not provide an explanation.

Six parents (9%) were unsure or unable to answer the question because they had never been to the Science Center before.

Most Interesting Conversation

Respondents were asked about the most interesting conversation their family had had so far during *Exploration for All*. This question revealed how the experience had facilitated interaction between family members. Of those that had a conversation, often the most interesting ones were about the live animals or something they saw in the Willard Smith Planetarium.

Eight parents (12%) said that their child is non-verbal, and instead mentioned a significant interaction they had with their child during their visit. These responses are included in the main themes below. Eight parents (12%) had not yet had a conversation with their child.

Live animals

Seventeen caregivers (26%) had a conversation that centered around one of the live animal exhibits. Children were especially drawn to the Tropical Butterfly House, Insect Village, and the Puget Sound Tide Pool. Conversations usually involved children asking questions, parents providing information, and both children and adults making observations about what they were seeing.

One parent said their conversation was about the butterflies: "[My child] asked questions about the butterflies and was commenting on



things that he saw. That's very different, usually we have to just walk through, get through quickly." Another parent talked about a conversation on insects: "At the bugs exhibit, son really enjoyed them. There was something about different cultures that eat the bugs and it was fun to have a conversation about that."

Willard Smith Planetarium

Thirteen parents (20%) talked about a conversation they had in the Willard Smith Planetarium open house. The open house gave their children an opportunity to ask questions of the planetarium presenter and talk about what they're interested in. One parent said: "My son is really into the solar system. We don't have much time to focus on his interests when we go out. And this gives us time to have conversations on the solar system here. [We] have developed a better relationship." Another parent said: "There were not a lot of people in the planetarium so he asked a lot of questions, requested more information on things he's interested in. During regular hours it's just the basic solar system. This way he can get in-depth to what he likes and is interested in." The amount of positive feedback received from adults about the planetarium open house format suggests that this format could also be utilized effectively during regular hours.

Dinosaurs: A Journey Through Time

Seven parents (11%) had a conversation about dinosaurs. One parent said: "He was interested in the dinosaurs. He doesn't talk much but had seen dinosaurs at a different museum and seemed to recognize them. He ran around and looked at all the dinosaurs. So we were talking about that." One parent, whose son is non-verbal, mentioned gauging his reactions to figure out what he was feeling about the exhibits, saying: "We were all really excited about the big tyrannosaurus rex head with the jaw that moves. We were there the longest."



Family Learned About Each Other

Respondents were asked about what they think their family members have learned about each other through attending *Exploration for All*. This question revealed how the experience had impacted the relationships between family members. About four-fifths of parents (81%) thought that their family members had learned something about each other. They learned about each other's interests, abilities, or curiosity. In many cases, being in an environment that's different from their normal life allowed individuals to learn new things about each other.

Learned about each other's interests

Twenty two parents (34%) said that they learned about their children's interests through attending *Exploration for All*. One respondent said: "Learning a little bit more about the kinds of science my son is interested in. Spent a long time in [Building 3], found out that he is interested in things that are invisible, more than physical mechanical things." Some parents specifically mentioned that they were able to learn about their children's interests because of the freedom they had to explore whatever they wanted in the Science Center, without lines or crowds. For instance, one parent said: "Feeling like a more relaxed environment and he could set the pace more and do what he's interested in rather than having to worry about whether there's a line or we can't go in there. So he could show us what he's authentically interested in."

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Learned something about family's abilities

Sixteen parents (25%) talked about learning something about the abilities of their family members, which helped them get along better or brought them closer. Many of these parents talked about learning that it was possible for their family to visit the Science Center. For instance, one parent said: "Learning that it's possible to be successful in a family outing, with accommodation. We're still on edge but it's worked out so far." Another family learned about what makes an outing more successful: "We have to do this as a group. That's when my daughter feels most comfortable. Will try to do this more. Usually I or other parent goes with the child at a time." Others practiced the skill of patience: "Our patience has gotten stronger. We're a little more relaxed that he's gotten to do his own thing."

Learned about each other's curiosity

Ten parents (15%) talked about finding out that all of the members of their family are curious and love to explore. For instance, one parent said: "That we're all curious, that we all have questions even as adults, though I don't think my daughter realizes that yet. We enjoy asking questions." Another parent said: "That they're curious about different things

and they do like to explore these things. We learned that since it's less crowded we can do more in a relaxed setting."

Different environment helps families learn new things about each other

For many caregivers, the ability to learn these new things resulted from being in a new environment that offers different experiences compared to their daily lives. For instance, one parent said: "I learned [about] his ability to learn, explore and his interests. It's different from usual activities and I can see clearer how he shows interests and how he

"It gives us an opportunity to find out what he's thinking about. He is able to articulate it, ask questions, say what he's thinking."

interacts with people, like the presenter in the planetarium, how he asked nicely." Another parent was able to have new conversations with their child: "It gives us an opportunity to find out what he's thinking about. He is able to articulate it, ask questions, say what he's thinking. With the planetarium, I didn't know this thought process was

taking place about these different ideas like time travel." Another parent was able to observe their child using new words: "For us, it's exciting to see her vocabulary advances - it's not our normal environment, so she can demonstrate language she learned at school or doesn't use in normal conversation."

Other responses

Fourteen parents (21%) did not learn anything or were not sure they learned anything. Parents mentioned that their children showed interest in things that the parents were already aware they were interested in, so they didn't learn anything new. For instance, one parent said: "I don't know. He likes astronomy and planets. He's always liked it. Not sure if we've learned anything new, at least not yet."

CONCLUSION

Exploration for All: Autism Early Open has been running each month since January 2015. This summative evaluation aimed to examine the outcomes of the event as they pertained to families, focusing on three main questions. The main findings for each question are summarized below.

Question 1: How and why have families engaged with *Exploration for All* and Pacific Science Center so far?

- About half of families interviewed have been to more than one *Exploration for All* event
- Only about a third of families have visited the Science Center during regular operating hours in the past year, and several reported having difficulty doing so because of crowds and noise
- Families were motivated to attend *Exploration for All* because the Science Center is less crowded, they had a positive past experience, or they wanted to check it out

Question 2: What are the most beneficial aspects of the event for families?

- The absence of large crowds and noise created a calmer environment that made it possible for children to explore more than they would be able to otherwise
- A welcoming environment was created by being around other parents and Science Center staff who understand their children's behavior, resulting in a more relaxing experience for families
- Staff interactions with families suggest that training has enabled staff to engage children and their parents and create positive experiences
- Free admission is not the bigger motivator, but it does make the event more accessible and less risky for families
- The Willard Smith Planetarium open house and all-ages access to the Just for Tots area were big hits with families
- Families did not encounter difficulties once they entered the Science Center, but improving communications related to parking and finding the correct entrance would help improve families' experiences

Question 3: What impact has attending *Exploration for All* had on families, in terms of their perception of Pacific Science Center and their experience as a family?

- Through attending *Exploration for All*, families discovered that the Science Center is an accessible place where they can take their family
- Families expressed their appreciation for the effort that the Science Center has made to be accessible to children with autism
- Families were able to interact and talk about subjects they're interested in, especially the live animals and dinosaurs
- The planetarium open house format was particularly successful in sparking conversations and independent exploration – as a result, the Science Center may consider using this format during regular hours as well
- Through attending this event, families have learned about each other's interests and curiosity – the unique environment of the Science Center particularly facilitated learning things about each other that they wouldn't have learned in the course of their normal lives

The results from parent interviews show that parents are deeply appreciative of the opportunity that this program affords them – to explore the Science Center with their family without their children being overwhelmed. The lower volume of people and decreased noise allows both children and their caregivers to freely explore what they're interested in and learn new things about each other. Crucial to having a relaxed experience are the trained staff who can effectively communicate with their child and the feeling of being around other parents who understand their children's behavior.

The continued success of the program will depend on the ability of staff to facilitate positive experiences for guests – which continues to be enhanced through accessibility and inclusion training – and the maintenance of the uncrowded, quiet environment that makes the experience manageable for children with autism. It is unclear how much attendance could increase before it gets too crowded, but it should be taken into consideration when thinking about the future of the program. Importantly, many lessons learned during *Exploration for All* can be incorporated into practice during regular operating hours, such as improving signage, continuing staff accessibility training, and operating the Willard Smith Planetarium in an open house format.

Pacific Science Center is committed to continuing to improve accessibility through *Exploration for All* and other initiatives as part of our guiding principle to *enable access for all*. The Science Center thanks Safeco for its continued support and dedication to promoting accessibility to individuals of all abilities.

APPENDIX A: FAMILY IMPACT INTERVIEW



Exploration For All: Family Impact Interview

Hi, my name is _____ and I work in the program evaluation department here at the Science Center. We are interested in understating what impact, if any, attending these early open events has had on your family. Would you mind chatting with me about your experience? Your responses will be anonymous and will help us and our funder, Safeco Insurance, appreciate why this program is important from a families' point-of-view.

First off, have you been to one of our early opens prior to today? No Yes, how many?

What made you decide to attend today's program/event?

Have you been to Pacific Science Center otherwise? No Yes, when was the last time?

*What was most **beneficial** about this event for your family?*

*On the flip side, what have been the most **difficult** aspects of Exploration For All?*

*Now for some more thought-provoking questions. Has attending Exploration For All **changed the way your family thinks** about the Science Center? Why or why not?*

*What was the **most interesting conversation** your family had today (or at a previous Exploration For All)?*

*By or through attending this event, what do you think your family members have **learned about each other**?*