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IMPACT PLANNING • EVALUATION • AUDIENCE RESEARCH



SUMMATIVE EVALUATION

EXTRAORDINARY IDEAS FROM ORDINARY PEOPLE: A HISTORY OF CITIZEN SCIENCE EXHIBITION

Prepared for the
San Diego Natural History Museum
San Diego, CA

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EXECUTIVE SUMMARY

RK&A was contracted by the San Diego Natural History Museum (theNAT) to conduct a summative evaluation of the exhibition *Extraordinary Ideas from Ordinary People: A History of Citizen Science* and to explore how well the exhibition communicates an inclusive view of science. RK&A conducted timing and tracking observations of 105 visitors (10 years and older) in the exhibition and interviewed an additional 100 visitors (10 years and older) at the end of their visit to the exhibition. All data were collected between November and December 2016.

Visitor Characteristics



Median age: 35 years

Race: 60% Caucasian, 14% Asian/Pacific Islander, 13% Hispanic/Latino

Residence: 85% US residents

Education: 72% college graduates and higher

Group composition: 54% with adults, 28% with children, 13% alone

Exhibition Visitation



Passed by: 17% of visitors to the third floor did not visit the exhibition

Median time spent in exhibition (2300 sq. ft.): 6 minutes, 4 seconds

Max time spent in the exhibition: 29 minutes, 8 seconds

Most Visited Components: Pendulum (50% stopped), Edward Lear (50%), Lee Passmore (44%)

Interactives time spent: Lithography (1:20), Audubon (1:00), HerpAtlas (:55)

Visit to the second floor: 23% visited the second floor; the median time spent was 3 minutes, 22 seconds

Meaning Making Around Big Ideas



Citizen science: One-third connected the exhibition to citizen science without prompting.

Inclusive view of science: The majority discussed how the exhibition presented a broad, inclusive view of science in which various people can participate.

New ideas about science identity: More than one-half experienced a new dimension of their own science identities or a new way they were thinking about science identities more broadly.

DISCUSSION

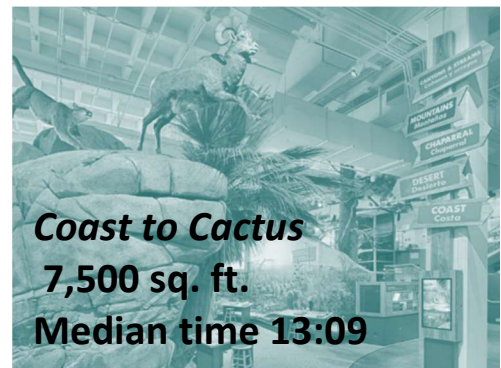
The following discussion is structured around the six questions we used to guide this evaluation and research for the *Extraordinary Ideas from Ordinary People: A History of Citizen Science* exhibition. Findings from the observation and interviews as well as literature from the field are integrated as applicable. Please see the findings sections of the report for a comprehensive presentation of results by methodology.

EXHIBITION BEHAVIORS

The first three questions guiding the evaluation are about how visitors are using the exhibition. We have made several comparisons between *Extraordinary Ideas* and *Coast to Cactus* to help the NAT interpret the findings. We have not made these comparisons to indicate how one exhibition is better than another since expectations for visitor behaviors to each are distinct.

WHAT IS VISITORS' LEVEL OF ENGAGEMENT WITH THE EXHIBITION?

Level of engagement is defined in many ways. First, we look at the median time spent in the exhibition overall, which is 6 minutes 4 seconds for this 2,300 square foot exhibition. That is about half the time visitors spent in *Coast to Cactus*, although *Extraordinary Ideas* is one-third the size. If we compare *Extraordinary Ideas* to other exhibitions using Serrell's Sweep Rate Index¹, we find time spent is on par with what we might expect; visitors are moving slightly faster through *Extraordinary Ideas* than indicated for an average of small non-diorama exhibitions but slower than the average for natural history exhibitions. However, we should factor in that about one-quarter of *Extraordinary Ideas* is dedicated to an upstairs mezzanine area, so the time spent overall is likely more on par with small non-diorama exhibitions than the numbers initially portray.

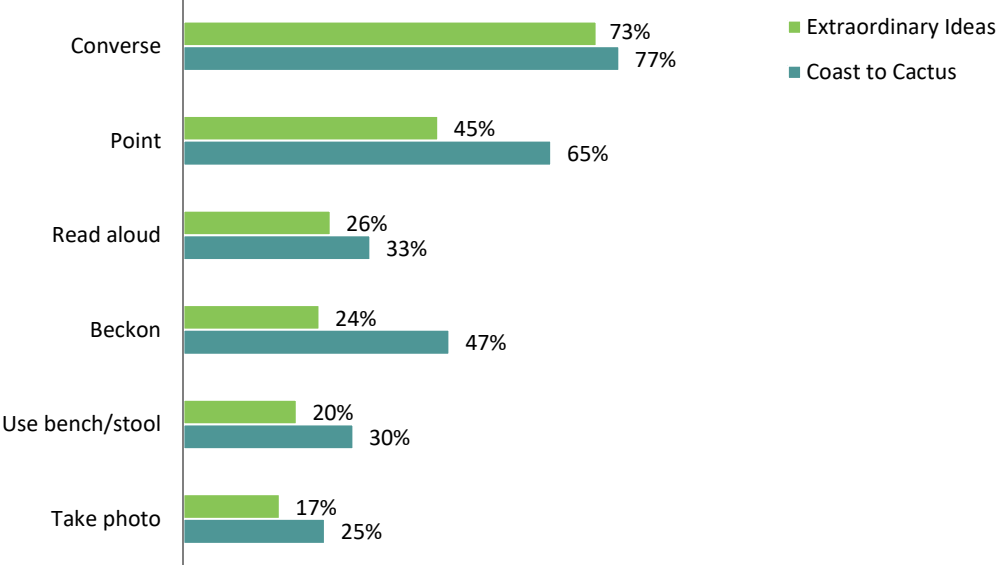


¹ Serrell, B. (1998). *Paying Attention: Visitors and Museum Exhibitions*.

Second, we look at the attraction of components to gauge visitors' level of engagement. Visitors stopped at a median of 10 components in *Extraordinary Ideas*, which is excellent compared to the median of 12 stops made in *Coast to Cactus*. Components in the main gallery of *Extraordinary Ideas*, where most of the core content is displayed, were among the most visited. For instance, 50 percent visited the Edward Lear component, making it the most visited component (along with the Pendulum). Other components focused on citizen scientists were also among the top visited (e.g., 44 percent visited Lee Passmore, 42 percent visited Romeyn Bech Hough, etc.); this has substantial implications for meaning-making, which we discuss later.

Third, we look at social behaviors as an indicator of engagement. Despite being an exhibition with many books in cases and the evaluator overhearing some adults shushing their children, social behaviors in *Extraordinary Ideas* were still frequent. Overall, 73 percent of visitors were observed conversing with others in their group in *Extraordinary Ideas* as compared to 77 percent in *Coast to Cactus*. Fewer visitors were observed pointing something out to another visitor, beckoning someone over, or reading aloud in *Extraordinary Ideas* versus *Coast to Cactus*, but these behaviors were still happening fairly often, so theNAT should not be concerned.

Social behaviors in *Extraordinary Ideas* just slightly lower than *Coast to Cactus*



HOW ARE VISITORS ENGAGING WITH THE INTERACTIVE/MEDIA COMPONENTS?

Extraordinary Ideas includes seven interactive/media components in the main gallery; four of these components are digital touchscreens, two are videos, and one is a digital slideshow. The majority of visitors stopped at one interactive/media component or more (58 percent). Groups with children are more likely to stop at these interactive/media components than adult-only groups. Dwell times at the interactive/media components are encouraging; the time spent at all of the digital touchscreens and the lithography video are above 30 seconds, and three of the components had median dwell times about twice that. By comparison, the median time spent at the Valentien and one Where Are We? kiosk in *Coast to Cactus* had median times of 47 seconds, but median times at four other Where Are We? kiosks were 20 seconds or less.

Overall, there were few apparent frustrations or challenges to using the interactive/media components. As theNAT is aware, the Microscopes interactive, Carole video, and Lithography video sometimes went offline, but no other issues were documented otherwise. However, note that about one in four of the visitors to the Audubon interactive played a bird sound, which indicates underutilization or possible navigation issues.

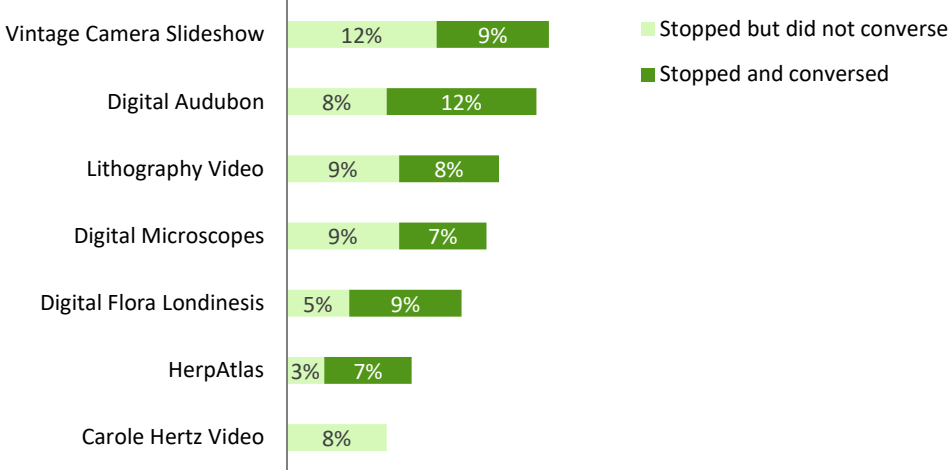


The media/interactive components support some social behaviors. In particular, the Digital Audubon interactive, Digital Flora Londinesus, and HerpAtlas best supported conversation; the majority of visitors who stopped at these exhibitions engaged in conversation with someone else while at the interactive. By contrast, the Carole Hertz video promoted the least amount of conversation among interactive/media components; no one that stopped at the video conversed with someone else. See the figure below for further data on conversations at interactive/media components.

Also, we offer the following observations based on the data and our professional experience:

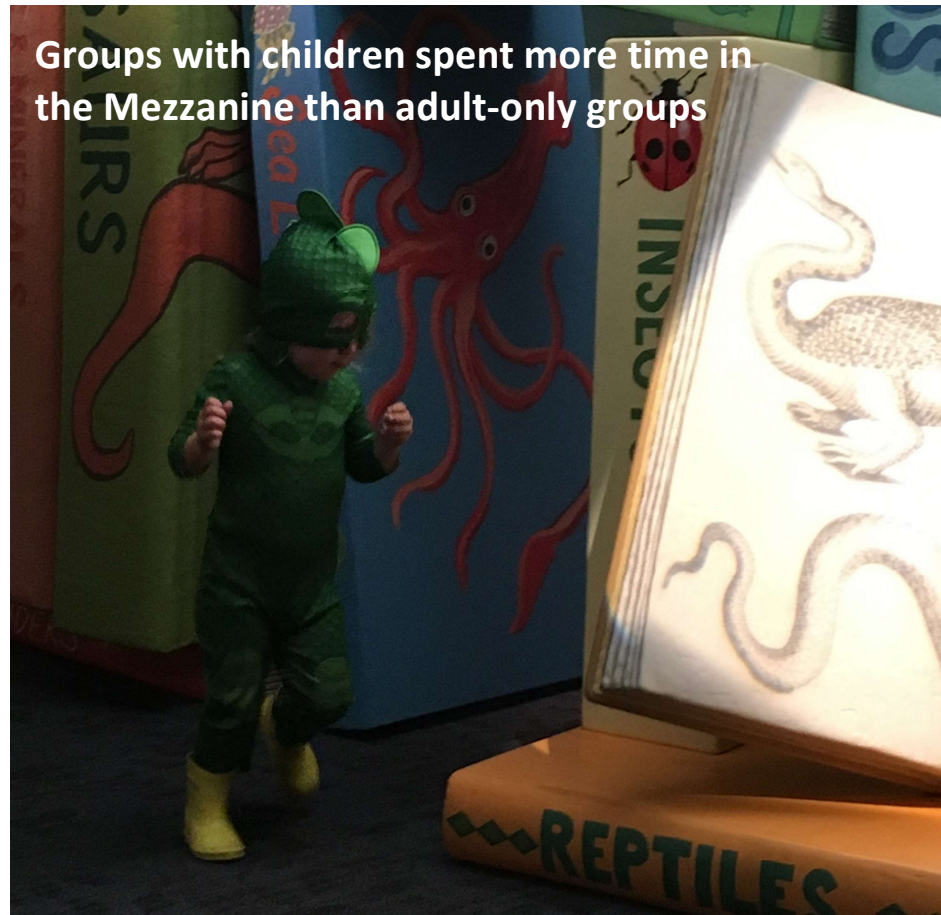
- ◆ The large size of the interactive touchscreens encourages visitors to use them in groups. Even if visitors are not *conversing* at the component, groups often use it, with one visitor watching others.
- ◆ Some interactive/media components do not encourage long enough dwell times for them to become a social experience, such as the Carole Hertz video.
- ◆ While the sample is small, it is encouraging to see conversations around interactives that allow visitors to explore digitized books (i.e., Digital Audubon and Digital Flora Londinesus); these components also have a high percent for one visitor watching another at the component.

Conversation at interactive/media components in *Extraordinary Ideas*



ARE VISITORS GOING UPSTAIRS?

About the same percent of visitors went upstairs to the Mezzanine in *Extraordinary Ideas* as those who went upstairs to The Attic in *Coast to Cactus* (24 percent versus 22 percent). As was the case in *Coast to Cactus*, visitors who went upstairs dwelled there. Note that the median dwell time upstairs in *Coast to Cactus* was higher than the dwell time upstairs in *Extraordinary Ideas* (approximately 5 minutes versus 3 minutes), which is likely indicative of the fact that *Coast to Cactus* had more activities upstairs than *Extraordinary Ideas*. Note, however, visitors in groups with children spent more time in the Mezzanine than adult-only groups, likely due to the kid-friendly nature of the Book Nook.



MEANING-MAKING FROM THE EXHIBITION

The final three questions guiding the evaluation and research center on whether the ideas theNAT hoped to communicate were understood by visitors.

ARE VISITORS TAKING AWAY SOME VERSION OF THE BIG IDEA?

The big idea for the exhibition is: “For much of what we know about natural history, we can thank citizen scientists.” Positively, about one-third of interviewees spoke about this unprompted when asked what they thought the exhibition intended to communicate. For example, one person described how “even an Average Joe” can contribute to scientific research. Several more, in ensuing conversation, also spoke to the big idea and provided examples from across the exhibition in support. Others were not off-point, but described the history of science more generally without attributing it to the people behind the research. Further, visitors also picked up on several of the other main messages of the exhibition. For example, they were impressed by the artistry in, and historical significance of, the books.

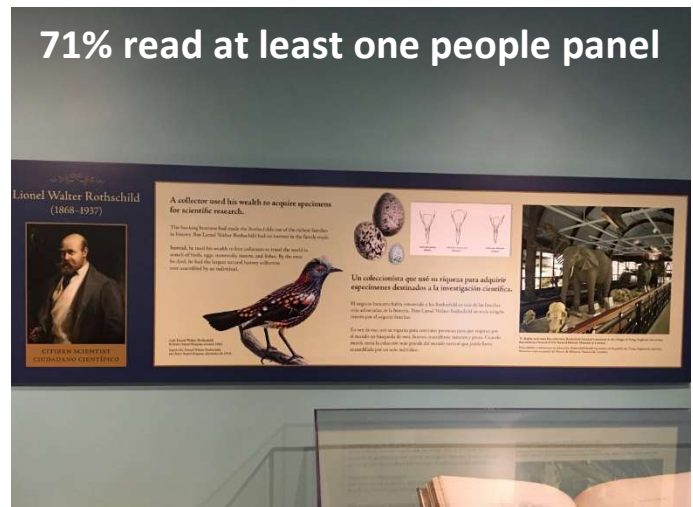
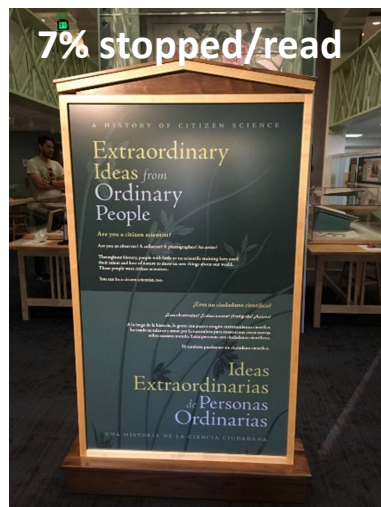
TheNAT’s concentration of content in the main gallery and repetition of the big idea was crucial to helping visitors’ meaning-making, along with the exhibition design that encouraged visitation to the components in the main gallery and dwell times there. As noted previously, the level of engagement with the exhibition was relatively high, suggesting that visitors would take away the main messages if presented clearly.



HOW ARE THE MESSAGES ABOUT CITIZEN SCIENCE RESONATING?

First, most visitors were not familiar with the term “citizen science.” Some were familiar with the term prior to visiting the exhibition, and about one-quarter became familiar with the term through the exhibition. We might have expected that more visitors would have become familiar with the term since it is included in the secondary part of the exhibition’s title (“a history of citizen science.”) However, reading text that used the terminology, such as the introductory text and citizen science panels, was infrequent. For example, 7 percent read the introductory text.

Nevertheless, most visitors formulated some understanding of citizen scientists through the exhibition even if they did not know the term. Positively, the majority described citizen scientists as not formally trained but great contributors to scientific research. By comparison, some interpreted citizen scientists more as hobbyists, suggesting they did not contribute to scientific research in a substantial way. Without having read text panels in the exhibition that provide explicit references to “citizen scientists,” visitors were still able to glean this understanding through the components about the many individuals in the main gallery. Almost three-quarters of all visitors read at least one of the text panels about the people highlighted in the exhibition. Certainly visitors who read more than one of the people text panels had greater chances of shaping the idea of citizen scientist in their minds, and reading at least one provided grounding in one example of citizen scientist.



HOW IS THE INCLUSIVE MODEL OF DOING SCIENCE RESONATING?

As described in the request for proposal (RFP) for evaluation and research services, theNAT made many deliberate decisions to promote an inclusive model of “doing science” in this exhibition (see the excerpt on the following page). To understand how well the exhibition conveyed an inclusive view of science, we first asked visitors about their science identities.

Overall, many visitors described having a strong science identity. Keep in mind that these interviews were with a random sample of visitors to theNAT so they are likely more predisposed to have a science identity than someone recruited outside the museum. Nevertheless, conversations revealed that visitors were more likely to identify as a “science person” than describe ways in which they “do science” or, borrowing from Carlone & Johnson (2007)², they were more likely to affirm their science identities in the context of self-recognition compared to performance. Specifically, when visitors talked about how they saw themselves as a science person, they largely took an inclusive view of science and reflected on themselves as inquisitive or a problem-solver. By contrast, when visitors talked about how they do science in their everyday life, visitors were more inclined to do so in a traditional way, such as by identifying their profession or scientific skills applied daily, such as using mathematics.

As supported by theNAT’s research, we found that females and people of color are less likely to describe how they do science in their everyday life. However, interestingly, college education is also a factor in how visitors discussed their scientific identity. For example, visitors who identify as college graduates (with no specific field of study defined) tended to discuss science identity in traditional ways. Their responses seemed sensitive to the profession of science; that is, they seemed least comfortable being able to identify with a scientist unless they worked directly in a scientific field or completed discrete scientific tasks in their daily lives.



Inclusive views of science

“I feel everyone is a science person. Maybe they are educated, or not. They use [science] in one form or another.”

“[I think a science person is] someone who is curious. Analytical. Someone who wants to know about the world around them and how things work.”

² Carlone, H.B. & Johnson, A. (2007) “Understanding the Science Experiences of Successful Women of Color: Science Identity as an Analytic Lens.” *Journal of Research in Science Teaching* 44(8): 1187-1218.

theNAT's intentions as presented in the RFP

“The intent is to turn what could easily have been a traditional gallery full of old books into a chance for visitors to reflect on their own identities and capacities. We hope to have told a story that dissolves perceived barriers between professional and amateur and between science and art, and that offers up a more inclusive model of what it means to “do” science.

We articulated these goals early in the process, but their merits were underscored by a literature review we conducted in order to better understand what goes into the formation of a person's “science identity”—into the factors at play in how learners come to think about themselves as someone who knows about, uses, and sometimes contributes to science (NRC 2009, Fenichel & Schweinbruber 2010). Our research showed us that age, gender, and race all factor into the formation of a person's science identity. For example:

- ◆ Identity formation being particularly intense during adolescence, many students may make a decision about whether or not to pursue a science degree or career by age 14 (Erikson 1968, Tai *et al* 2006, The Royal Society 2006).
- ◆ Women and minorities face particular discouragement and challenges in the formation of a science identity (Brickhouse 1994, Brickhouse 1999, Brickhouse & Potter 2001, Brown 2004, Carlone & Johnson 2007, Johnson 2007, Nosek *et al* 2002, NSF 2015, Smyth *et al* 2009, Tajfel & Turner 2004, Wenger 1998).
- ◆ People with a strong arts/humanities identity may have negative associations with science and math, with both women and men more likely to link arts and humanities with being female and with science and math being male (Nosek *et al* 2002, Smyth *et al* 2009).

If our goal is to offer visitors a more inclusive understanding of science identity, being aware of these factors is critical. We saw a number of implications for the exhibition, and attempted to articulate and address them as follows:

- ◆ More people may be able to see themselves as citizen scientists if we offer them a broad definition of what it means to participate in science...
- ◆ The exhibition's content might connect with a new—if not necessarily broader—audience if it is framed and presented as a humanities exhibition emphasizing beautiful books, art, history, and stories about people...
- ◆ More people may be able to see themselves as potential citizen scientists if the image of the citizen scientists we present is inclusive of women and minorities...

Having made these exhibit development and design decisions mindfully, we are very curious about how our messaging will, in fact, resonate with visitors—in particular with women, people of color, and adolescents.

Regardless of visitors' science identity, though, the majority of visitors were able to identify a new dimension of their science identity as a result of the exhibition, and people of color were most inclined to be able to identify a new dimension to their science identity. Ultimately, as theNAT had theorized, offering a broad definition of science in the exhibition and highlighting individuals who participate in science in a non-traditional way was effective to some extent in helping visitors expand their concept of scientists and how they identify with scientists.

Notably, however, visitors did not leave the exhibition expressing how they identified with individual people represented in the exhibition. Sometimes this was because visitors did not read enough. Other visitors described the individuals as interesting and enjoyed hearing their stories, but they did not feel a strong connection or recognition of themselves in these individuals. This was one of the concerns of theNAT: given that the selection of objects limited the diversity of the individuals represented, and thus, it would limit visitors' ability to make connections from the people to themselves and science. However, the findings also show that being able to identify with one individual is not necessarily the key to helping visitors unlock their science identity. Rather, seeing many people who participate in science in various ways was fundamental in helping visitors envision science beyond the stereotypical lab and in an inclusive way.



Out of the lab

“[It shows that science includes] more of the things you see in your everyday life: like, plants or animals, and things that you wouldn't consider. Because for me personally, when I think of science, I think of a laboratory, or something that's not visually appealing, cool, or interesting to learn about. So when [this exhibition] comes at [science] from history—which a lot [more] people are really interested in—and English, reading, and writing . . . I think bringing them together makes it more clear that anybody can do it.”

STUDY BACKGROUND

The San Diego Natural History Museum (theNAT) contracted RK&A to conduct a study of visitors to *Extraordinary Ideas from Ordinary People: A History of Citizen Science* in November and December 2016. The goal of this study is to assess the successes and challenges of the exhibition as well as explore how well the exhibition communicates an inclusive view of science. The big idea and outcomes directed theNAT in this exhibition are:

Big idea:

For much of what we know about natural history, we can thank citizen scientists.

Outcomes:

Visitors will:

- ◆ Experience excitement, interest, and motivation to learn about the natural world and the history of science.
- ◆ Reflect on science as a way of knowing, including the institutions of science, and on their own process of understanding science and the natural world.
- ◆ Explore the possibilities of their own identity as someone who knows about, uses, and sometimes contributes to science.

STUDY OBJECTIVES

Specifically, the objectives of the study were:

1. What are visitors' level of engagement with the exhibition?

- ◆ How long are they staying?
- ◆ Which exhibit elements are the most- and least-attended to?
- ◆ Are there indicators that visitors are reading the exhibit text?
- ◆ Are visitors engaging in social behaviors such as reading aloud, pointing, or calling over other members of their social group to share something?
- ◆ Are people engaging in conversations around exhibit elements?

2. How are visitors engaging with the digital touchscreen interactives?

- ◆ Do the interactives encourage a long dwell time?
- ◆ Are visitors in groups having social experiences while using the interactives?
- ◆ Are the interactives presenting visitors with any frustrations or challenges?

3. **Are visitors going upstairs to visit the other areas of the gallery space?**
4. **What meanings are visitors making from the exhibition? Are they taking away some version of the big idea?** The big idea is: For much of what we know about natural history, we can thank citizen scientists.
5. **How are the exhibition’s messages about citizen science resonating with visitors?**
 - ◆ Do visitors understand the term “citizen science”?
 - ◆ How, if at all, do visitors perceive themselves as citizen scientists (or potential citizen scientists)?
6. **In what ways, if any, has theNAT communicated a more inclusive model of what it means to “do” science through the exhibition?**
 - ◆ What are visitors’ science identities?
 - ◆ How, if at all, have visitor’s ideas about what it means to do science changed?
 - ◆ How do visitors’ ideas about doing science and the perception of its portrayal vary by target audiences: women, youth (10-17 years), and non-Caucasian/White visitors?

The first three study objectives focus on behavioral questions and were addressed in the timing and tracking methodology. Objectives four through six are meaning-making questions which were explored through exit interviews with visitors.

METHODOLOGY

RK&A employed two methods described in detail below.

TIMING AND TRACKING OBSERVATIONS

Timing and tracking observations provide an objective and quantitative account of how visitors experience *Extraordinary Ideas*, including which components visitors use, for how long, and how visitors behave. Timing and tracking observations document visitor behaviors in a standardized manner, which we analyzed statistically.

Observations are unobtrusive, so visitors were not asked to participate, but they were selected randomly upon entering the exhibition. To select visitors, the observer imagined a line at the exhibition’s entrance and selected the first visitor age 10 years and older to cross this imaginary line. Once the visitor crossed the line, the observer started a stopwatch and discreetly observed the movements of the selected visitor through the exhibition, recording the components used, time spent, and behaviors (see Appendix A for the timing and tracking form).

INTERVIEWS

To complement the standardized observation data, RK&A conducted in-depth interviews to understand the meanings visitors make from the exhibition. We asked open-ended questions to encourage interviewees to share their opinions, understandings, and the meanings they construct using language and words that they naturally use to express themselves (as opposed to the language of the evaluator or researcher). The interviews also explored visitors' science identity. Carlone and Johnson's three-pillar model of science identity was used to develop the interview guide; the pillars established include performance (publicly visible ways of talking about science, demonstrating scientific skills, and using scientific tools), recognition (recognizing one's self or being recognized by others as a "science person"), and competence (knowing and understanding scientific content).³

The data collector used an interview guide (see Appendix B and C) to frame the discussion and asked probing and clarifying questions as necessary. Visitors 10 years and older who speak English or Spanish were eligible to participate. Interviewees were selected randomly at the exit of the exhibition. All interviews were audio-recorded and transcribed to facilitate analysis.

DATA ANALYSIS AND REPORTING

TIMING AND TRACKING OBSERVATIONS

Data are quantitative and were analyzed using IBM SPSS Statistics Version 20. Observation analyses include:

- ◆ Frequency distributions (e.g., percent of visitors to stop at a component)
- ◆ Summary statistics (e.g., median time spent at a component)
- ◆ Inferential statistics⁴ to examine the relationship among variables, including:
 - Cross-tabulations to show the joint frequency distribution of the variables, and the chi-square statistic (X^2) to test the significance of the relationship (e.g., "stop" [yes or no] was tested against "gender" to determine whether components were attractive to a particular gender).

³ Carlone, H.B. & Johnson, A. (2007) "Understanding the Science Experiences of Successful Women of Color: Science Identity as an Analytic Lens." *Journal of Research in Science Teaching* 44(8): 1187-1218.

⁴ A 0.05 level of significance (p) was employed to preclude findings of little practical significance. When the level of significance is set to $p = 0.05$, any finding that exists at a probability (p -value) ≤ 0.05 is "significant." When a finding (such as a relationship between two variables) has a p -value of 0.05, there is a 95 percent probability that the finding exists; that is, in 95 out of 100 cases, the finding is correct. Conversely, there is a 5 percent probability that the finding would not exist; in other words, in 5 out of 100 cases, the finding appears by chance.

- The Kruskal-Wallis (K-W) test, which is a nonparametric test for differences in the medians of two or more groups⁵ (e.g., “total time in the exhibition” was compared by “gender” to determine whether time spent in the exhibition differed by gender).

INTERVIEWS

Interviews were analyzed qualitatively. That is, the evaluator read the interview transcripts and used codes to identify patterns and trends in the data. Trends are reported by thematic section from most- to least- frequently occurring. Verbatim quotations, edited for clarity, are included to exemplify trends. Also, note that the interviews were analyzed intersectionally by two target audiences, women and people of color, as well as education. We also intended to look at youth 10-18 years but the sample was too small.

⁵The Kruskal-Wallis (K-W) test is a nonparametric statistical method for testing the equality of population medians of two or more groups. Nonparametric statistical methods do not assume that the underlying distribution of a variable is “normal” with a symmetric bell-shape, so they are appropriate for testing variables with asymmetric distributions such as “total time in the exhibition.” The K-W test is analogous to a One-way Analysis of Variance, with the scores replaced by their ranks. The K-W test statistic H has approximately a chi-square distribution.

TIMING AND TRACKING FINDINGS

RK&A observed 105 visitors 10 years and older in *Extraordinary Ideas* between November and December 2016. Observations were conducted on weekdays and weekends between 11:00am and 4:30pm.

DATA COLLECTION CONTEXT

PASSERS-BY

Extraordinary Ideas is on the third floor of the museum in what was once a library space available to the public upon request. The entry of *Extraordinary Ideas* has glass doors, although one of the doors was open throughout data collection. Given the new designation of the former library space for exhibition and the presence of doors, RK&A began observing visitors outside of the exhibition entrance to determine how many visitors may have chosen *not* to visit the exhibition. Through random selection, RK&A selected 127 visitors for observation; 17 percent of these visitors did not enter the exhibition (22 visitors). There is no statistical difference between visitors who entered the exhibition and those who did not in terms of gender, age, and group composition.

RK&A was able to intercept almost all of the passers-by (21 visitors) to ask why they chose not to visit the exhibition, and some gave several reasons. The greatest percent of passers-by said the exhibition did not look interesting to them (42 percent). About one-quarter said they did not know they could visit the exhibition (24 percent), and another one-quarter said gave no particular reason (24 percent). Other reasons include: three who said they are short on time, one said she visited the exhibition during his/her last visit, and one man said the exhibition looked “too dark/scary” for his child who is 6-9 years old.

Reasons for not visiting the exhibition

Reasons (n=21)	Passers-by %
Did not look interesting	42
Did not know I could visit	24
No particular reason/visiting other exhibits	24
Short on time	14
Visited the exhibition on my last visit	5
“Too dark/scary” for my child (age 6-9 years)	5

DATA COLLECTION CONDITIONS

Of the observations conducted, many were completed in November (70 percent), including the weekend following Thanksgiving, which traditionally has high rates of visitation. Many observations were conducted on weekends (65 percent) including some days with special family programming. The exhibition was typically not crowded (crowded during 13 percent of observations), and less than one-half of observations were conducted when a component was broken (42 percent).⁶

Data collection conditions

Month (n=105)	Observations
	%
November	70
December	30

Day (n=105)	Observations
	%
Weekend	65
Weekday	35

Crowding in the exhibition (n=105)	Observations
	%
Few	45
Moderate	42
Crowded	13

Exhibit components (n=105)	Observations
	%
No broken components	58
Broken components	42

⁶ Components recorded as broken were the Carole video, Lithography video, and Microscope interactive. There were also a few instances when the Edward Lear component was missing Citizen Science brochures.

OBSERVED VISITOR DEMOGRAPHICS

About one-half of observed visitors were female (52 percent) and largely between the ages of 18 and 54 years (80 percent). Observed visitors were primarily split between groups of adults and children (46 percent) and adult-only groups (43 percent), with another 11 percent of observed visitors attending as single adults. When possible, the data collector noted the language spoken by the observed visitors; most were overheard speaking English only (86 percent).

Demographics of observed visitors

Gender (n=104)	Visitors %
Female	52
Male	48

Age, in years (n=104)	Visitors %
10-17	3
18-34	44
35-54	36
55+	17

Group composition (n=105)	Visitors %
Adults and children	46
Adult-only group	43
Single adult	11

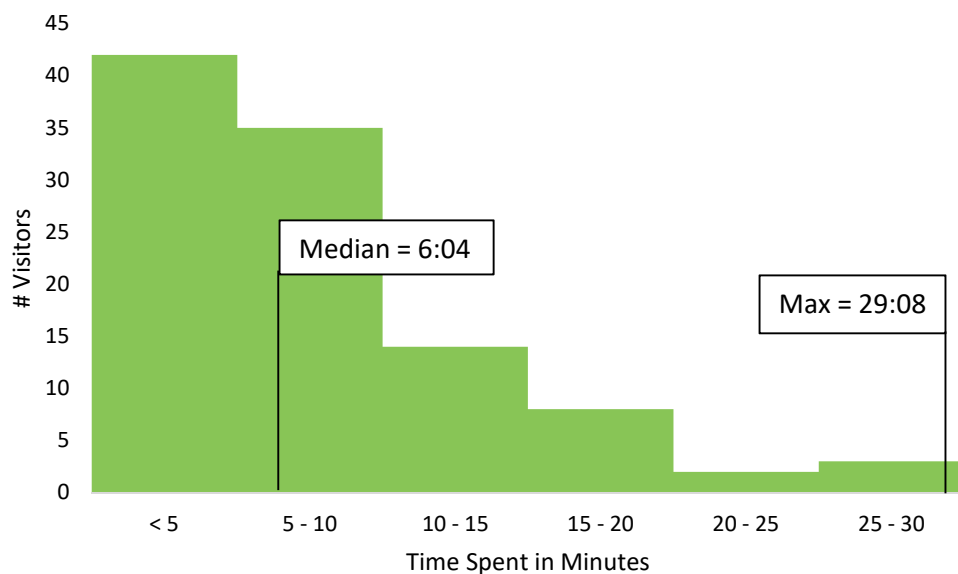
Age of children, in years (n=47 groups with children)	Visitors %
< 5	40
6-9	64
10-13	17
14-17	6

Language (n=88)	Visitors %
English	86
Spanish	5
English and Spanish	3
Other language	6

TIME SPENT IN EXHIBITION

Observed visitors spent between 36 seconds (0:36) and 29 minutes 8 seconds (29:08) in the exhibition. Time spent in the exhibition does not follow a normal distribution, as is typical for exhibition visitation time data. As seen in the histogram below, many visitors spent a short amount of time in the exhibition (e.g., 40 percent of visitors spent less than 5 minutes in the exhibition). The median time spent in *Extraordinary Ideas* was 6 minutes 4 seconds (6:04).⁷

Histogram of time spent in the exhibition



STATISTICALLY SIGNIFICANT VARIABLE

There is one variable that affects time spent in the exhibition—visitors in groups with children are likely to spend more time in the exhibition than visitors who are not with children (median time of 7 minutes 33 seconds [7:33] for visitors with children versus median of 4 minutes 12 seconds [4:12] for visitors without children).

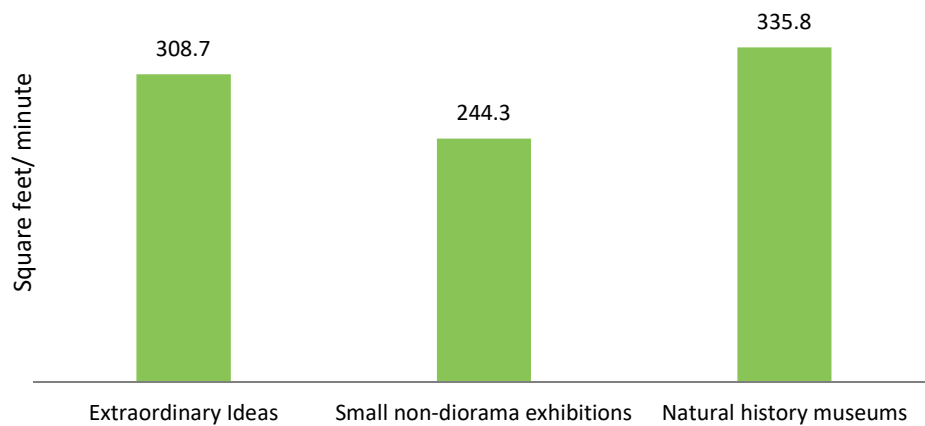
⁷ Medians (versus means) are reported because, as is typical, the number of exhibits used and the time spent by visitors are distributed unevenly across the range. When the distribution of scores is extremely asymmetrical (i.e., “lopsided”), the mean is affected, and consequently, falls further away from the distribution’s central area. In such cases, the median is a better indicator of the distribution’s central area because it is not sensitive to the values of scores above and below it.

SWEEP RATE INDEX

To compare the total time spent in *Extraordinary Ideas* with other exhibitions of similar size, RK&A used Serrell’s “Sweep Rate Index” (SRI).⁸ It is calculated by dividing the exhibition’s square footage⁹ by the average adults’ total time spent in the exhibition.¹⁰ The lower the SRI, the more time visitors spent per square foot of space.

The average adult total time spent in *Extraordinary Ideas* is 7 minutes 45 seconds (7:45). Thus, the SRI for *Extraordinary Ideas* is 308.7 square feet per minute. This SRI is higher than Serrell’s average SRI for small non-diorama exhibitions (<3,900 sq. ft.), but smaller than for natural history exhibitions in general.

Sweep Rate Index



⁸ Serrell, B. (1998). *Paying Attention: Visitors and Museum Exhibitions*. Washington, D.C., American Association of Museums.

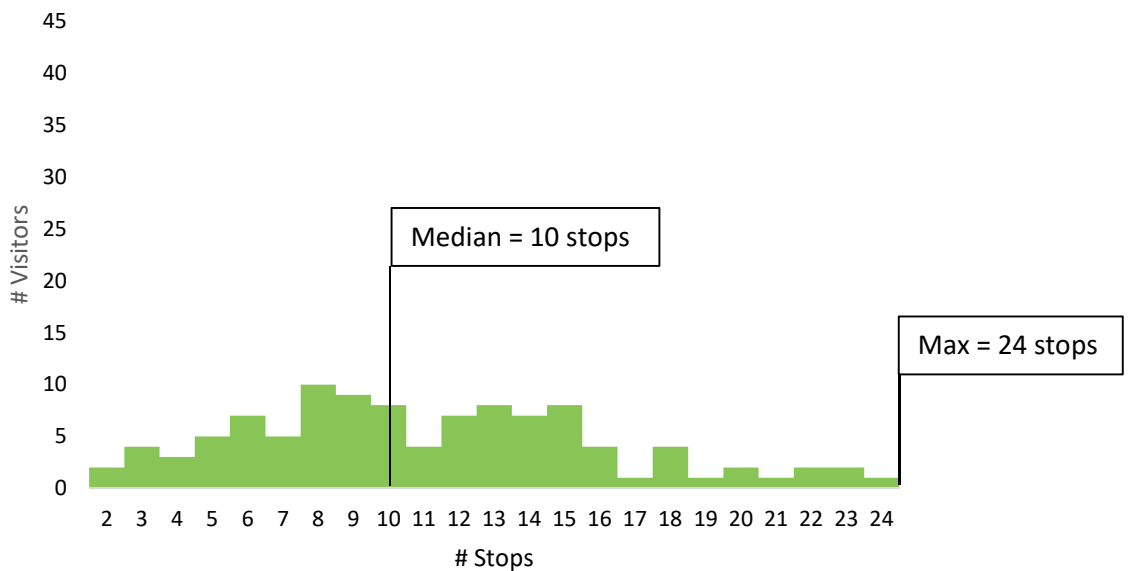
⁹ *Extraordinary Ideas* is 2,300 sq. ft.

¹⁰ Mean total times were used in the SRI calculation in accordance with Serrell’s methods. Throughout the rest of the report, median times are reported, as the median is standard for time data unevenly distributed across its range. Additionally, children’s time spent was removed in accordance with Serrell’s methods.

NUMBER OF STOPS IN EXHIBITION

RK&A and theNAT identified 45 components or areas in the exhibition (see the identified components on the timing and tracking form in Appendix A)¹¹. Components were selected because they are distinct and observable sections in the exhibition. Components vary in size; some are small (e.g., singular text panel or touchscreen) and some are large (e.g., Book Nook). Of the 45 components, observed visitors stopped at between two and 24 components. Like time, the number of stops does not follow a normal distribution (see the histogram below), with many visitors stopping at few components (e.g., 33 percent of visitors stopped at eight components or less). The median number of components stopped at is 10.

Histogram for number of stops

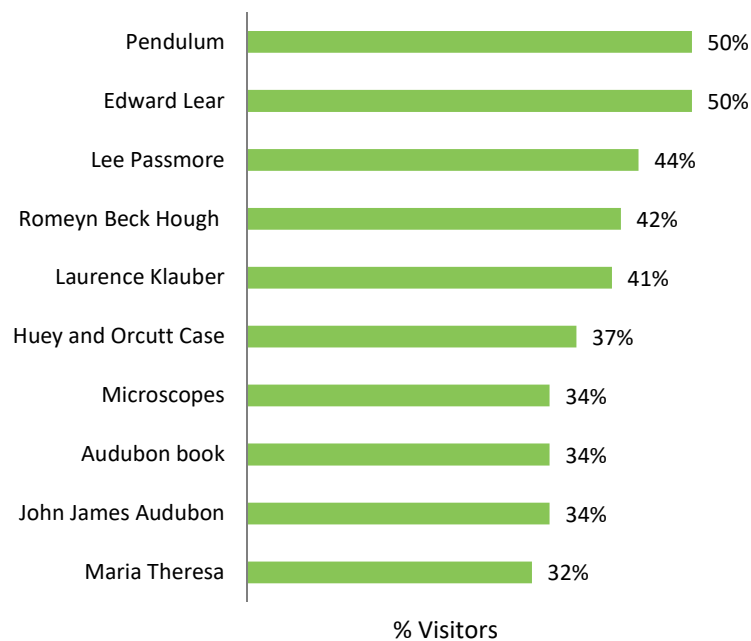


¹¹ Note that the number of components is inflated because the stairs, landing, sofa upstairs in the mezzanine, restroom, and elevator are counted as a component so that we could account for time spent there. Also, interactives are counted as their own component although they are imbedded into larger components so that we could account for time specifically for using the interactive.

NUMBER OF STOPS AT INDIVIDUAL EXHIBITION COMPONENTS

In looking at individual components, the ten most stopped at components include several different types of components; see Appendix D for stop percents for all component. The Pendulum and the Edward Lear component were most stopped at (50 percent of visitors stopped). The other most visited components are the Lee Passmore component (44 percent stopped), the Romeyn Beck Hough component (42 percent stopped), and the Laurence Klauber component (41 percent stopped).

Most stopped at exhibition components



STATISTICALLY SIGNIFICANT VARIABLES

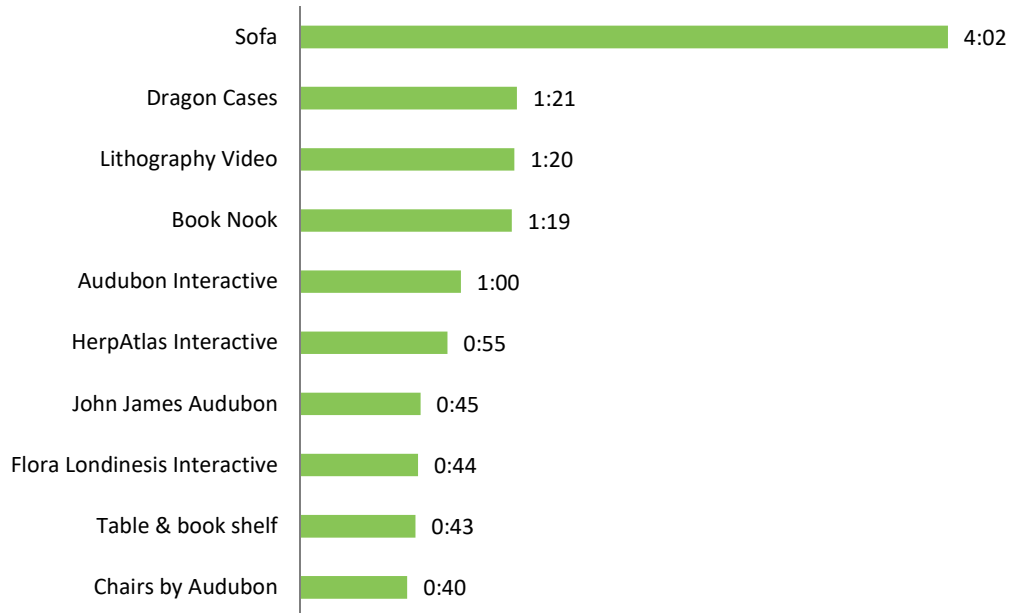
There is one variable that has a statistical relationship to component stops:

- ◆ **Group composition** – Groups with children are more likely to stop at the Pendulum than adult-only groups ($\chi^2 = 7.2$; $p = 0.03$).

TIME AT INDIVIDUAL EXHIBITION COMPONENTS

Four of the top-ten dwell times are for components on the second floor of the exhibition area; the Sofa component has a median dwell time of 4 minutes 2 seconds (4:02), while the Book Nook, the Dragon Cases, and the Table and book shelf has shorter but still high-dwell times at 1 minute 21 seconds (1:21), 1 minute 19 seconds (1:19), and 43 seconds. One of the most stopped at components was also among the components with the highest dwell times: the Lithography Video (median time = 1 minute 20 seconds, 1:20) is part of the Edward Lear component. Three other interactive components also had a high dwell times; Audubon at 1 minute, HerpAtlas at 55 seconds, and Flora Londinesis at 44 seconds.

Median time at most stopped at components

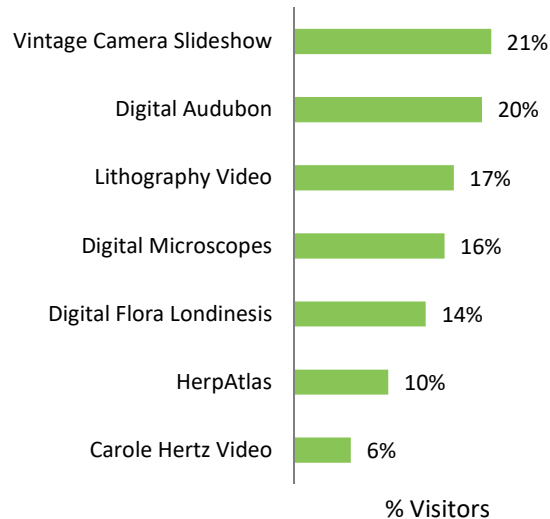


INTERACTIVE/MEDIA EXHIBITION COMPONENTS

STOPS AT INTERACTIVE/MEDIA COMPONENTS

More than one-half of observed visitors stopped at one interactive or media component or more during their time in the exhibition (58 percent). Visitors did not tend to stop at interactive and media components more than traditional exhibition components (see **Error! Reference source not found.**), however two of the longest component dwell times are for interactives. The interactive most often stopped at was the Vintage Camera Slideshow (21 percent), followed by the Digital Audubon interactive (20 percent), and the Lithography Video (17 percent).

Stops at interactive/media components



STATISTICALLY SIGNIFICANT VARIABLES

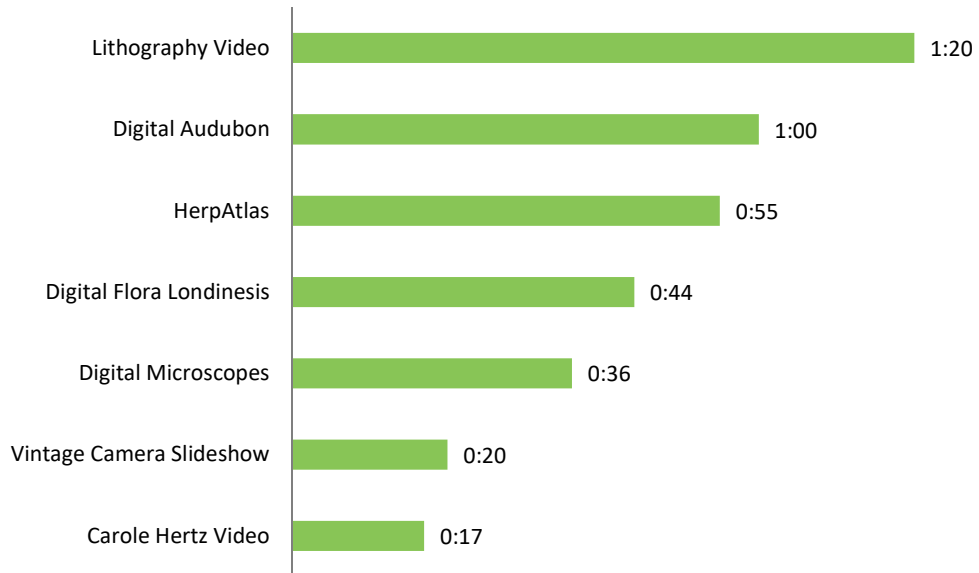
There are two variables that have a statistical relationship to component stops:

- ◆ **Group composition** – Overall, groups with children are more likely to stop at interactives than adult-only groups ($x^2 = 4.1$; $p = 0.04$). And groups with children are more likely to stop at Digital Microscopes ($x^2 = 5.0$; $p = 0.02$), Digital Flora Londinesis ($x^2 = 5.4$; $p = 0.02$), and HerpAtlas ($x^2 = 10.1$; $p = 0.00$).
- ◆ **Gender** – Women are more likely than men to stop at Digital Microscopes ($x^2 = 7.3$; $p = 0.03$) and the Lithography Video ($x^2 = 7.0$; $p = 0.03$).

TIME SPENT AT INTERACTIVE/MEDIA COMPONENTS

The interactive with longest dwell time is the Lithography Video at 1 minute 20 seconds (1:20), followed by the Digital Audubon interactive at 1 minute, and the HerpAtlas at 55 seconds (0:55).

Median time spent at interactive/media components



STATISTICALLY SIGNIFICANT VARIABLES

There is one variable that has a statistical relationship to component stops:

- ♦ **Total time** – Visitors who stopped at interactives spent more time in the exhibition than visitors who do not stop at interactives (median time of 8 minutes 13 seconds [8:13] for visitors who stopped at interactives versus median of 3 minutes 47 seconds [3:47] for visitors who did not stop). This is true for all individual interactives.

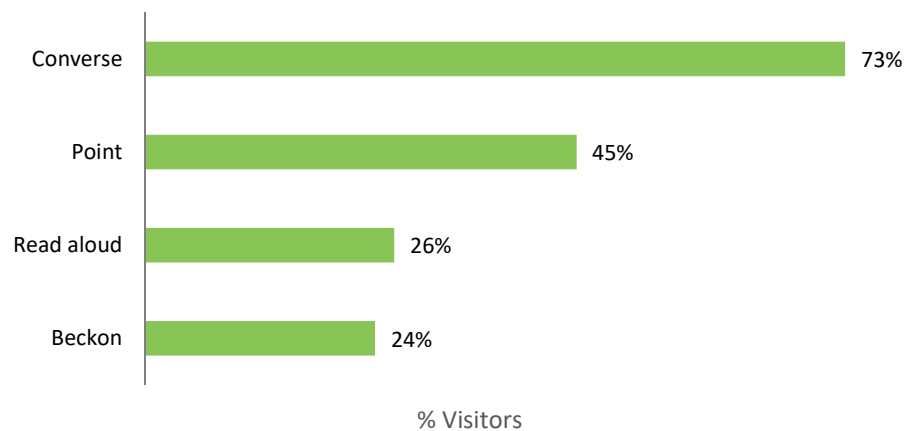
BEHAVIORS

During the observations, data collectors looked for several pre-determined behaviors. Four social behaviors (converse, point, beckon, and read aloud) and three general behaviors (talking with a volunteer, use of stools and taking photos) were observed across the exhibition.¹²

SOCIAL BEHAVIORS

Social behaviors occurred most often: 73 percent of visitors were observed conversing with others in their group or another group; 45 percent were observed pointing out something in the exhibition to another visitor; 26 percent were observed reading exhibit materials aloud for another visitor, and 24 percent were observed beckoning another visitor to join him/her at a component.¹³

Social Behaviors



STATISTICALLY SIGNIFICANT VARIABLES

There is one variable that has a statistical relationship to component stops:

- ◆ **Group composition** – Groups with children were more likely than adult-only groups to converse ($\chi^2 = 15.2$; $p = 0.00$), point ($\chi^2 = 11.2$; $p = 0.00$), beckon ($\chi^2 = 6.6$; $p = 0.01$), and read aloud ($\chi^2 = 8.9$; $p = 0.00$).

¹² See Appendix D for the complete behavior data, including component-specific behaviors.

¹³ Since the observations are unobtrusive, “read aloud” is a difficult behavior to capture as the data collector has to be in close proximity to the observed visitor. Therefore, we can assume it may have happened more often than is reported here.

OTHER BEHAVIORS

Use of stools occurred less often. Stools were used by 20 percent of visitors. Stools were most often used at components that included interactive elements, like the Microscopes of Victorian England component and interactive, the Edward Lear component and Lithography Video, the Botanical Illustrators of the Flora Londinensis component and interactive, the Lee Passmore component and Vintage Camera Slideshow, and the Audubon Book and interactive.

Photos that included people (e.g., selfies) were taken by 12 percent of visitors, and photos of objects were taken by 8 percent of visitors. Popular photo locations include the Tortoise Shell (3 visitors took a photo); the large frog (6 visitors took a photo); the Dragon Case (3 visitors took a photo), and the Book Nook (6 visitors took a photo).

Other behaviors



STATISTICALLY SIGNIFICANT VARIABLES

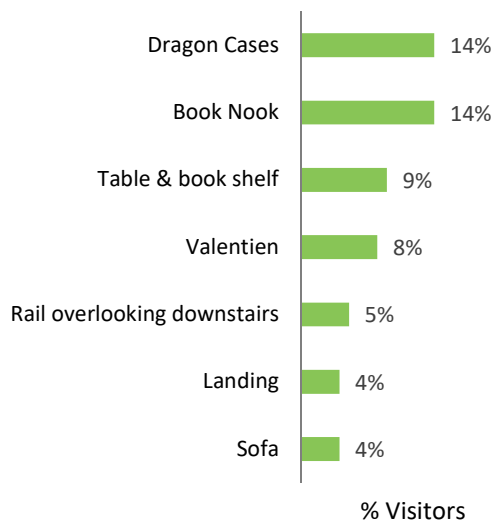
There is one variable that has a statistical relationship to component stops:

- ◆ **Time Spent in Exhibition** – Visitors who use stools spent more than twice as much time in the exhibition (median time of 13 minutes 19 seconds [13:19] compared to visitors who did not use a stool (median of 5 minutes 5 seconds [5:05]).

MEZZANINE VISITATION

About one-quarter of observed visitors explored the upstairs Mezzanine of *Extraordinary Ideas* (23 percent). Observed visitors spent between 13 seconds (0:13) and 14 minutes 1 second (14:01) on the second floor, with a median time of 3 minutes 22 seconds (3:22). Of the seven components upstairs, observed visitors most often stopped at the Dragon Case (14 percent) and the Book Nook (14 percent).

Stops Upstairs



STATISTICALLY SIGNIFICANT VARIABLES

There is one variable that has a statistical relationship to component stops:

- ♦ **Group Composition** – Visitors in groups with children spent more time on the Mezzanine level than adult-only groups (median time of 5 minutes 11 seconds [5:11] compared to visitors who did not use a stool (median of 2 minutes 23 seconds [2:23])).

INTERVIEWS

RK&A interviewed 100 visitors to *Extraordinary Ideas* between November and December 2016.¹⁴ RK&A invited 215 visitors 10 years and older to participate in interviews. A total of 111 visitors declined to participate in the interview, and two were ineligible because they did not speak English or Spanish proficiently. The participation rate is 49 percent. Of those who declined interview participation, more than one-third said they were short on time, with some naming other places they were visiting that day, and a few noting they had tickets for a film in the museum's theater. Several others declined because of their children, and a few declined because they said they had not spent much time in the exhibition.

INTERVIEW CONTEXT

VISITOR DEMOGRAPHICS AND CHARACTERISTICS

Among those visitors interviewed:

- ◆ 60 percent were visiting theNAT for the first time.
- ◆ 54 percent identified as male, 45 percent as female, and 1 percent did not specify.
- ◆ All but three were 18 years or older, with a median age of 35.
- ◆ 85 percent were residents of the United States.
- ◆ 60 percent identified as Caucasian, 14 percent as Asian/Pacific Islander, 13 percent as Hispanic/Latino, and 3 percent as African-American/Black; also, 3 percent identified another ethnicity, and 7 percent identified with multiple ethnicities.
- ◆ 72 percent are college graduates, including 37 percent who hold a graduate or professional degree and 35 percent hold a Bachelor's degree.
- ◆ 54 percent were visiting theNAT with other adults, 28 percent were visiting with children, and 13 percent were visiting on their own.

REPRESENTATION OF THE SAMPLE

RK&A compared the observed demographics of visitors who declined interview participation to those who agreed. Visitors are similar in gender but differ statistically by age and group composition. That is, visitors age 35-54 years and those with children are underrepresented in the interview sample.

¹⁴ Among these, five visitors were not recruited through the random sampling method (i.e., a recruited family or other group member volunteered them to participate). Two interviews were excluded from the overall sample due to missing or incomplete data. One interview was conducted in Spanish and translated into English for analysis.

ANALYTICAL FRAMEWORK

RK&A analyzed all interviews qualitatively; that is, we identified trends and patterns in responses and have reported them based on the entire sample. Additionally, theNAT asked us to explore how visitors’ perceptions of science and self-assessments of their “science identities” may differ by three populations of interest, specifically women, people of color, and adolescents. RK&A approached analysis of interviewees’ responses to relevant questions intersectionally. “Intersectionality” is a tool for studying how different sets of identities impact people’s experiences and access to opportunities, acknowledging, for example, that an African-American adult woman would experience the world differently than a Caucasian adult woman, African-American man, and African-American female teenager.¹⁵

Overall, due to the relative homogeneity of theNAT visitors, opportunities to generalize from more intersectional demographics (presented in the Table 1 below¹⁶) were limited. In reporting the findings, however, we note differences by audiences of interest as relevant.

Number of interviewees per population intersection

	Female Adults (18+ years)	Female Children (10-18 years)	Male Adults (18+ years)	Male Children (10-18 years)
Caucasian/White	23	1	36	0
Asian/Pacific Islander	8	0	6	1
Hispanic/Latino	6	1	6	0
African American/Black	3	0	0	0
Mixed	2	0	4	0
Other	1	0	1	0

¹⁵ The naming of this concept is attributed to Kimberlé Crenshaw, though it has been further developed since in feminist and legal theory. For origins, see Crenshaw K. (1989) “Demarginalizing the Intersection of Race and Sex: A Black Feminist Critique of Antidiscrimination Doctrine, Feminist Theory, and Antiracist Politics. University of Chicago Legal Forum. And Crenshaw, K. (1991). “Mapping the Margins: Intersectionality, Identity Politics, and Violence Against Women of Color.” Stanford Law Review.

¹⁶ We have presented all race/ethnicities self-identified in Table 1. Because the number of interviewees is spread across several race/ethnicities, we also compared Caucasian visitors to visitors of color (inclusive of African-American/Black; Hispanic/Latino; American Indian; and mixed-race interviewees who identified with one of those groups). Grouping in this way provides more opportunities for trends to surface, and studying interviewees of color vis-à-vis those three groups corresponds with the literature highlighting the disproportionate representation of Asians in scientific careers and the barriers facing Hispanic/Latino, African-American/Black, and Alaskan Natives or American Indians specifically. See National Science Foundation (2015) Women, Minorities, and Persons with Disabilities in Science and Engineering.

MOTIVATIONS FOR VISITATION

TO THE MUSEUM

When asked what made them decide to visit theNAT:

- ◆ **Interest in the museum** – Two-thirds of interviewees described an interest in the museum, though the specificity of their responses varied:
 - About one-quarter identified themselves as visiting from “out of town” and “sightseeing,” with a few noting the museum had been recommended to them.
 - About one-quarter said they had been generally curious about theNAT, stating that it “sounded” interesting and they “thought they’d like to come.”
 - About one-fifth described a specific interest in the museum, with several acknowledging they liked “natural history” or “natural history museums.” Another several mentioned part of the museum they or a family member had been curious about, such as the *Animals: Machines in Motion* exhibition.
- ◆ **Motivated by visiting with others or a group** – About one-quarter stated they came to the museum as part of a group. Among these, about one-fifth attended with members of their family, with several noting their kids had been interested in visiting. A few attended with a school or volunteer group.
- ◆ **Free admission** – Several said they came to the museum either because it was “Free Tuesday,” they had been given a free pass, or they had won a free membership.

TO THE EXHIBITION

When asked why they visited *Extraordinary Ideas* specifically:

- ◆ **No specific reason** – About two-thirds did not have a specific reason for visiting:
 - One-quarter said they were “going through all the exhibits” to “see everything.”
 - About one-quarter stumbled upon the exhibition “just [by] walking around.”
 - Several said they were generally curious, without elaborating why.
- ◆ **Specific reason for visiting** – Slightly less than one-third of interviewees described themselves as particularly curious about the exhibition or exhibition space, albeit for varying reasons:
 - A few discussed their personal interest in the exhibition, noting, for instance, they were “fascinated by citizen science.”
 - A few said the exhibition was recommended by a family member or a staff member “downstairs” who “mentioned the book collection.”
 - A few stated they were interested in the exhibition because it was “new” or because they had never seen the special collections space “open” before.
 - A few stated the entrance had attracted them, describing it as having pleasing colors or noting the interesting “statues of books.”

WHAT VISITORS ANTICIPATED THE EXHIBITION WOULD BE ABOUT

When asked what, if anything, they thought *Extraordinary Ideas* was about before they visited it:

- ◆ **Uncertain** – Almost one-half of interviewees said they had had “no idea.”
- ◆ **Books** – About one-fifth thought it might be about books. Among these, a few said they expected the exhibit to contain “illustrations” or “drawings” specifically, and another few had assumed the space was a “library” or held “museum archives.” One said the entrance with books around the door suggested this.
- ◆ **Natural History** – About one-fifth thought it would contain information on “natural history,” “fossils and stuff,” “dinosaurs,” nature (including “plants” and “animals”), or other materials related to theNAT’s broader collection.
- ◆ **Citizen scientists** – Several assumed it would be about citizen scientists, though their descriptions of that topic ranged in both specificity and accuracy:
 - Several, including a few who specifically highlighted the exhibition title as a helpful clue, provided a clear description of citizen scientists. For example, they said they had expected the exhibition would be about “individuals who were not trained necessarily as scientists, but who contributed to the overall expansion of human knowledge.”
 - A couple of interviewees described citizen science but inaccurately. For example, one participant thought the exhibition was about “ordinary citizens who were collecting data for scientists.”

Ordinary people doing extraordinary things

“I saw the [exhibition] name. [I thought it was about], like, extraordinary ideas and ordinary people, like citizen scientists, and just the idea that you don’t have to have necessarily a scientific background to make observations that can change things.”

MOST ENJOYABLE ASPECTS OF THE EXHIBITION

When asked what they liked most about the exhibition:

- ◆ **Objects** – About one-half of interviewees discussed the exhibition’s various objects:
 - About one-third mentioned the digitized and original books, commenting on the books’ ages, the time it must have taken to make them, and generally described them as “interesting.” Some praised the artistry of the books, referring to them as “vivid,” “beautiful,” and “pleasurable piece[s] of visual art.”
 - About one-fifth discussed miscellaneous objects, including the animal and plant specimens, the microscope, photographs, and “hand-drawn pictures” on display.
- ◆ **Exhibition ideas** – More than one-third said they appreciated the information and ideas presented, but elaborated on this differently and with varying levels of specificity. For example, they noted topics of personal interest like lithography or rattlesnakes, or more generally described the exhibition concept as “cool.” Also among these:
 - Several enjoyed learning about the different people showcased in the exhibition, while not explicitly linking those stories to citizen science. For example, they said many of the people featured “live[d] nearby” and “dedicated all their life and efforts and everything to studies of [various] things.”
 - A few discussed citizen science explicitly. For example, one interviewee stated he “liked the citizen science approach,” and another said: “I think it’s unique that [the exhibition] showcased normal people, instead of famous scientists or people that we’ve heard of.”
- ◆ **Exhibition design** – One-fifth liked the design and environment of the exhibition:
 - Several described it as “interactive,” acknowledging its many “touch screens,” opportunities to “flip through” old books and see what was inside, and different handling materials, such as the Galapagos shell.
 - A few spoke about the general design of the exhibition, describing it as “open” and “visually interesting” and praising its “lighting” and “layout.”
 - A few praised the special collections gallery as a “smaller, quieter” and more “peaceful” area of the museum.

The art of citizen science is beautiful

“The illustrations in the books were incredible . . . seeing how centuries ago, people made intricate, detailed and beautiful drawings. I was also struck by the whole concept that these were people who were not necessarily scientists by training, but by interest. [It was] just incredible how astounding everything [they made] was, even though they didn't have the formal training you would expect.”

LEAST ENJOYABLE ASPECTS

When asked what, if anything, worked less well about the exhibition:

- ◆ **Nothing** – More than one-half of interviewees said there was **nothing** that did not work well for them.
- ◆ **Exhibition design** – More than one-third commented on the design of the exhibition:
 - Several described the exhibition as “limited” or “small,” noting, for example, they would have liked to see a “bit more information” on the personal stories or a “variety of [scientific] subjects beyond biology.” A few said they would have liked to see more than “one page” of the rare books on display.
 - Several, a few of whom were traveling with children, said that beyond the touch screens and the “tortoise shell,” the exhibition was “less interactive” than they would have liked. While most generally expressed an interest in more “hands-on” elements or “tangibles” while not elaborating why, a few described the animal specimens in “formaldehyde” and the books behind glass as particularly “less interactive.”
 - A few interviewees discussed the presentation of information in *Extraordinary Ideas*. For instance, a few noted there was “lots of reading” they didn’t have “time” to get to. A couple of interviewees, both of whom acknowledged later in the interview they had not read the individual stories of citizen scientists, said that the main theme of the exhibition was not “clear” or “cohesive.”
- ◆ **Idiosyncratic responses** – Several spoke about idiosyncratic dimensions of the exhibition, including that it was less successful “grab[bing] kids’ attention,” it was “a little dim,” or it featured dead snakes, spiders, or birds that they disliked or otherwise “freaked” them out.

MEANING-MAKING

When asked what, if anything, they took away from the exhibition:

- ◆ **Learned something new** – About two-thirds of interviewees identified something new they had learned. The answers they provided varied, with no one dominant theme among them:
 - Several spoke about the books in the exhibition, commenting on their size, age, the process of making them, and the opportunity to see a “real object” they had only otherwise read about, such as Audubon’s books.
 - Several reflected on the exhibition’s main idea. For example, they described learning about how “ordinary people” could “be a scientist in their spare time,” and the idea that “one person can make a difference [in science] if they just decide to do it.”
 - Several discussed the “stories” of people featured in their exhibition, either to comment on gaining general “insight on their lives” or mentioning facts they had learned about specific figures, such as Audubon, Lear, and Napoleon.
 - Several offered more miscellaneous comments. For instance, they talked about learning more about the history of the microscope and of scientific documentation, or stated “everything” was new to them
 - Several mentioned learning more about natural history and discussed the “diversity” of species presented, seeing animals or plants unfamiliar to them, or learning more about “local” California natural history.
- ◆ **About one-third could not identify anything new.** Among these, a few stated *Extraordinary Ideas* presented information with which they were previously familiar, and a few said they could not answer the question because they did not spend enough time in the exhibition.

Learning about the people behind the discoveries demystifies science

“It was quite enlightening to see how much someone can contribute on their own, because you always feel like one person can’t do that much when it comes to this huge conundrum of every species, of every type, of organism in the world. It’s kind of neat to see that one person can actually make a difference, if they just decide to do it.”

“I never really think about the people who discover things; I just think about what they discovered. So I thought it was really interesting to get more insight on their lives.”

UNDERSTANDING THE EXHIBITION'S MAIN IDEA

WHAT *EXTRAORDINARY IDEAS* INTENDS TO COMMUNICATE

Interviewees were asked what the exhibition intended to communicate; responses include:

- ◆ **Natural history in general** – Almost one-half said the exhibition was about natural history or the history of natural history, with several referencing the plant and animal specimens or “old books” on display when justifying their response. These interviewees discussed “how plants and animals... evolved,” the “development of science and biology,” or the “documentation of wildlife and natural history” over time.
- ◆ **Citizen scientists** – One-third described an idea related to citizen science and tended to reference the people and stories featured in the exhibition when explaining their answer. Among them, the majority specifically referenced the idea that “anybody can be a scientist” regardless of formal training. Several spoke more generally, discussing “ordinary people” with a “magnificent obsession” for “study[ing] something different.”
- ◆ **Idiosyncratic responses** – Several offered idiosyncratic takeaways, including the general “importance” of science, conservation, evolution, or the history of the museum as seen through its archives. Among these, only a few explained their response.
- ◆ **Uncertain** – Several interviewees said they did not know what the exhibition communicates, with a few noting they didn’t spend very much time in the exhibition.

WHAT *EXTRAORDINARY IDEAS* INTENDS TO COMMUNICATE ABOUT SCIENCE

Interviewees were asked what the exhibition communicates about science specifically:

- ◆ **Inclusive view of science** – The majority discussed how the exhibition presented a broad, inclusive view of science in which various people participate. For example:
 - About one-quarter said the exhibition portrayed science as “available” or “accessible” by showing that “even the Average Joe” can contribute.
 - One-fifth said science is part of everyday life, “integrated into everything,” and thus not necessarily “done in a laboratory by people in white coats.”
 - Several said the exhibition framed science as “exciting,” with a few noting that it could potentially attract more people to science. For example, one interviewee acknowledged that for science to be “interesting,” it first had to be “fun.”

Interviewees pointed to several aspects of the exhibition that presented an inclusive view of science including the stories of citizen scientists and the exhibition’s “interactive” elements.

- ◆ **Science content generally** – Almost one-half said the exhibition presented information about science in general, and responses were varied and sometimes vague. Some described how the exhibition presented a history of “documentation” or recordkeeping or the broader idea that science was a “wide” field with a “long history.” Others said it showed “how species have evolved,” and several of these interviewees discussed how the exhibition conveyed science’s “importance.”

VISITORS' UNDERSTANDINGS OF "CITIZEN SCIENCE"

RK&A told interviewees the exhibition provided several examples of "citizen scientists" and asked if they were familiar with this term.

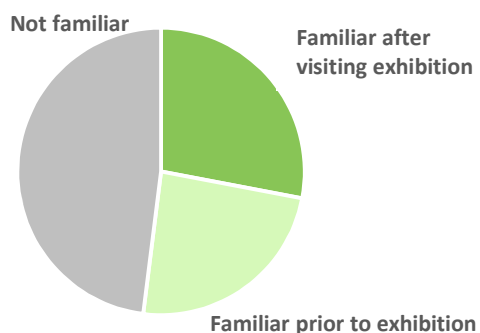
- ◆ **Familiar** – Slightly more than one-half of interviewees said they were familiar with the term "citizen scientist." More than one-quarter said the exhibition introduced them to the term, and about one-quarter said they were previously familiar with it.
- ◆ **Unfamiliar** – Slightly less than one-half of visitors said they were not familiar with the term "citizen scientist."

When asked what they thought "citizen scientists" means:

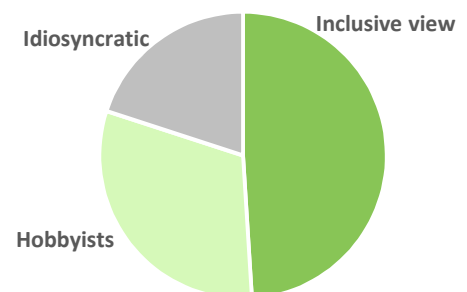
- ◆ **Inclusive view of science** – Almost one-half described an inclusive view of science in their answer, describing how a "layperson" who is not "formally trained" can "contribute" to scientific knowledge and "discoveries."
- ◆ **Hobbyists** – Slightly less than one-third spoke about citizen scientists as "hobbyist[s]" who have a "deep interest" in science, which they cultivate for "personal fulfillment." These responses stop short of describing citizen scientists as contributors to scientific knowledge.
- ◆ **Idiosyncratic response** – More than one-fifth, the majority of whom had stated they were not familiar with the term, offered idiosyncratic definitions. These tended to be general or even vague. For example, one visitor defined a "citizen scientist" as "someone who has some kind of inquiry about the world," while another said the term referred to "research about other people."

Familiarity with the concept of citizen scientists

The majority are familiar with the concept.



Almost one-half perceive citizen scientists inclusively (important contributors, not formally trained).



PERCEPTIONS OF SCIENCE

RK&A asked two association questions to understand interviewees' attitudes about science.

ASSOCIATIONS WITH THE WORD "SCIENCE"

When asked what comes to mind when they hear the word "science:"

- ◆ **Knowledge** – About one-half of interviewees discussed science as knowledge in subjects including chemistry, biology, physics, medicine, astronomy, and "nature" or "natural history" in general. Others discussed the more general idea of "learning," and a couple of interviewees spoke about scientific issues like "evolution" or conservation.
- ◆ **Process** – Almost one-half discussed science as process, including leading experiments, following the scientific or a "procedural" method of "observation" and "documentation," or more generally engaging in the study of "life," the "natural world," and the "world around us." Among these, several specifically talked about "discovery."
- ◆ **Personal connections** – About one-quarter shared personal connections or memories. Several said they or a family member worked in or studied a scientific field, including neuroscience, microbiology, and computer science. A few spoke about school experiences such as "dissecting frogs" or "learn[ing] about hypotheses."
- ◆ **Idiosyncratic associations** – About one-fifth offered idiosyncratic responses. For example, a few related science to progress and improvement, and another few described science in affective terms, associating it with "wonder," "excitement," and "fun."

ASSOCIATIONS WITH THE TERM "SCIENCE PERSON"

RK&A asked what, if anything, came to mind when interviewees' heard someone was labeled a "science person." Responses fell into two trends that are not mutually exclusive:

- ◆ **Traditional view of "science person"** – About two-thirds of interviewees took a narrow view. For example, some said they thought of science people as particularly "smart," "intelligent," and very "well-educated" or having "a lot of education." Others described science people who work in specific scientific disciplines, such as "astrophysics," or who work in "labs." Still others referred to what they acknowledged as "stereotypical" perceptions. For example, several discussed people who were "geeky," "nerdy" or "a little bit dorky in a good way," and another several spoke about picturing someone in a "lab coat." A couple said they thought of a "rocket scientist."
- ◆ **Inclusive view of "science person"** – About one-half took a broad view of science people. The majority described the qualities or personality traits. For example, several spoke about science people as being "curious," "inquisitive," "methodical," "analytical," or "logical;" and a few included "dedicated" or "focused." Others discussed science people's skills or interests. For example, they described a science person as someone who is "devoted to the why of our existence" or "oriented toward coming to conclusions based on factual data." Among these, a few noted that "science people" constitute a "diverse group" or a "wide cross-section" of people, and another few expressed the idea "we're all science people, if we're aware of the world."

SCIENCE IDENTITY

RK&A asked two questions early in the interview about interviewees' science identity. We also asked a third question later in the interview to encourage visitors to reflect on how, if at all, they thought about their science identity differently as a result of the exhibition. All responses were analyzed through the lens of whether interviewees' responses took a traditional view of the sciences versus an inclusive view, in which visitors can see themselves as potential scientists or citizen scientists. The responses are presented below by question.

SELF-ASSESSMENT OF DOING SCIENCE IN THEIR EVERYDAY LIFE

Interviewees were asked in what ways, if any, they do science in their everyday life or work. The first reflects a traditional view of “doing science,” and the second a more inclusive view.

- ♦ **Traditional view of “doing science”** – More than one-half associated science with skills and content deriving from the “hard sciences,” including the natural sciences, medical sciences, and mathematics. They tended to describe themselves as doing science or not doing science in the context of their work. Among them:
 - More than one-third comfortably described themselves as doing science in their professional or volunteer work, self-identifying as a “social scientist,” “professor of physics,” “physician,” or “neuroscientist,” or discussing a specific dimension of their work they saw as scientific. For example, one woman stated: “I studied nutrition. I’m a dietitian, so, [I use] more of the biology science, how things are digested and absorbed and different vitamins and minerals.”
 - Several offered a qualified or hesitant assessment of possible scientific dimensions of their work. For example, one interviewee said: “I’m in commercial property management, so I don’t use much [science]... I guess I use mechanical sciences, for equipment.” Another respondent, a math teacher, said: “Science does require mathematics in various areas.”
- ♦ **Inclusive view of “doing science”** – More than one-third described “doing science” as an inclusive process of learning, observing, and investigating. They tended to describe themselves as doing science in the context of personal activities. For example, several discussed becoming “more aware” about nature through time spent in the outdoors, including developing their ability to identify plants, learning about birds or animals, and gardening. Others mentioned “doing” science through cooking, by educating themselves about scientific issues, or spending time with their children when assisting with homework or going to museums.

RELATIONSHIP TO DEMOGRAPHICS

Self-assessment of doing science varied by education, gender, and race. For instance, interviewees with a college degree tended to have a traditional view of science, and thus, discussed “doing science” or not vis-à-vis their professional work. By comparison, interviewees without a college degree tended to have an inclusive view of science and believed they do science in their own way in their personal lives. Also, respondents who said they “don’t” do science without explaining why tended to be women, people of color, and those without a college degree.

SELF-ASSESSMENT AS A “SCIENCE PERSON”

Interviewees were asked in what ways, if any, they saw themselves as a “science person.” While a few said they were not science people without explaining why, visitors’ responses again stemmed primarily from “inclusive” versus “traditional” understandings of science.

- ◆ **Inclusive view of “science person”** – More than one-half of interviewees discussed “science people” as broadly curious, questioning, interested in “experimenting,” and reliant on logic. They did so in three specific ways:
 - ◆ About one-quarter said they were “science people” insofar as they were strongly interested in “learning” about science, either due to their personal interests in “comets” or “lizards” or a general “inquisitiveness” about the field.
 - ◆ About one-fifth of interviewees described taking a “scientific approach” to specific activities like cooking, identifying plants or animals as an amateur “naturalist,” or contributing to conservation efforts through recycling.
 - ◆ Several visitors spoke about a personal inclination or aptitude toward general scientific processes like “solv[ing] problems” and “approach[ing] things rationally.”
- ◆ **Traditional view of “science person”** – Slightly more than one-third of responses stemmed from a view of science rooted in natural, medical, or mathematical disciplines. These interviewees tended to identify or not identify as science people based on their work. For example, several who identified as “science people” described themselves as a “biology major,” “experimentalist,” or “pharmacist [who helps] explain to other people... how drugs affect the body.” Similarly, a few said they were not “science people” because their work in accounting, systems analysis, or “writing” was “not really about science.”

RELATIONSHIP TO DEMOGRAPHICS

Self-assessment as a “science person” varied by level of education. Interviewees with a college degree tended to have a traditional view of science, and thus, discussed whether they were a “science person” in the context of their professional work.

REFLECTION ON “SCIENCE IDENTITY” AS A RESULT OF THE EXHIBITION

At the end of the interview, RK&A asked interviewees if there were any ways they see themselves doing science in their everyday life or work or might perceive themselves as scientists, having had more to think about the exhibition and citizen scientists. In response:

- ◆ **Experienced a new dimension of their science identity** – More than one-half experienced a new dimension of their own science identities or a new way they were thinking about science identities more broadly. Among them:
 - Several emphasized the role of scientific processes or thinking in their everyday lives, including through conservation activities, collecting seashells, making art or performing music, and maintaining a “chemical balance” in their “reef aquarium.” Among them, several visitors who had previously identified themselves as “doing science” only professionally volunteered new ways they saw potential scientific engagement in their “general observations” and explorations of nature, photography, and collecting.
 - Some referenced the exhibition’s main idea of citizen science, though they did so in different ways. For instance, while a few spoke more generally about the idea that “we can all help in that [scientific] discovery process,” another few referenced the concept of “citizen science” as specifically highlighting the “important work in science done by amateurs.” In addition, a few said they were newly inspired to promote a more inclusive view of science, suggesting they would encourage their children to develop a “field journal” or bring “people who aren’t professional scientists” to the museum to show them that “this is how you can do science.”
- ◆ **Did not experience a new dimension** – About one-third did not experience new dimensions of their science identities.

RELATIONSHIP TO DEMOGRAPHICS

Overall, the interviewees who were able to identify a new dimension of their science identity started with a more traditional view of science when assessing whether they “did science” or describing how they saw themselves as a “science person.” However, compared to the relative sample, people of color who previously had a traditional view of science were most inclined to identify a new way they participate in science.

APPENDIX

APPENDIX A: TIMING AND TRACKING FORM

SDNHM EXTRAORDINARY IDEAS T&T OBSERVATION FORM

ID# _____

OUTSIDE EXHIBITION

	Component	Start Time	Stop Time	Total	General Behaviors	Social Behaviors
1	Left side of entrance				<input type="checkbox"/> Look at gift shop display <input type="checkbox"/> Look at graphic	<input type="checkbox"/> Point <input type="checkbox"/> Read aloud <input type="checkbox"/> Beckon <input type="checkbox"/> Converse
2	Book entrance <input type="checkbox"/> Door open				<input type="checkbox"/> Look at books <input type="checkbox"/> Touch books	<input type="checkbox"/> Point <input type="checkbox"/> Read aloud <input type="checkbox"/> Beckon <input type="checkbox"/> Converse
3	Right side of entrance				<input type="checkbox"/> Look at graphics	<input type="checkbox"/> Point <input type="checkbox"/> Read aloud <input type="checkbox"/> Beckon <input type="checkbox"/> Converse

ENTRANCE/TREASURES FROM THE RARE BOOK ROOM

	Component	Start Time	Stop Time	Total	General Behaviors	Social Behaviors
4	Historia Naturae (right side)				<input type="checkbox"/> Look at book <input type="checkbox"/> Read label	<input type="checkbox"/> Point <input type="checkbox"/> Read aloud <input type="checkbox"/> Beckon <input type="checkbox"/> Converse
5	Donor panels				<input type="checkbox"/> Look at right panel <input type="checkbox"/> Look at left panel	<input type="checkbox"/> Point <input type="checkbox"/> Read aloud <input type="checkbox"/> Beckon <input type="checkbox"/> Converse
6	Intro label				<input type="checkbox"/> Look at front <input type="checkbox"/> Look at back	<input type="checkbox"/> Point <input type="checkbox"/> Read aloud <input type="checkbox"/> Beckon <input type="checkbox"/> Converse
7	Icones Planatarum Rariorum (left side)				<input type="checkbox"/> Look at book <input type="checkbox"/> Read label	<input type="checkbox"/> Point <input type="checkbox"/> Read aloud <input type="checkbox"/> Beckon <input type="checkbox"/> Converse

PENDULUM

	Component	Start Time	Stop Time	Total	General Behaviors	Social Behaviors
8	Pendulum				<input type="checkbox"/> Look at pendulum <input type="checkbox"/> Read label <input type="checkbox"/> Point/comment on mouse	<input type="checkbox"/> Point <input type="checkbox"/> Read aloud <input type="checkbox"/> Beckon <input type="checkbox"/> Converse

MAIN GALLERY (STARTS ON RIGHT)

	Component	Start Time	Stop Time	Total	General Behaviors	Social Behaviors
9	Lionel Walter Rothschild (birds)				<input type="checkbox"/> Read person panel <input type="checkbox"/> Look at case (book & label) <input type="checkbox"/> Read labels on table <input type="checkbox"/> Touch nest <input type="checkbox"/> Look at SD Bird Atlas <input type="checkbox"/> Flip through SD Bird Atlas <input type="checkbox"/> Read citizen science panel <input type="checkbox"/> Take brochure	<input type="checkbox"/> Point <input type="checkbox"/> Read aloud <input type="checkbox"/> Beckon <input type="checkbox"/> Converse
10	Microscopes in Victorian England				<input type="checkbox"/> Read person panel <input type="checkbox"/> Look at case (object & label)	<input type="checkbox"/> Point <input type="checkbox"/> Read aloud <input type="checkbox"/> Beckon <input type="checkbox"/> Converse
11	INTERACTIVE: Microscopes				<input type="checkbox"/> Watch someone use <input type="checkbox"/> Use	<input type="checkbox"/> Point <input type="checkbox"/> Read aloud <input type="checkbox"/> Beckon <input type="checkbox"/> Converse
12	Edward Lear (lithography)				<input type="checkbox"/> Read person panel <input type="checkbox"/> Look at case (book & label) <input type="checkbox"/> Read labels on table/flipbook <input type="checkbox"/> Flip flipbook <input type="checkbox"/> Touch lithography stone <input type="checkbox"/> Read citizen science panel <input type="checkbox"/> Take brochure <input type="checkbox"/> Look at tortoise shell <input type="checkbox"/> Touch tortoise shell	<input type="checkbox"/> Point <input type="checkbox"/> Read aloud <input type="checkbox"/> Beckon <input type="checkbox"/> Converse
13	VIDEO: Lithography				<input type="checkbox"/> Watch	<input type="checkbox"/> Point <input type="checkbox"/> Read aloud <input type="checkbox"/> Beckon <input type="checkbox"/> Converse

Volunteer/Staff Convo (stop #):	Use Stools (stop #):	Photo with people/selfie (stop #):	Photo of object/exhibit (stop #):

	Component	Start Time	Stop Time	Total	General Behaviors	Social Behaviors
14	Romeyn Beck Hough (wood)				<input type="checkbox"/> Read person panel <input type="checkbox"/> Look at case (book & label) <input type="checkbox"/> Push button/light <input type="checkbox"/> Look at tactile wood samples <input type="checkbox"/> Touch tactile wood samples	<input type="checkbox"/> Point <input type="checkbox"/> Read aloud <input type="checkbox"/> Beckon <input type="checkbox"/> Converse
15	The Botanical Illustrators of the Flora Londinensis				<input type="checkbox"/> Read (person) panel <input type="checkbox"/> Look at case (book & label) <input type="checkbox"/> Read citizen science panel <input type="checkbox"/> Take brochure	<input type="checkbox"/> Point <input type="checkbox"/> Read aloud <input type="checkbox"/> Beckon <input type="checkbox"/> Converse
16	INTERACTIVE: Flora Londinensis				<input type="checkbox"/> Watch someone use <input type="checkbox"/> Use	<input type="checkbox"/> Point <input type="checkbox"/> Read aloud <input type="checkbox"/> Beckon <input type="checkbox"/> Converse
17	Pierre-Joseph Redoute (cactus)				<input type="checkbox"/> Read person panel <input type="checkbox"/> Look at specimen & label <input type="checkbox"/> Look at book & label <input type="checkbox"/> Touch cactus	<input type="checkbox"/> Point <input type="checkbox"/> Read aloud <input type="checkbox"/> Beckon <input type="checkbox"/> Converse
18	Napoleon's Commission of Science and Arts				<input type="checkbox"/> Read person panel <input type="checkbox"/> Look at case (book & label) <input type="checkbox"/> Read citizen science panel <input type="checkbox"/> Take brochure	<input type="checkbox"/> Point <input type="checkbox"/> Read aloud <input type="checkbox"/> Beckon <input type="checkbox"/> Converse
19	Chairs & Frog				<input type="checkbox"/> Sit in chair <input type="checkbox"/> Touch frog <input type="checkbox"/> Climb/sit on frog	<input type="checkbox"/> Point <input type="checkbox"/> Read aloud <input type="checkbox"/> Beckon <input type="checkbox"/> Converse
20	Amy H. Gross				<input type="checkbox"/> Read person panel <input type="checkbox"/> Touch (3 tactiles) <input type="checkbox"/> Look at flipbook <input type="checkbox"/> Flip flipbook <input type="checkbox"/> Read label (2 labels) <input type="checkbox"/> Take HerpAtlas brochure	<input type="checkbox"/> Point <input type="checkbox"/> Read aloud <input type="checkbox"/> Beckon <input type="checkbox"/> Converse
21	INTERACTIVE: HerpAtlas				<input type="checkbox"/> Watch someone use <input type="checkbox"/> Use	<input type="checkbox"/> Point <input type="checkbox"/> Read aloud <input type="checkbox"/> Beckon <input type="checkbox"/> Converse
22	Auguste Johann Rosel von Rosenhof				<input type="checkbox"/> Read person panel <input type="checkbox"/> Look at case (book & label) <input type="checkbox"/> Touch (3 frogs) <input type="checkbox"/> Look at mural <input type="checkbox"/> Point between book & mural	<input type="checkbox"/> Point <input type="checkbox"/> Read aloud <input type="checkbox"/> Beckon <input type="checkbox"/> Converse
23	Lee Passmore (camera)				<input type="checkbox"/> Read person panel <input type="checkbox"/> Look at case (book & label) <input type="checkbox"/> Touch spider	<input type="checkbox"/> Point <input type="checkbox"/> Read aloud <input type="checkbox"/> Beckon <input type="checkbox"/> Converse
24	VIEWFINDER				<input type="checkbox"/> Watch	<input type="checkbox"/> Point <input type="checkbox"/> Read aloud <input type="checkbox"/> Beckon <input type="checkbox"/> Converse
25	Laurence Klauber (snakes)				<input type="checkbox"/> Read person panel (in case) <input type="checkbox"/> Look at books, specimens & labels (in case)	<input type="checkbox"/> Point <input type="checkbox"/> Read aloud <input type="checkbox"/> Beckon <input type="checkbox"/> Converse
26	Maria Theresa (shells)				<input type="checkbox"/> Read person panel <input type="checkbox"/> Look at book & label (in case) <input type="checkbox"/> Look at shells & label (in case) <input type="checkbox"/> Look at tactile shell & label <input type="checkbox"/> Touch tactile shell	<input type="checkbox"/> Point <input type="checkbox"/> Read aloud <input type="checkbox"/> Beckon <input type="checkbox"/> Converse
27	VIDEO: Carole				<input type="checkbox"/> Watch	<input type="checkbox"/> Point <input type="checkbox"/> Read aloud <input type="checkbox"/> Beckon <input type="checkbox"/> Converse

Volunteer/Staff Convo (stop #):	Use Stools (stop #):	Photo with people/selfie (stop #):	Photo of object/exhibit (stop #):

	Component	Start Time	Stop Time	Total	General Behaviors	Social Behaviors
28	Audubon book				<input type="checkbox"/> Look at book <input type="checkbox"/> Read book label	<input type="checkbox"/> Point <input type="checkbox"/> Read aloud <input type="checkbox"/> Beckon <input type="checkbox"/> Converse
29	John James Audubon				<input type="checkbox"/> Read person panel <input type="checkbox"/> Look at case (parakeet & label) <input type="checkbox"/> Read citizen science panel <input type="checkbox"/> Take brochure <input type="checkbox"/> Look at wall mural <input type="checkbox"/> Look at framed prints	<input type="checkbox"/> Point <input type="checkbox"/> Read aloud <input type="checkbox"/> Beckon <input type="checkbox"/> Converse
30	INTERACTIVE: Audobon				<input type="checkbox"/> Watch someone use <input type="checkbox"/> Use <input type="checkbox"/> Play bird sounds	<input type="checkbox"/> Point <input type="checkbox"/> Read aloud <input type="checkbox"/> Beckon <input type="checkbox"/> Converse
31	Chairs by Audubon				<input type="checkbox"/> Sit <input type="checkbox"/> Flip through Audubon book	<input type="checkbox"/> Point <input type="checkbox"/> Read aloud <input type="checkbox"/> Beckon <input type="checkbox"/> Converse
32	Blue Case Left				<input type="checkbox"/> Look Laurence Huey <input type="checkbox"/> Look Charles Orcutt	<input type="checkbox"/> Point <input type="checkbox"/> Read aloud <input type="checkbox"/> Beckon <input type="checkbox"/> Converse
33	Blue Case Middle				<input type="checkbox"/> Look Margaret Wood Bancroft <input type="checkbox"/> Look Joseph W. Sefton Jr.	<input type="checkbox"/> Point <input type="checkbox"/> Read aloud <input type="checkbox"/> Beckon <input type="checkbox"/> Converse
34	Blue Case Right				<input type="checkbox"/> Look Ethel Bailey Higgins <input type="checkbox"/> Look Anthony Wayne Vogdes	<input type="checkbox"/> Point <input type="checkbox"/> Read aloud <input type="checkbox"/> Beckon <input type="checkbox"/> Converse

STAIR AREA

	Component	Start Time	Stop Time	Total	General Behaviors	Social Behaviors
35	Stairs & Elevator				<input type="checkbox"/> Try elevator <input type="checkbox"/> Use elevator <input type="checkbox"/> Notice stairs <input type="checkbox"/> Walk up stairs	<input type="checkbox"/> Point <input type="checkbox"/> Read aloud <input type="checkbox"/> Beckon <input type="checkbox"/> Converse
36	Restroom				<input type="checkbox"/> Wait for restroom <input type="checkbox"/> Use restroom	<input type="checkbox"/> Point <input type="checkbox"/> Read aloud <input type="checkbox"/> Beckon <input type="checkbox"/> Converse

FINE ART GALLERY

	Component	Start Time	Stop Time	Total	General Behaviors	Social Behaviors
37	Landing				<input type="checkbox"/> Look into map room	<input type="checkbox"/> Point <input type="checkbox"/> Read aloud <input type="checkbox"/> Beckon <input type="checkbox"/> Converse
38	Valentien				<input type="checkbox"/> Read label <input type="checkbox"/> Look at art	<input type="checkbox"/> Point <input type="checkbox"/> Read aloud <input type="checkbox"/> Beckon <input type="checkbox"/> Converse
39	Elevator				<input type="checkbox"/> Try elevator <input type="checkbox"/> Use elevator	<input type="checkbox"/> Point <input type="checkbox"/> Read aloud <input type="checkbox"/> Beckon <input type="checkbox"/> Converse
40	Dragon label & cases				<input type="checkbox"/> Look at left case (rail side) <input type="checkbox"/> Look at right cases	<input type="checkbox"/> Point <input type="checkbox"/> Read aloud <input type="checkbox"/> Beckon <input type="checkbox"/> Converse
41	Table & book shelf				<input type="checkbox"/> Sit at table <input type="checkbox"/> Look at bookshelf <input type="checkbox"/> Read book	<input type="checkbox"/> Point <input type="checkbox"/> Read aloud <input type="checkbox"/> Beckon <input type="checkbox"/> Converse
42	Sofa				<input type="checkbox"/> Sit on sofa <input type="checkbox"/> Look at bookshelf <input type="checkbox"/> Read book	<input type="checkbox"/> Point <input type="checkbox"/> Read aloud <input type="checkbox"/> Beckon <input type="checkbox"/> Converse
43	Book nook				<input type="checkbox"/> Sit in nook <input type="checkbox"/> Touch book nook <input type="checkbox"/> Read book	<input type="checkbox"/> Point <input type="checkbox"/> Read aloud <input type="checkbox"/> Beckon <input type="checkbox"/> Converse
44	Rail overlooking downstairs				<input type="checkbox"/> Look across to map room <input type="checkbox"/> Look down to exhibition	<input type="checkbox"/> Point <input type="checkbox"/> Read aloud <input type="checkbox"/> Beckon <input type="checkbox"/> Converse
45	Stairs				<input type="checkbox"/> Walk down stairs	<input type="checkbox"/> Point <input type="checkbox"/> Read aloud <input type="checkbox"/> Beckon <input type="checkbox"/> Converse

Volunteer/Staff Convo (stop #):	Use Stools (stop #):	Photo with people/selfie (stop #):	Photo of object/exhibit (stop #):

END TIME – VISITOR EXITS THROUGH BOOK ENTRANCE DOORWAY

STOPWATCH END TIME: _____

VISITOR BACKGROUND

Gender: Male / Female Age: 10-13 / 14-17 / 18-24 / 25-34 / 35-44 / 45-54 / 55-64 / 65-74 / 75+

Group composition: Alone / Adults only / Adults and Children / Children only

If there are children in group, ages: < 5 / 6-9 / 10-13 / 14-17

Crowding: Few / Moderate / Crowded

Language: Spanish / English / Other: _____

Any broken/unavailable components?: Yes / No

Notes: _____

Day: Weekend / Weekday Date: _____

Data Collector Initials: _____

OTHER NOTES

QUESTION FOR THOSE WHO DON'T STOP

1. We are conducting an evaluation of this exhibition—*Extraordinary Ideas from Ordinary People* [gesture to the exhibit]. Can you tell me why you choose not to visit the exhibition today?
 - Visited the exhibition earlier today
 - Visited the exhibition last time I was here
 - It did not look interesting to me
 - It does not look like something interesting for my family
 - I did not know I could go into the exhibition
 - I am short on time and need to leave the museum soon
 - I have tickets for a show in theater
 - Other: _____

APPENDIX B: INTERVIEW GUIDE - ENGLISH

Hello, I am talking to visitors today about their visit to the *Extraordinary Ideas* exhibition. The feedback will be used to help the museum create better exhibitions for visitors like you. If you have a few minutes, I'd like to ask you some questions about your experiences today. (It will take about 15 minutes).

[If agreement is reached, state]: Thank you. I plan to audio-record our conversation so we have an accurate record of it. However, your responses will be anonymous; we won't be collecting or using your name in our report. Is that okay with you?

[If yes, start audio recorder and announce ID #]

[If visitor declines]: Record information on refusal log.

INTERVIEW QUESTIONS

1. First, what made you decide to come to the museum today?
 - a. Was there a particular reason you chose to visit this exhibition today?
 - b. Probe: Before having visited it, what did you think the exhibition might be about?
2. What do you like most about this exhibition?
 - a. What about that was enjoyable for you?
3. What about this exhibition does not work so well for you?
 - a. What about that didn't you like?
4. In thinking about all your experiences in the exhibition, what do you think the museum wants the exhibition to communicate to visitors?
 - a. What in the exhibition makes you think about that?
5. What, if anything, new did you find out or think about as a result of the exhibition?
 - a. What in the exhibition showed you that?
6. I'd like to switch gears for a moment and ask you a few questions about yourself.
 - a. First, can you tell me what comes to your mind when you hear the word "science"?
 - b. In what ways, if any, do you do science in your everyday life or work?
 - i. If none: Can you tell me why?
 - c. What comes to mind when you hear someone described as a "science person"?
 - d. In what ways, if any, do you see yourself as a "science person"?
 - i. If none: Can you tell me why?

7. Now thinking back to the exhibition, what do you think the museum is trying to show or tell visitors about “science” [doing science] specifically?
 - a. What in the exhibition showed you that?
8. How if at all is the way the museum represents “science” or “doing science” in the exhibition the same or different from how you normally think about science?
 - a. Can you tell me more about that?
 - b. How, if at all, did the way science was represented in this exhibition relate to your own life?
9. What, if any, understandings or meanings of “science” [doing science] do you think the exhibition leaves out?
 - a. Can you give me an example?
10. The exhibition provides several examples of what the museum calls “citizen scientists.” Are you familiar with that term?
 - a. What do you think it means?

[Before Q11, provide definition and customize preface to whether they are on or off-track. The definition should always be stated: “A citizen scientist is an amateur or non-professional scientist who contributes to scientific research”]

11. What, if any, of the individual stories about citizen scientists did you identify with?
 - a. Can you tell me why?
 - b. Are there any citizen scientists that you had a hard time relating to?
 - c. Can you tell me why?
12. Earlier, I asked you in what ways, if any, you do science in your everyday life or work. Now that we have talked more about the exhibition and citizen scientists, are there ways you now might perceive yourself as a scientist, or see yourself as doing science in your everyday life or work?
13. Is there any other feedback you want to give the Museum about the exhibition?
14. Great. Before we conclude today, may I ask who you are visiting the museum with? [clarify for whether they are alone, an adult-only group, group of adults and children]

Thank you. I also have a brief form we use to learn a bit more about our interviewees.

[Hand interviewee demographic page, next page]

Extraordinary Ideas Interviewee Background

ID: _____

1. Is this your first visit to the San Diego Natural History Museum?
 Yes
 No

2. Gender: _____

3. Age: _____

4. What is the highest level of education you have completed?
 Some high school
 High school graduate
 Technical school
 Some college
 College graduate/Bachelor's degree
 Graduate/professional degree

5. With which group(s) do you most identify?
 African American / Black
 American Indian
 Asian / Pacific Islander
 Caucasian / White
 Hispanic / Latino
 Other, please specify: _____

6. Do you reside in United States?
 Yes → Zipcode of residence: _____
 No → Country of residence: _____

Thank you for your time!

APPENDIX C: INTERVIEW GUIDE - SPANISH

Hola, hoy estoy hablando con los visitantes sobre su visita a la exhibición de *Ideas extraordinarias*. Se utilizarán los comentarios para ayudar al museo a crear mejores exhibiciones para visitantes como usted. Si tiene unos minutos, me gustaría hacerle algunas preguntas sobre su experiencia de hoy (tomará alrededor de 15 minutos).

[Si se llega al acuerdo, diga]: Gracias. Planeo grabar el audio de nuestra conversación para que podamos tener un registro preciso de ella. Sin embargo, sus respuestas serán anónimas; no recopilaremos ni usaremos su nombre en nuestro reporte. ¿Le parece bien?

[Si afirma, encienda la grabadora de audio y anuncie el nro. de identificación (ID #)]

[Si el visitante declina]: registre la información en el registro de rechazos.

PREGUNTAS DE LA ENTREVISTA

1. Primero, ¿Qué le hizo decidir venir al museo hoy?
 - a. ¿Hubo alguna razón en particular para que escogiese visitar esta exhibición hoy?
 - b. Sondee: Antes de haberla visitado ¿sobre qué pensó que podría tratarse la exhibición?
2. ¿Qué le gusta más de esta exhibición?
 - a. ¿Qué parte de eso le fue agradable?
3. ¿Qué parte de esta exhibición no le pareció bien?
 - a. ¿Qué no le gustó de eso?
4. Al pensar en todas sus experiencias en la exhibición, ¿qué piensa que el museo quiere que la exhibición comunique a los visitantes?
 - a. ¿Qué parte de la exhibición le hace pensar en eso?
5. ¿En qué novedad, si hubo alguna, pensó o descubrió como resultado con la revisión?
 - a. ¿Qué parte de la exhibición le hizo ver eso?
6. Me gustaría cambiar de tema por un momento y hacerle unas pocas preguntas sobre usted.
 - a. Primero ¿puede decirme qué viene a su mente cuando escucha la palabra “ciencia”?

- b. ¿De qué forma, si hay alguna, hace ciencia en su vida o trabajo diario?
 - i. Si de ninguna: ¿puede decirme por qué?
 - c. ¿Qué viene a su mente cuando escucha que se describe a alguien como una “persona de ciencia”?
 - d. ¿De qué formas, si hay alguna, se ve a sí mismo como una “persona de ciencia”?
 - i. Si de ninguna: ¿puede decirme por qué?
- 7. Ahora, pensando de nuevo en la exhibición ¿qué piensa que el museo está tratando de mostrar o decir a los visitantes específicamente sobre “ciencia” [hacer ciencia]?
 - a. ¿Qué parte de la exhibición le hizo ver eso?
- 8. ¿En qué se parece o se diferencia, si lo hace, la forma en que el museo representa la “ciencia” o “hacer ciencia” en la exhibición a cómo usted piensa normalmente sobre ciencia?
 - a. ¿Puede hablarme más sobre eso?
 - b. ¿Cómo se relacionó, si lo hizo, la forma en que la ciencia se representó en esta exhibición a su propia vida?
- 9. ¿Qué interpretaciones o significados de “ciencia” [hacer ciencia], si hay alguno, piensa que la exhibición omite?
 - a. ¿Puede darme un ejemplo?
- 10. La exhibición provee varios ejemplos de lo que el museo llama “científicos ciudadanos.” ¿Está familiarizado/a con ese término?
 - a. ¿Qué piensa que significa?

[Antes de la pregunta nº 11, proporcione la definición y personalice la introducción según si van o no de acuerdo a lo planeado. La definición siempre debería especificarse: “un científico ciudadano es un científico aficionado o no profesional que contribuye a investigaciones científicas”]
- 11. ¿Con qué historias individuales sobre científicos ciudadanos, si con alguna, se identificó?
 - a. ¿Puede decirme por qué?
 - b. ¿Hay algún científico ciudadano con el cuál le costase trabajo relacionarse?
 - c. ¿Puede decirme por qué?
- 12. Antes, le pregunté de qué forma, si de alguna, hace ciencia en su vida o trabajo diario. Ahora que hemos hablado más sobre la exhibición y los científicos ciudadanos, ¿hay alguna forma en la que podría percibirse como un científico, o verse a sí mismo haciendo ciencia en su vida o trabajo diario?

13. ¿Hay algún otro comentario que quiera dar al museo sobre esta exhibición?

14. Genial. Antes de concluir hoy, ¿puedo preguntarle con quién está visitando el museo? [aclare si están solos, con un grupo de solo adultos, con un grupo de adultos y niños]

Gracias. También tengo un formulario breve que usamos para aprender un poco más sobre nuestros entrevistados.

[Entregue la página demográfica del entrevistado, siguiente página]

Entrevista de Ideas Extraordinarias

ID: _____

1. ¿Es su primera vez visitando el Museo de Historia Natural de San Diego?
 Sí
 No

2. ¿Sexo?: _____

3. ¿Edad?: _____

4. Por favor indique el nivel más alto de educación que ha completado. (Marque UNA respuesta)
 Algo de bachillerato
 Graduado del bachillerato
 Escuela técnica
 Graduado de universidad/ Licenciatura
 Posgrado

5. ¿Con qué grupo(s) se identifique más?
 Afroamericano/ Negro
 Indo americano/ Nativo de Alaska
 Asiático (Chino, Indio, Japonés, etc.)/ De las Islas del Pacífico
 Caucásico/ Blanco
 Hispano/ Latino
 Otro, especifique: _____

6. ¿Vive en Estados Unidos u otro país?
 Estados Unidos, especifique su código postal: _____
 Otro país, especifique: _____

Gracias!

APPENDIX D: TIMING AND TRACKING DATA

RK&A data collectors conducted a total of 105 observations. The table below reports the number of visitors who stopped at exhibit components, and number and type of behavior observed at that component.

OUTSIDE EXHIBITION

	Component	Number of visitors who stopped	Median time (mins : secs)	Number of visitors who exhibited General Behaviors	Number of visitors who exhibited Social Behaviors
1	Left side of entrance	50	0:05	Look at gift shop display = 20 Look at graphic = 11	Point = 1 Beckon = 0 Volunteer = 0 Read aloud = 1 Converse = 3 Photo person = 0 Photo object = 0
2	Book entrance (door always open)	105 (all visitors)	0:10	Look at books = 31 Touch books = 3	Point = 3 Beckon = 0 Volunteer = 0 Read aloud = 3 Converse = 17 Photo person = 1 Photo object = 0
3	Right side of entrance	55	0:05	Look at graphics = 29	Point = 3 Beckon = 1 Volunteer = 0 Read aloud = 1 Converse = 3 Photo person = 0 Photo object = 0

ENTRANCE/TREASURES FROM THE RARE BOOK ROOM

	Component	# of visitors who stopped	Median time (mins : secs)	Number of visitors who exhibited General Behaviors	Number of visitors who exhibited Social Behaviors
4	Historia Naturae (right side)	31	0:21	Look at book = 30 Read label = 23	Point = 1 Beckon = 1 Volunteer = 0 Stool = 0 Read aloud = 5 Converse = 8 Photo person = 0 Photo object = 1
5	Donor panels	14	0:14	Look at right panel = 11 Look at left panel = 9	Point = 0 Beckon = 0 Volunteer = 0 Stool = 0 Read aloud = 0 Converse = 4 Photo person = 0 Photo object = 0
6	Intro label	7	0:10	Look at front = 5 Look at back = 2	Point = 0 Beckon = 0 Volunteer = 0 Stool = 0 Read aloud = 0 Converse = 0 Photo person = 0 Photo object = 0
7	Icones Planatarum Rariorum (left side)	24	0:12	Look at book = 21 Read label = 16	Point = 0 Beckon = 0 Volunteer = 0 Stool = 0 Read aloud = 1 Converse = 9 Photo person = 0 Photo object = 0
8	Pendulum	53	0:18	Look at pendulum = 50 Read label = 5 Point/comment on mouse = 4	Point = 4 Beckon = 5 Volunteer = 0 Stool = 0 Read aloud = 1 Converse = 24 Photo person = 0 Photo object = 0

MAIN GALLERY

	Component	# of visitors who stopped	Median time (mins : secs)	Number of visitors who exhibited General Behaviors	Number of visitors who exhibited Social Behaviors
9	Lionel Walter Rothschild (birds)	25	0:12	Read person panel = 13 Look at case = 19 Read labels on table = 3 Touch nest = 3 Look at SD Bird Atlas = 4 Flip through SD Bird Atlas = 2 Read citizen science panel = 2 Take brochure = 0	Point = 1 Read aloud = 0 Beckon = 1 Converse = 6 Volunteer = 0 Photo person = 0 Stool = 0 Photo object = 0
10	Microscopes in Victorian England	36	0:32	Read person panel = 9 Look at case = 27	Point = 2 Read aloud = 6 Beckon = 1 Converse = 10 Volunteer = 0 Photo person = 1 Stool = 5 Photo object = 0
11	INTERACTIVE: Digital Microscopes	17	0:36	Watch someone use = 9 Use = 16	Point = 1 Read aloud = 4 Beckon = 0 Converse = 7 Volunteer = 0 Photo person = 1 Stool = 6 Photo object = 0
12	Edward Lear (lithography)	53	0:28	Read person panel = 15 Look at case = 23 Read labels on table/flipbook = 15 Flip flipbook = 10 Touch lithography stone = 20 Read citizen science panel = 4 Take brochure = 0 Look at tortoise shell = 33 Touch tortoise shell = 22	Point = 4 Read aloud = 7 Beckon = 2 Converse = 23 Volunteer = 0 Photo person = 0 Stool = 2 Photo object = 3
13	VIDEO: Lithography	18	1:20	Watch = 16	Point = 2 Read aloud = 3 Beckon = 0 Converse = 9 Volunteer = 0 Photo person = 0 Stool = 2 Photo object = 0
14	Romeyn Beck Hough (wood)	44	0:24	Read person panel = 17 Look at case = 34 Push button/light = 15 Look at tactile wood samples = 28 Touch tactile wood samples = 17	Point = 3 Read aloud = 3 Beckon = 0 Converse = 14 Volunteer = 0 Photo person = 0 Stool = 2 Photo object = 0
15	The Botanical Illustrators of the Flora Londinensis	32	0:30	Read person panel = 16 Look at case = 22 Read citizen science panel = 3 Take brochure = 0	Point = 2 Read aloud = 3 Beckon = 0 Converse = 13 Volunteer = 0 Photo person = 0 Stool = 5 Photo object = 2

	Component	#r of visitors who stopped	Median time (mins : secs)	Number of visitors who exhibited General Behaviors	Number of visitors who exhibited Social Behaviors
16	INTERACTIVE: Flora Londinesis	15	0:44	Watch someone use = 10 Use = 12	Point = 2 Read aloud = 2 Beckon = 2 Converse = 10 Volunteer = 0 Photo person = 0 Stool = 4 Photo object = 0
17	Pierre-Joseph Redoute (cactus)	21	0:12	Read person panel = 7 Look at specimen & label = 13 Look at book & label = 12 Touch cactus = 9	Point = 0 Read aloud = 0 Beckon = 0 Converse = 5 Volunteer = 0 Photo person = 0 Stool = 0 Photo object = 0
18	Napoleon's Commission of Science and Arts	20	0:19	Read person panel = 13 Look at case = 15 Read citizen science panel = 1 Take brochure = 0	Point = 1 Read aloud = 0 Beckon = 0 Converse = 4 Volunteer = 0 Photo person = 0 Stool = 0 Photo object = 0
19	Chairs & Frog	16	0:31	Sit in chair = 2 Touch frog = 6 Climb/sit on frog = 6	Point = 2 Read aloud = 0 Beckon = 3 Converse = 11 Volunteer = 0 Photo person = 6 Stool = 0 Photo object = 1
20	Amy H. Gross	32	0:23	Read person panel = 9 Touch (3 tactiles) = 13 Look at flipbook = 8 Flip flipbook = 5 Read label = 2 Take HerpAtlas brochure = 0	Point = 8 Read aloud = 2 Beckon = 3 Converse = 13 Volunteer = 0 Photo person = 0 Stool = 4 Photo object = 0
21	INTERACTIVE: HerpAtlas	11	0:55	Watch someone use = 11 Use = 5	Point = 2 Read aloud = 3 Beckon = 0 Converse = 7 Volunteer = 0 Photo person = 0 Stool = 1 Photo object = 0
22	Auguste Johann Rosel von Rosenhof	27	0:13	Read person panel = 8 Look at case = 13 Touch (3 frogs) = 12 Look at mural = 8 Point betw. book & mural = 0	Point = 1 Read aloud = 0 Beckon = 2 Converse = 7 Volunteer = 0 Photo person = 0 Stool = 0 Photo object = 1
23	Lee Passmore (camera)	46	0:22	Read person panel = 20 Look at case = 27 Touch spider = 5	Point = 6 Read aloud = 5 Beckon = 1 Converse = 13 Volunteer = 0 Photo person = 0 Stool = 3 Photo object = 0
24	Vintage Camera Slideshow	22	0:20	Watch = 21	Point = 2 Read aloud = 1 Beckon = 2 Converse = 10 Volunteer = 0 Photo person = 0 Stool = 2 Photo object = 0
25	Laurence Klauber (snakes)	43	0:22	Read person panel = 14 Look at books, specimens & labels = 41	Point = 4 Read aloud = 2 Beckon = 3 Converse = 17 Volunteer = 0 Photo person = 1 Stool = 0 Photo object = 2

	Component	# of visitors who stopped	Median time (mins : secs)	Number of visitors who exhibited General Behaviors	Number of visitors who exhibited Social Behaviors
26	Maria Theresa (shells)	34	0:17	Read person panel = 9 Look at book & label = 16 Look at shells & label = 19 Look at tactile shell & label = 11 Touch tactile shell = 4	Point = 3 Read aloud = 0 Beckon = 2 Converse = 7 Volunteer = 0 Photo person = 0 Stool = 0 Photo object = 1
27	VIDEO: Carole Hertz	6	0:17	Watch = 6	Point = 0 Read aloud = 0 Beckon = 0 Converse = 0 Volunteer = 0 Photo person = 0 Stool = 0 Photo object = 0
28	Audubon book	36	0:17	Look at book = 34 Read book label = 22	Point = 2 Read aloud = 2 Beckon = 3 Converse = 13 Volunteer = 0 Photo person = 0 Stool = 0 Photo object = 1
29	John James Audubon	36	0:45	Read person panel = 14 Look at case = 25 Read citizen science panel = 3 Take brochure = 0 Look at wall mural = 8 Look at framed prints = 6	Point = 4 Read aloud = 4 Beckon = 1 Converse = 15 Volunteer = 0 Photo person = 0 Stool = 7 Photo object = 0
30	INTERACTIVE: Digital Audubon	21	1:00	Watch someone use = 13 Use = 14 Play bird sounds = 5	Point = 2 Read aloud = 4 Beckon = 0 Converse = 13 Volunteer = 0 Photo person = 0 Stool = 7 Photo object = 0
31	Chairs by Audubon	5	0:40	Sit = 2 Flip through Audubon book = 3	Point = 0 Read aloud = 1 Beckon = 0 Converse = 3 Volunteer = 0 Photo person = 1 Stool = 0 Photo object = 0
32	Huey and Orcutt Case	39	0:12	Look Laurence Huey = 32 Look Charles Orcutt = 19	Point = 7 Read aloud = 0 Beckon = 4 Converse = 14 Volunteer = 0 Photo person = 0 Stool = 0 Photo object = 0
33	Blue Case Middle	33	0:12	Look Margaret Wood Bancroft = 19 Look Joseph W. Sefton Jr. = 23	Point = 1 Read aloud = 1 Beckon = 0 Converse = 7 Volunteer = 0 Photo person = 0 Stool = 0 Photo object = 0
34	Blue Case Right	26	0:13	Look Ethel Bailey Higgins = 20 Look Anthony Wayne Vogdes = 23	Point = 1 Read aloud = 0 Beckon = 0 Converse = 3 Volunteer = 0 Photo person = 0 Stool = 0 Photo object = 0

STAIR AREA

	Component	# of visitors who stopped	Median time (mins : secs)	Number of visitors who exhibited General Behaviors	Number of visitors who exhibited General Behaviors
35	Stairs & Elevator	25	0:15	Try elevator = 1 Use elevator = 2 Notice stairs = 23 Walk up stairs = 22	Point = 1 Read aloud = 0 Beckon = 2 Converse = 7 Volunteer = 0 Photo person = 0 Photo object = 0
36	Restroom	3	1:30	Wait for restroom = 0 Use restroom = 3	Point = 0 Read aloud = 0 Beckon = 0 Converse = 0 Volunteer = 0 Photo person = 0 Photo object = 0

FINE ART GALLERY

	Component	# of visitors who stopped	Median time (mins : secs)	Number of visitors who exhibited General Behaviors	Number of visitors who exhibited General Behaviors
37	Landing	4	0:07	Look into map room = 3	Point = 1 Read aloud = 0 Beckon = 0 Converse = 1 Volunteer = 0 Photo person = 1 Stool = 0 Photo object = 0
38	Valentien	9	0:16	Read label = 6 Look at art = 9	Point = 0 Read aloud = 1 Beckon = 1 Converse = 2 Volunteer = 0 Photo person = 0 Photo object = 0
39	Elevator	1	0:45	Try elevator = 1 Use elevator = 1	Point = 0 Read aloud = 0 Beckon = 0 Converse = 0 Volunteer = 0 Photo person = 0 Photo object = 0
40	Dragon label & cases	15	1:21	Look at left case (rail side) = 11 Look at right cases = 11	Point = 0 Read aloud = 4 Beckon = 0 Converse = 7 Volunteer = 0 Photo person = 1 Stool = 1 Photo object = 3
41	Table & book shelf	10	0:43	Sit at table = 2 Look at bookshelf = 6 Read book = 1	Point = 0 Read aloud = 0 Beckon = 0 Converse = 5 Volunteer = 0 Photo person = 0 Stool = 1 Photo object = 0
42	Sofa	4	4:02	Sit on sofa = 3 Look at bookshelf = 1 Read book = 0	Point = 0 Read aloud = 0 Beckon = 0 Converse = 3 Volunteer = 0 Photo person = 0 Stool = 0 Photo object = 1
43	Book nook	15	1:19	Sit in nook = 7 Touch book nook = 8 Read book = 3	Point = 4 Read aloud = 3 Beckon = 2 Converse = 13 Volunteer = 0 Photo person = 6 Stool = 0 Photo object = 0

	Component	# of visitors who stopped	Median time (mins : secs)	Number of visitors who exhibited General Behaviors	Number of visitors who exhibited Social Behaviors
44	Rail overlooking downstairs	6	0:21	Look across to map room = 3 Look down to exhibition = 5	Point = 0 Read aloud = 0 Beckon = 0 Converse = 0 Volunteer = 0 Photo person = 0 Photo object = 1
45	Stairs	23	0:13	Walk down stairs = 22	Point = 0 Read aloud = 0 Beckon = 0 Converse = 7 Volunteer = 0 Photo person = 0 Photo object = 0

APPENDIX E: INTERVIEW DEMOGRAPHIC TRENDS

RK&A examined how broader trends varied across gender, race/ethnicity, and education for those questions directly addressing interviewees' perceptions of science, "science people," and their own science identities (6, 8, 10, and 12).

Trends revealed:

- ◆ Self-Assessment of Doing Science Varied By Level of Education:
 - People with a college degree were more likely than those without to take a narrow view of science, and thus to discuss "doing science" or not "doing science" vis-à-vis their professional work.
 - People without a college degree were more likely to take a broader view of science to identify a way they "did" science in their personal lives.
 - Women, people of color, and people without college degrees were more likely to say they "don't" do science without explaining why.
- ◆ Self-Assessment as a "Science Person" Varied by Level of Education:
 - People with a college degree were more likely than those without to take a narrower view of science, and thus to discuss whether they were a "science person" in the context of their professional work.
- ◆ Final Self-Assessment of "Science Identity" Varied Slightly by Race:
 - Among the visitors who were able to identify a new way they participate in science or saw themselves as "science people," several had taken a more narrow approach to science in assessing whether they "did science" or describing how they saw themselves as a "science person."
 - Relative to the broader sample, people of color who had previously taken a more narrow approach to science when assessing their science identities were slightly more likely to identify a new way they participate in science.