# Creative Brief

Huan Deng, Samantha Eusebio, Elyssa Wallace, Sophie Strachan May 5th 2017, MSEM 619



## Introduction

As an international student, I am interested in how to attract international visitors (especially Chinese visitors) and how to serve international visitors better with the use of digital tools. For those museum visitors who are non-English speakers, something visual, touchable and even olfactory might help them to understand the objects better. That means, it would be nice to design tools that can offer multi-sensory experience. This idea is very close to my teammates' ideas. We all agree with the concept of universal design, which is "the idea that products and experiences should be constructed to be usable by a wide range of people regardless of disability or background.1" - Huan Deng

I am interested in creating a project that will be focused on this idea of using technology to create multi-sensory experiences with objects in art museums and how those experiences can create personal connections with objects. The main questions for this project will be: What type of technology can we use to create multi-sensory learning experiences with objects in art museums? How can we also use this same technology to help visitors make personal connections with objects? The goal would be to see if creating these experiences help visitors learn and connect with the art objects. - Samantha Eusebio

How digital interpretation can facilitate a deeper connection with art work? Are there ways that a digital platform can influence a viewer's perception of art? Can digital interpretation engage visitors in looking closely at the artwork and possibly discover something they might have overlooked before? Is it possible for digital interpretation to offer an alternate experience of art? - Sophie Strachan

We were all interested in creating opportunities for greater access to art in art museums. Whether that access was for international visitors or visitors with visual impairments, we knew that we wanted our digital interpretation to firstly serve that purpose.

<sup>1.</sup> Ezgi Ucar "Multisensory Met: Touch, Smell, and Hear Art", the metropolitan museum of art, September 8, 2015, http://www.metmuseum.org/blogs/digital-underground/2015/multisensorymet.

# Contextual Inquiry

Host Institution: The Pennsylvania Academy of the Fine Arts

Host Institution mission: To promote the transformative power of art and art making.

### Our mission:

To provide a physically and mentally accessible art exhibition that utilizes sensory experience. The experiences within the exhibition will express the transformative power of art, allow for new perceptions of works of art and their meanings/ interpretations, and engage diverse audiences.

### Our goals:

Create an innovative interpretive experience with art. Encourage visitors to utilize senses other than sight in understanding art. Include technology in a way that is not intrusive in the visitor experience.

## Our learning objectives:

Provide additional context for art in the galleries. Create new entry points for visitors to engage with the art. Use visitors' prior knowledge of sensory experiences to interpret art.

# Contextual Inquiry

## Approach:

Within The Richard C. Von Hess Works on Paper Gallery, a small gallery divided into three rooms, we will interpret three works of art from the collection. Each room will feature one object and its sensory interpretation. Through the use of motion detection technology, sounds and scents that correspond to the scenes in the art works will meet visitors as they enter the spaces. This will create an immersive viewing experience.

### Audience:

Primary: Visitors with visual disabilities Secondary: Families with children ages 4-11 Tertiary: Art students or young art professionals

### Similar Projects:

Metropolitan Museum of Art - scratch and sniff painting cards
The Walters Museum of Art - A Feast for the Senses, smell cubes
The Library Company - Common Touch, scent and sound experience
National Constitution Center - Speaking out for Equality, sound bubbles
The Franklin Institute- Your Brain, scent boxes
Museum of Art and Design- The Art of Scent, fragrance releasing dimples
Museum of Feeling- Glade scent diffusers
Museum of the Image- Famous Deaths, pressurized scent release,
coordinating soundtrack

## Persona: Sean Smith

Age: 36

**Profession: Business** 

Family: Married with one kid Location: Conshohocken, PA



## Biography:

Sean Smith is a businessman in his late 30s that usually has a lot on his plate during the work week. On the weekends, he usually likes to relax. However, his wife says otherwise and pushes him to go to the museum with their 5-year-old son. Sean doesn't want to go to a children's museum, but he knows he wants to visit a museum that can provide an educational experience for his son that matches his skill level. Sean also owns a blackberry so he isn't very tech savvy, but he knows that his son loves playing with technology. He chooses to visit an art museum in the hopes that the experience will keep his son engaged enough to possibly give him the relaxation he desires.

### Goals:

Wants to facilitate an experience with his child. Needs to have access to information. Wants to relax.

#### Trustrations:

Forced to go to art museum with son. Would rather go see John Wick 2.

#### Traits:

Likes sports, cars, and dancing. Owns a blackberry. Unfamiliar with art.

## Persona: Sean Smith

Age: 36

**Profession: Business** 

Family: Married with one kid Location: Conshohocken, PA



#### Use Case:

Sean is a business man that works Monday through Friday and usually doesn't have enough time to spend with his family during the week. This really disappoints his wife because Sean is missing out on precious moments of their five-year old son. During dinner on Friday night, she brings it up to Sean and tells him that tomorrow morning he should take their son to PAFA since it's not too far from their house. Spending time at PAFA with their five year old son wasn't Sean's idea of relaxing on a Saturday morning, but he willfully listens to his wife and agrees to take him.

On their way to PAFA, his son has been wiggly and excited because he loves that he is going somewhere new with his daddy. Sean starts to get nervous thinking about his son being energetic in the galleries. Sean quickly thinks that if he holds his son's hand and talks to him about the art it would keep him engaged. Ten minutes later into their visit this idea doesn't seem to be working. Sean receives an important work call on his blackberry and steps out of the gallery to take it. During the phone call, he hears a loud scrubbing sound. Sean is instantly shook with fear when he realizes that the sound could be his son in the other room touching a painting.

When Sean dashes into the room, he sees his son quietly looking at the painting and listening to the sounds of women scrubbing clothes. He giggles when starts to hear the sounds of bubbles popping. Sean is surprised and pleased that his son is thoroughly being engaged with the painting. This experience makes Sean happy because they were both engaged the whole time and he was able to spend a relaxing moment with his son.

## Persona: Dennis Smith

Age: 5

Profession: Child

Family: Two parents, no siblings Location: Conshohocken, PA



## Biography:

Dennis is attending primary school. He loves dinosaurs and bugs. He is an active child who likes exploring the nature and playing with other kids. Dennis plays with his best friend Sammy every day. They enjoy playing video games together by using their parents' cell phones and iPads. That makes him pretty familiar with technology. Dennis' parents hope that he can go outside instead of staying at home playing video games all the time on weekends. They heard that PAFA is a nice museum with beautiful and interesting artwork that children might like, and going to PAFA might be a good chance for their son to know more about art. However, both of Dennis' parents need to work on weekends, so they decided to let Dennis' grandfather take Dennis to the museum, which will make Dennis very happy because he likes being with his Popop.

### Goals:

Wants to play and touch stuff.
Wants to be engaged with something interesting.
Wants to interact with things that are fun

#### **Trustrations:**

Hates when things are boring Would rather be with Popop

#### Traits:

Loves dinosaurs and Minecraft Likes nature, bugs, and rocks Very familiar with technology

## Persona: Dennis Smith

Age: 5

Profession: Child

Family: Two parents, no siblings Location: Conshohocken, PA



#### Use Case:

Dennis visits PAFA with his grandpa on weekend. They go to the museum because Dennis' parents want him to enjoy his leisure time with beautiful art works and hope that he can learn more about art. Dennis is happy to be with his grandpa but he is not so sure about what to do in an art museum. He hopes that there will be something interesting that he can touch and play with, instead of just looking at the art works.

The museum staff from the front desk tells Dennis' grandpa that there is a small gallery that not only display the art pieces, but also let visitors to smell and sound the elements from those arts, which children and adults might both find it very interesting. Dennis grandpa takes the advice and brings Dennis to that gallery. When they enter the gallery, they feel like there is a salty smell, which is like the smell of the ocean. Then, they realize that it is the smell of the ocean! There is a painting of the ocean hang on the wall. When they step closer to the painting, they can hear the sounds of ocean and the songs of seagulls. "Wow, this is like a magic!" Dennis says. "Popop, is there a real ocean inside the painting?" He asks.

They experience other installations in the gallery, and they are both impressed by the combination of the art works, the sounds, and the smells. Dennis has a good day. He realizes that art museums are actually cool places that filled with interesting things, and he definitely wants to visit the museum again!

# Persona: Carla Chavez

Age: 54

Profession: Library Educator Family: Single, has cats Location: Philadelphia, PA



## Biography:

Carla has been a library educator for over 30 years. She was born without sight but has used the power of reading to help her visualize the world around her. Carla loves to visit art museums in her spare time, however, it can become a frustrating experience since she isn't allowed to touch the artwork. She yearns for a museum experience that allows her to visualize the art in ways that are accessible to her needs and allows her to share a similar experience with other people with sight.

### Goals:

Be in an accessible environment. Have an experience with art.

#### Trustrations:

When technology is inaccessible, or uninteresting as an alternative experience.

#### Traits:

Loves books and reading. Has MLS degree Enthusiatic about education.

# Persona: Carla Chavez

Age: 54

Profession: Library Educator Family: Single, has cats Location: Philadelphia, PA



#### Use Case:

Carla has lived without sight all of her life, but through her love of books and reading she is able to visualize the world around her. Reading may come first for Carla, but she also enjoys visiting all of the museums. As a Philadelphia resident, she is well aware of all of the cultural institutions in the city. She has visited most of these museums and loves to revisit them when she can. One day she decides to visit PAFA after reading at the library all morning.

When Carla is walking through the galleries at PAFA, she hear sounds of a train rumbling down tracks coming from the gallery nearby. She walks into the gallery and is completely confused by the sounds. Soon she starts to smell smog and dirt which guides her even closer to the painting. Another visitor in the gallery tells Carla that she has stepped into the immersive installation where you can smell and hear the paintings on the wall. This interaction leads to a delightful conversation between the two of them about the painting. For the first time, she was able to have a regular conversation with another person that isn't just describing the painting to her. She was able understand and interpret that painting on her own terms.

## Persona: Gina Jensen

Age: 22

Profession: Customer Service at Whole Foods Market

Family: Single,

lives separate from parents Location: South Philadelphia, PA



## Biography:

Gina attended University of the Arts, and after graduating she started working at Whole Foods so that she could pay her bills while looking for a job in her field. She has made a ton of new friends at her job, and she wants them to feel just as passionate about art as she does. She has been looking for ways to introduce them to art that aren't intimidating, and are fun. She has heard that the PAFA After Dark event is really interesting, and a great event for people her age.

### Goals:

Wants to share a new and fun experience with friends Wants to have an active experience with art She wants to experience art in a different way

#### **Frustrations:**

Doesn't like too much didactic interpretation Doesn't like poor use of technology Doesn't like to be a passive participant

#### Traits:

Familiar with museums Not really into historical art Comfortable with technology

## Persona: Gina Jensen

Age: 22

Profession: Customer Service at Whole Foods Market

Family: Single,

lives separate from parents Location: South Philadelphia, PA



#### Use Case:

Gina visits PAFA with a group of four friends that she went to college with. They are attending the PAFA after dark event because they heard from a friend that they are fun, and have free drinks. Gina and her friends enter a smaller gallery and smell something not typical of an art gallery, fruit. They view the still life of fruit, smell the subtle scent of fresh fruit, and listen to an audio track of someone slicing and eating fruit. Gina remarks to her friends that this is a really fun way to interact with an otherwise static piece of art.

They experience the other two installations in a similar way, viewing the art, smelling and listening. When they leave the gallery, and walk through the other galleries they talk about what they think different pieces of artwork would smell or sound like.

# Prototype





This prototype was created using the Marvel App website, and formated to fit on a standard sized iPad. To view all of the designed screens, please refer to Appendix B. The painting that would be paired with the interactive station was displayed either on a computer screen or printed. To simulate the scent dispersion device we created several "smell tubes" that were crafted from re-purposed spice shakers, essential oils, and paper towels.



# User Testing



The goals we set for our user test was to create an innovative experience with art that encourages visitors to utilize senses other than sight as a new entry way to engage with the art. Our approach for conducting our user tests was to allow each person to explore and experience the app on their own. The decision to asses the test this way was based on the experience that we were initially creating. We decided to facilitate the experience through the Marvel App on an iPad. A script was written out and recorded to guide each user through the experience. We also provided tubes with smells associated with the painting. We wanted each user to experience that app as if they discovered this interactive on their own and were looking at the painting at the Pennsylvania of Fine Arts.

After each user guided themselves through the app, we asked them a series of questions about their experience. First we asked for the user's initial reactions about the experience they just had. Most users stated that this experience changed how they viewed the painting and that they thoroughly enjoyed it. We followed up by asking if the addition of sensory stimulation either enhanced or detracted them from interpreting the artwork. Overall, everyone that answered said that it enhanced their experience and interpretation of the artwork. We had one user comment saying that they couldn't see how a visually-impaired adult would interpret the artwork without a complete interpretation of the painting before going into the visual details.

The following question we asked all of our users was if the audio instructions were clear to them. Overall, everyone said that the instructions were very clear but the screen prompts got confusing from time to time. We ended the test by asking every user if they had additional comments they wanted to share about the experience they just had. Most users said that didn't have anything to add. Others had comments on how this experience can be applied to different types of paintings or suggestions on how to distribute the smells.

# Findings



Overall, testers enjoyed the addition of the smells for interpreting the painting. Though a few were confused about the order in which they would smell them, or if they would be smelling them all at once.

Some testers preferred one sensory experience over the other (i.e. found the audio more effective than the smells), however the majority of testers found the combined sound and smell experience compelling and effective.

Some users were confused by the look up screen, and the "escape" button. These interface features didn't make it clear what they were supposed to do.

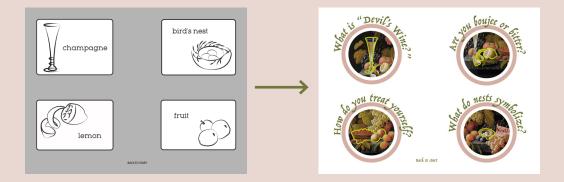
A few users mentioned that they wanted more of an introduction about the painting before getting into the details.

There were also a few comments about the difference in tone between the painting and the audioscapes. While the painting is quiet and still, the audio is lively and active.

One user mentioned that it might be difficult multi-tasking to experience all of the different parts and pieces.

One user didn't know what's the next step after listening to the cutting, chopping and party sounds.

# Changes



After conducting user testing and reviewing the data gathered we determined that several changes were necessary to improve users experiences with the immersion. We understood that some of these changes could be accomplished within the two week we had to adjust our prototype. Other changes we either did not have the time or the resources to make.

The changes we did make to the prototype included:

Adding audio to the app's welcome screen that introduces users to the painting.

Changing the screen that prompted users to look at the painting while experiencing sounds and smells to say "look up at the painting" instead of simply "look up."

Adding images of the portions of the paintings each individual experience discussed to the prompt screen.

Adding questions around those pictures to get users interested in using more.

Adjusting the volume on the audio tracks so that all sounded the same.

Adjusting where the escape button was used within the app and supplementing with buttons that read "back" where appropriate.

The changes we were not able to make to the prototype included:

Shortening the audio tracks to ~30 seconds each.

Adjusting the audio interpretation to sound more story like than curatorial.

Including the element of touch, for an added sensory stimulus.

## conclusions & Recommendations



Based on the data gathered during user testing we were able to make several conclusions regarding the use of sensory immersion as an interpretive element in an art museum setting. We were first able to determine that people generally enjoy experiencing art in a non-traditional way. We were able to further conclude that the multi-sensory experiences can provide unique access through which people can interpret art. Not only did these experiences provide an access point, but they also created an enjoyable environment in which the users could experience art. Synthesizing all of these findings we were able to make the final conclusion that this type of sensory experience would be a beneficial addition to art museums.

In future our design can be developed and improved in a couple ways. First, more research should be done to better understand different interfaces for visually impaired users. Second, the sensory immersion should be tested in the museum to see how the actual technology (i.e smell tube) works. Third, the sensory immersion should be tested and implemented with other works of art. Last but not least, it will be great to incorporate an additional touch element in our design, and provide multiple perspectives in audio interpretation.

# Appendix A: User Testing Data

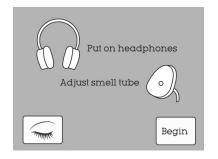
Timestamp	Notes from user testing	What are your initial reactions to this experience?	Did the addition of sensory stimulation enhance or detract you from how you interpreted the artwork? Please explain further.	Were the audio instructions clear as you moved from screen to screen? If no, please explain why.	Do you have any additional comments?
	pretending to be blind. it's like i'm in a kitchen, lemon, dining in a restaurant, ooh champagne. lovely. i wanted to learn more about champagne. fix Williamsport new york audio.	as somebody who is pretending to not be able to see, I feel like the painting would have a birds nest, a bottle of champagne, and an arrangement of fruit, but i dont have a sense of the tone, I have a sense of what the objects symbolize, but not a general assessment of the look and feel of the painting, the sounds are very active, but the painting isn't because it's a still life, it doesn't directly represent the artwork. sensorilly recreate the painting, doesn't work.	without sight i wouldn't have any experience with the artwork.	i had difficulty to find the buttons, because it is totally flat. what do people use for accommodations on touch screens?	i really liked it. i liked smelling things. clarifying what the goal is. to create an accent to the piece or recreate the piece.
		It was cool. It put him in a scene of a warm place and was relaxing. He didn't listen to the information, was distracted by the scents.		The audio instruction were pretty straight forward.	The smells were interesting. He said that he didn't pay attention to the audio. He said that people usually have a hard time multi-tasking so an app like this might help with part of the experience but not the whole thing.
	Helen wasn't sure how to begin the app. She said the look up screen is confusing. She said the smells smelt artificial. Smelling three at once is also confusing. The grapefruit was too over powering. The sound was confusing because it looks like a quite painting. The sounds reminded her of at a restaurant. Some of the smells weren't really distinct. Found the explanation of the champagne a little short, she wanted more information on what the painting was about. The explanations weren't consistent to what she was viewing in the painting (she is an Art Historian and has background knowledge on this work of art). The description of the lemon was slightly off. Label scents in the future. Pulling individuals		It enhanced her experience because it led her to think about fruit in general and how it deteriorates. The idea of disillusion came through from the smells.	The audio in the beginning wasn't clear. The look up screen needs to be more clear as far as where you need to look. Using the word escape is a little strong (think of another word to use)	Add a watermelon smell in there to replace a citrus smell. If you presented this as this is at the end of summer and ask what season might come next. To give a sense of the passage of time. Descriptions don't hurt, but provide prompts to provoke the visitor to explore other own.
	Grace had question about the auto play. She said it sounded like she was at a party drinking wine. Mentioned that there needs to be a sound cue for how to move onto the next screen. Enjoys the noises in the background. She couldn't find the bird's nest in the painting. Had a fear of whether or not she would smells a birds nest (we need to make that clear).	She enjoyed the sounds and smells. She said she wishes there was a prompt to let you know when to get close to the smell tube.	She thinks it enhanced it. She said that after a while she wasn't listening to the audio. She said that still-lives are normally boring but the experience helped her interpret the painting a little better.	She said after she had the sensory	Provide a prompt to give more context to the sounds and smells she was experiencing. She said she would prefer written queues to help her
	Unsure what she is supposed to be doing during main experience. Would i be smelling all of these scents together at one time?	i really liked it. i reacted more strongly to the sounds, than smells. could be because of the way we are prototyping. gives it more dimensionality. makes you look more closely at specific elements. i didn't look as much at the still life as much as im saying. maybe a little distracted by the prototype style of smells. real life wouldn't be as much of a distraction.	enhanced. you gave a lot of content. much more digestible in pieces like this. it was entertaining yes. i got much more information that what might have been on a label.	yes, no issues	i was missing tactility. i wanted something to touch, it would be nice to have a tactile component, it was relaxing, very soothing.
	headphones might be a barrier. i don't like putting things on my head. very fruity. hearing lots of cutting chopping sounds, someone is walking in. voices. lots of voices. glasses clinking, people eating, once the sounds stopped i thought that was it. escape would be interpreted as ending everything, not as in go back to selection of foods and other things.	i like the idea of having some interpretation that focuses on smell and sound and has you look closely at the artwork, the smell and the sound are bringing another dimensions to the experience.	i thought it was fun and intriguing, i am an art historian, it just gives another dimension. not so muc thinking, but sensing, if there was something you could feel like rubber grapes.	i think they were fine. looking up was confusing, should be look at the painting.	i wonder about the little clips, talkin about specific things. you can talk about a lot of things. I wonder if those can be a little shorter, less of a curatorial voice. recasting them as stories, build the on the sensory or auditory experience. the bubbles, the liquid pouring into champange glass. more lively descriptions. minute is too long, 35 to 45 seconds. if it's too long you might have people skipping. didn't say how long the other experiences. "a story about champagne"
	chopping fruit, chatter, dinner party, toasts yes, now i want a drink. back out cancel, computer, use escape to back up. if this is overwhelming escape the experience, not to go to the next thing. i did not expect to learn	i enjoyed it. i didn't expect the social context which is nice. i guess imagined this bowl of fruit sitting in the artist studio. It's there for enjoying, more than one person can consume. conviviality. surprising and fun.	it enhanced it. that information about his time and place was nicely integrated into the audio experience. it came in really nicely. something i was surprised to learn. i had already noticed the nest, but it's nicely highlighted. i expect some kind of symbolism.	aside from initial escape mention, no.	its not overwhelming, i like the way the smell varied in the way you moved the tubes around.
4/18/2017 15:34:		i like the idea of looking at the painting and hear the story of it. and having an audio component is pretty standard. then to have the added smell, is the idea that at PAFA the smell tube, so you could smell whenever you were there? well it's kind of gross. that i'm putting my nose where other people put their nose.	it added to it. i don't like art museums because i feel like they dont give enough context for a normal person to pay attention to. here's what this means, and what this means, and gives more context.	they were except for getting to welcome screen, and to individual experiences screens.	i don't, i like this idea.

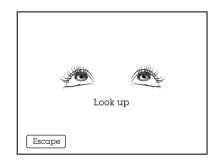
# Appendix A: User Testing Data cont'd

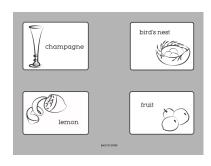
Timestam	Notes from user testing	What are your initial reactions to this experience?	Did the addition of sensory stimulation enhance or detract you from how you interpreted the artwork? Please explain further.	Were the audio instructions clear as you moved from screen to screen? If no, please explain why.	Do you have any additional comments?
4/18	She enjoyed the smells. Was confused if the bird's nest had a smell. 2017 Enjoyed the voice in audio.	She liked smellng stuff. Metioned that based off what she saw on the screen alongside the smell tubes hinted at getting a deeper experience.	She said it enhanced it for sure! It was a weird, fun experience that she enjoyed!	Defintely	Wondered how this type of experience would work with a different painting. Also thought a touch element would add to the experience as well.
4/18	He thought the exprience ended after he listened to the cutting, chopping and party sounds. He looked up to the colling.	He said that the idea of mixing the senses into watching an painting was interesting. He said he was confused with the words "looking up". He said when he tried to smell something deeply, he almost closed his eyes. He said maybe it's better to let audiences have a moment to close their eyes and just enjoy the smell, then ask audiences to open their eyes and look at the painting. Let one of the senses be more important than the other. He asked what the smelling mask is gonna be. He asked how big the painting is in reality.	He was worried that if we put the ipad and smelling tube in frount of the painting will distract people from looking at the painting itself. It should be a step by step process, when people move closer to the painting, the sense get stronger. He liked the contents that interpret he nest and fruit. He said we can try to create something like the perfume sample papers in the magazins, they a just small pieces of paper with the smells, so people can look closer to the paiting and smell the fruit at the same time. People can take the smell sample home, when they smell it again, they can think of the painting.	Yes, it's cleat. The only tricky one is "look up".	
4/18	Described the smells as very potent. Was a little confused by the background noises in audio. She was also confused as to which prompts were going to have smells and which were just sound. The bird's nest audio 2017 is quiter than the rest of the audio.	She said it was a cool experience. Mentioned that it would make it more interesteing if we used other types of paintings (i.e. landscape painting). She said that she doesn't normally look at still-life paintgs, but this experience made her stop and appreciate the painting more. Since this was also made for visually impaired adults, she said to consider text instructions for people who are deaf that might also want to experience this.		They were pretty clear!	She said it would be great to experience other paintings with this type of experience. Using different smell elements can cue sensory/smell memories.

# Appendix B: Marvel App Screens

To view app on Marvel: https://marvelapp.com/1h4hgg1







First iteration









Second iteration