



# emERge

## Team Steel

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# Project Summary

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The main challenge of the project was to re-imagine the hospital waiting room experience. Emergency waiting rooms tend to create an atmosphere that is dull and gloomy. As a result, visitors and patients often feel bored, unengaged or anxious during their long wait time. **emERge** is a digital installation that is unobtrusive and encourages our users to interact with it by simply sitting down. emERge enables a calming and scenic environment to hospital waiting rooms to create peace of mind and a relaxing experience for those waiting. These chairs contain a sensor connected to the art installation which is displayed on a TV screen. The chairs are also identified with the emERge logo sticker. Although patients and visitors can interact with these chairs by sitting down, the initial effect occurs when a predetermined element of the landscape is revealed. All these chairs together are able to work in tandem to create beautiful, unique scenes that periodically update over time. With emERge, it works to calm aggravated and frustrated users with scenes of nature would be very beneficial to a hospital's success in regards of improving their waiting environment for patients and visitors.

emERge is a group project that was created by Team Steel for a capstone course I took throughout final term of my undergraduate studies. The creation process took about 5 weeks and was completed in March 2017.



A new waiting room experience.



emERge

A photograph of a meeting room with an orange tint. In the foreground, the back of a person's head with curly hair is visible. In the middle ground, three people are seated around a table. A woman on the left is looking towards the center. A woman in the middle is smiling and looking at a laptop with a colorful sticker that says 'PROJECT MANAGER'. A man on the right is pointing towards the laptop. A camera on a tripod is in the background on the left. The text 'Project Contribution' is overlaid in white.

# Project Contribution

# Visual Designer

As a [Visual designer](#) for Team Steel, I was responsible creating visuals and formatting final documentation throughout our work process and high fidelity prototyping.

I have also contributed the following:

- Branding for the Creative Brief and User Testing Report
- User Test assets – Instructions page
- High Fidelity prototype – Digital Installation image

## Branding

For the branding of Emerge, I used tones of blue as I found through research that hospitals tend to use [cool colors](#) as it create a calm tone and a sense of tranquility. I also included a hint of orange to bring balance to the cool colors.



I was able to implement this color palette into the [Creative brief](#) and the [User Testing Report](#). I designed these documents in a color block style to section off content and highlight key features of Emerge based off our team's research.

# Creative Brief

## Team Steel Creative Brief

### Problem

The challenge we are facing is to re-imagine Emergency waiting rooms and find their potential to create a more engaging, less boring and less emotionally taxing experience.

Any visit to the emergency room can be stressful, exhausting and nerve racking. Often, the wait to be seen by a physician is long and emotions can range from boredom to anxiety. These spaces welcome a large range of 'visitors' ranging across multiple demographics of age, race, and cultures but do not necessarily cater to them or anyone in specific. Patients and their loved ones might not speak the native language or know what to expect in such a space making it uncomfortable and causing uneasy feelings.

Emergency waiting rooms are often create a dull and gloomy environment which adds to the stress of those waiting. It is our duty to reassess emergency waiting rooms and their potential to be better.



### Solution

In order to create an interactive response to the stressful, boring and gloomy atmosphere of hospital emergency waiting rooms, we are going to create an unobtrusive art installation. This installation will gather information from sensors in the waiting rooms chairs to affect ongoing change in the digital piece that will depict changing scenes of nature. The amount of people in waiting room and their seating habits will change the installation accordingly. This piece of generative art will be a point of interest in waiting rooms, relaxing and engaging its users.

## Customer & End-User

Our customers are Canadian hospitals, and more specifically, ER waiting rooms. These waiting rooms are neutral by design, with dull colours and low lighting. Seating consists of standard, simple chairs which are organized for space efficiency rather than comfort. Any entertainment provided in these spaces is usually quite limited. A typical ER waiting room includes 1-3 TV screens, which routinely display hospital information, in addition to reading material that consists of medical brochures or newsletters. Overall, the waiting room atmosphere is required to be passive and free of interference in order to satisfy the needs of all patient types.

**"In Canada, a visit to the ER can average more than four hours in length, and one in ten patients will wait eight hours or more."**<sup>1</sup>



Our solution is targeted towards people who spend time in ER waiting rooms. This includes the patients who are sick themselves, as well as visitors. Additionally, the ER waiting room is open to all types of users regardless of their age, gender, sexual orientation, economic status, or ethnic background. Users can experience high levels of stress, anxiety, boredom, and illness while they wait. Although the suggested wait time in Canadian ER waiting rooms is three hours, an ER visit can average more than four hours.<sup>2</sup> Therefore, our users are a captive audience with whom we have an opportunity to engage and entertain.

**"The highest ER wait time in the country is 9.1 hours for most patients at Grace Hospital in Winnipeg (2012-2013 data)."**<sup>2</sup>

## Requirements & Constraints

Due to extreme sensitivity of patients in hospital emergency rooms, and the passive atmosphere, any interactive device must be unobtrusive by avoiding the following:

- Flashing / disorienting lights
- Repetitive or jarring noises
- Excessive movement / spinning

Since many emergency waiting rooms do not have extra floor space for installations, any interactive device would need to be small or otherwise integrated into an existing component of the waiting room.

The interactive device should allow for customizability and freedom to discover (i.e. many use cases). The device should remain implicit and an open-ended experience. By remaining implicit, the device should be easy to use, while simultaneously easy to ignore.

The interactive device should be enjoyable by a single user, but usable by many at once. This is to promote a sense of friendliness and support in an otherwise stiff, isolated room, to help provoke simple interaction between patients and visitors.

## Tone



<sup>1</sup> Hall, Joseph. "Canadians face longest emergency room waits in developed world, survey finds." The Toronto Star, 29 Nov. 2012. <https://www.thestar.com/news/canada/2012/11/29/canadians-face-longest-emergency-room-waits-in-developed-world-survey-finds.html>.  
<sup>2</sup> Hildebrandt, Amber. "Hospital ER times reveal some 'disturbing' waits." CBC News, 18 Sept. 2014. <http://www.cbc.ca/news/health/hospital-er-times-reveal-some-disturbing-waits-1.267887>.

<sup>3</sup> Suggested wait time is three hours, as given by CAEP (advocacy group representing 1,800 ER doctors). See Hall, Joseph.

# User Testing Report



An excerpt of emERge's user testing report

## USER TESTING SUMMARY

Our user testing was split into two distinct operations. The first test looked at implicit and explicit interactions with mock buttons and sensors to see what stimulated user interest the most. This was executed through think-aloud testing, with the user being given minimal context entering the test. We discovered users appreciated discovery with the interface, but still required some basic instruction and guidance to stimulate interaction.

The second test simulated a mock experience with the prototype to understand how users reacted to the chair, sensors, instructions, and responsive program. This was executed through scenario testing, with the user given the basic understanding they were in an emergency room before entering. We discovered users found it difficult to understand how the product worked, but approved of the design choices for the responsive program.

## DEMOGRAPHICS

Studies recommend five sessions of user testing for adequate and insightful feedback, therefore we sought a minimum of five users per user test. However, during the first user test, we modified the experience slightly for a few users. We decided that having a couple extra users would be necessary to acquire an adequate amount of relevant information.

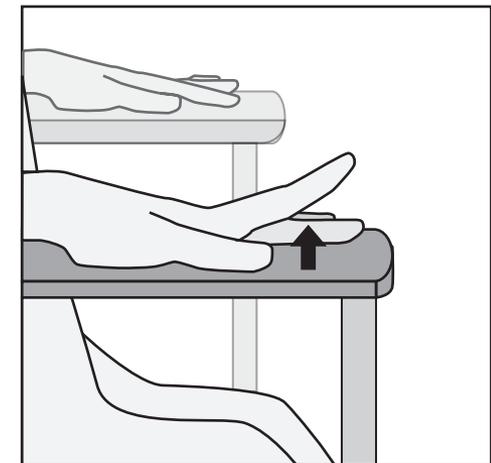
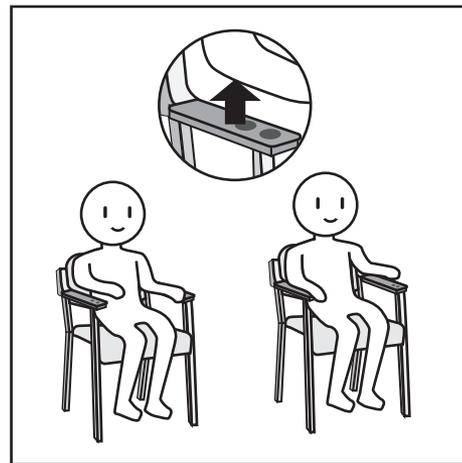
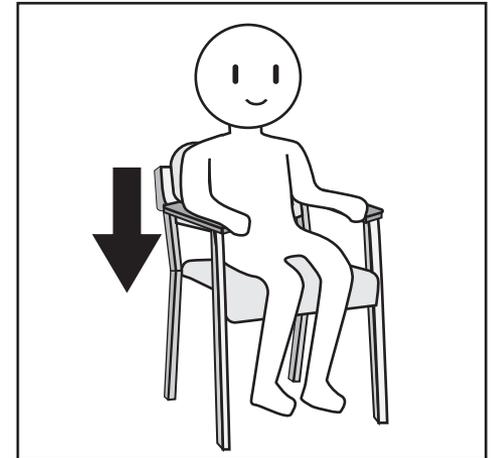
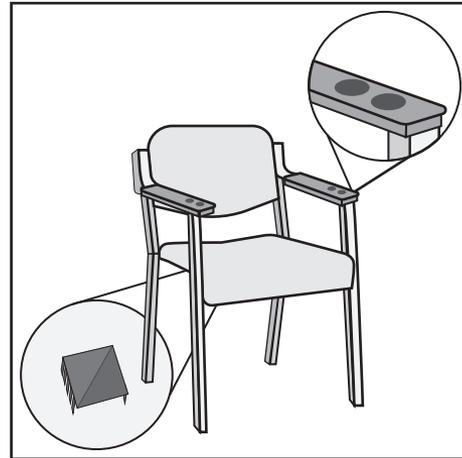
USER TEST 1	Interactive Technology (Think-aloud Test)	USER TEST 2	emERge Experience (Scenario Test)
TID	DETAILS	TID	DETAILS
A1	40, Female, Professor	B1	21, Female, GBDA Student
A2	21, Male, GBDA Student	B2	21, Female, GBDA Student
A3	19, Male, GBDA Student	B3	19, Male, GBDA Student
A4	22, Female, GBDA Student	B4	23, Male, GBDA Student
A5	30, Male, Media Technician	B5	18, Female, GBDA Student
A6	21, Female, GBDA Student		
A7	21, Male, GBDA Student		

Due to a limited available audience, we sought to have at least two testers not a part of our cohort for each test to get external feedback and opinions.

USER TESTING REPORT : emERge | 2

# User Test Instructions page

During our second round of [user testing](#), our team's goal was to discover how [instructions](#) impacted the user's understanding of the installation. I was able to create an illustration step by step guide to depict how the chair works for our art installation. By doing this, I avoided the use of language to make the installation more [accessible](#).



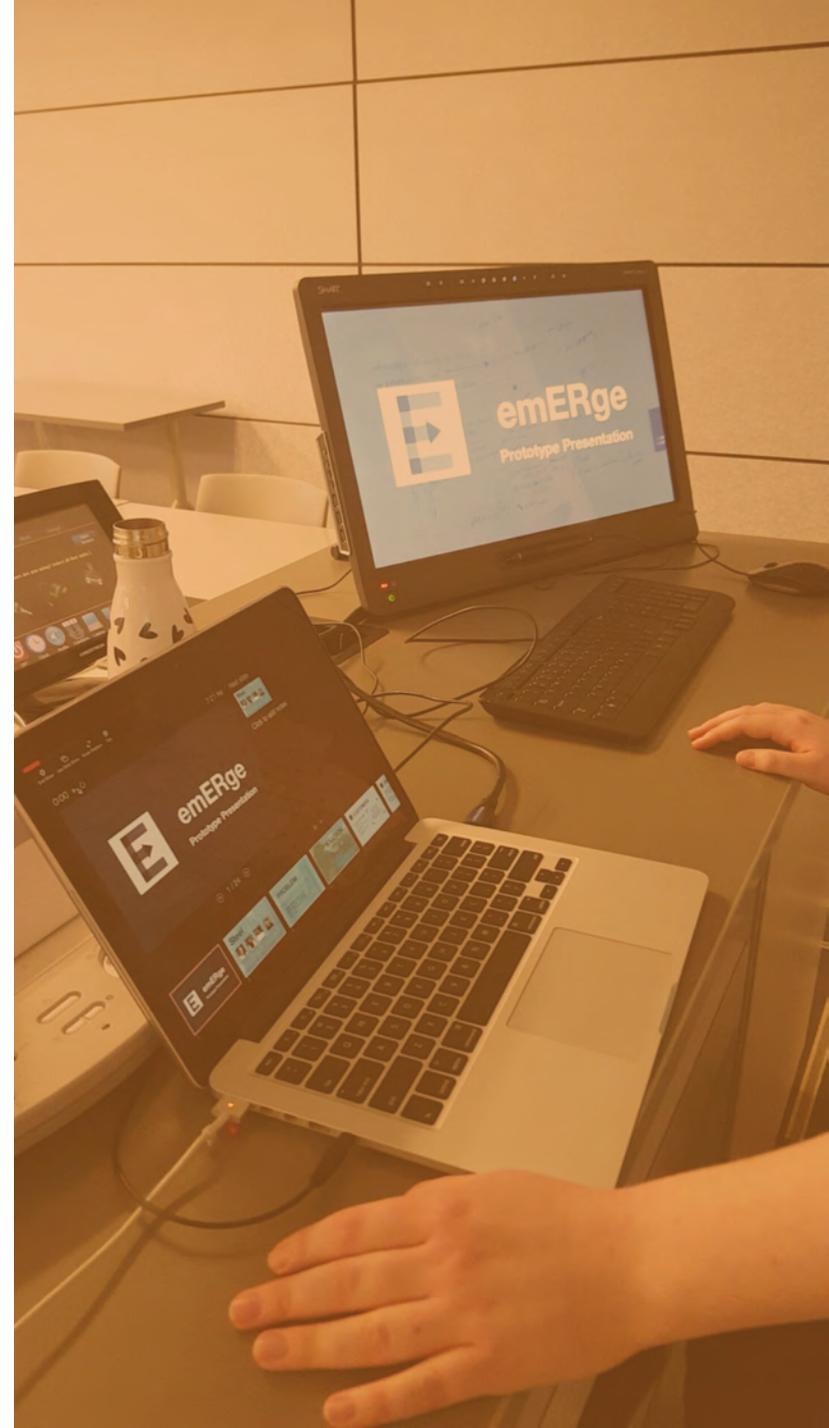
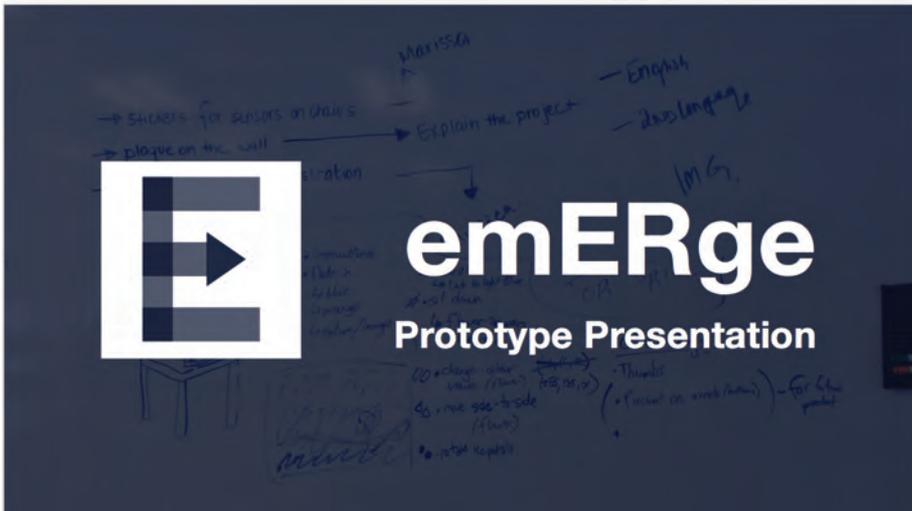


## High Fidelity Prototype - Digital Installation Image

For our high fidelity prototype, I was responsible for creating the illustration of the installation. We learned that outdoor imagery, even if simulated, has a [positive](#) effect on patient health and recovery. My team and I decided to create a landscape image. We researched ideal landscapes, from historical art landscape paintings, to vector based landscapes for inspiration. I made an initial sketch of the landscape on my sketchbook. Then I used Clip Paint Studio to colour the final image using [multiple layers](#). Once the image was completed, [Austin](#) was able to make it interactive by using After Effects.

# Prototype Presenter

I was one of the presenters alongside [Marissa](#) and [Austin](#) for our final prototype pitch. We delivered this pitch to our professors and mentors. I specifically discussed the creative brief and the design process of the digital installation image for the high fidelity prototype.



A photograph of four young women standing outdoors, smiling and holding coffee cups. They are positioned in front of a wooden fence and a brick building. The woman on the far left is in the foreground, holding a coffee cup. The woman next to her is also holding a coffee cup. The woman in the center is holding a coffee cup and has sunglasses on her head. The woman on the far right is holding a coffee cup. The background shows a brick building with the word 'STEEL' visible on its side, a wooden fence, and some trees. The overall scene is bright and sunny.

# Team Steel



# Anjelica Maglinao

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**Anjelica Maglinao** is a Visual Designer who simplifies complex concepts into beautiful digital illustrations, user interfaces and logos. Throughout her several years of experience in visual art, Anjelica has communicated her thoughts through visualization and attention to detail. She is capable of taking initiative and is always willing to contribute in collaborative projects. In 2016, she was noted as an outstanding intern at Scotiabank's Digital Factory as an Innovative Digital Experience Designer where she created high quality presentation visual assets and video content for executives. Currently, Anjelica is in her final term of her undergraduate studies as a Global Business and Digital Arts student at the University of Waterloo. To view her works, visit [www.anjeli.ca](http://www.anjeli.ca).



## Marissa Harley

**Marissa** is a User Experience and Visual Designer and her passion lies in creating simple designs for complex users. Last summer she worked as a Digital Content Coordinator for Sun Life Financial. Marissa applied her knowledge of UX/UI Design while working with clients and publishers on a variety of marketing projects. Marissa's co-workers appreciated and commended her on the strong organization, communication and teamwork skills that she displayed on a daily basis. In her spare time, Marissa enjoys experimenting with photography and sound design.



## Mara Finkelstein

**Mara Finkelstein** is a creative director that works with cross-discipline team to solve problems through strong communication, teamwork and collaboration. She has 3 years of experience working on projects that combine business, design and technology. The range of projects she has worked on spans from product to event creation and everything in between. Mara is a new graduate of Global Business and Digital Arts from the University of Waterloo, which focuses on innovation and entrepreneurship.



## Austin Fisher

**Austin Fisher** is a Storyteller and User Experience (UX) Researcher with nearly a decade of experience crafting meaningful experiences for end users. He accomplishes this through extensive user research, communicating effectively with his audience, and critically analyzing specific details in ideation phases of his work. This has proven effective when composing music, creating stories, drafting marketing ads and product descriptions, pitching ideas, and communicating with important representatives and stakeholders. Austin is in his final term as a candidate for the Honour's Global Business and Digital Arts (GBDA) degree at the University of Waterloo, a program combining marketing and business techniques with digital art and modern media. Austin aims to pursue writing and storytelling as an integral component of his UX brand in the Kitchener-Waterloo region upon graduation. To view his works, visit [www.austinfisher.ca](http://www.austinfisher.ca).