CONNECTION

INTRODUCTION

As we finally, slowly crawl our way out of a pandemic, we find that we are altered by the experience. We had to forgo so many behaviors that made us who we were, that we had to remake ourselves. Now as we attempt the return to "normal" life, we are anxious and it is hard to remember how.

This time of disconnection made it clear that human connection is a critical component of our happiness. Forty-three percent of young adults reported increases in loneliness during the pandemic.

To address this issue, I created an interactive display that allows the viewer to explore concepts of human connection in a fun way and encourages interaction with people nearby.

MY REQUIREMENTS FOR THE DISPLAY:

- interactive
- intriguing
- unexpected
- emotionally moving

THE HARDWARE SETUP

Everyone is used to touch screens, so I changed it up by creating a touch wall. I found examples that used projected interfaces on walls with capacitive touch sensors, but these were outside of my electrical engineering ability,


time and budget. I continued my search and discovered a frame that can turn any surface into a touch surface—bingo! The frame works by creating an infrared grid that registers touches when anything blocks the light. Luckily it is a very tight grid and can register many simultaneous touches.

I purchased a short-throw projector that is able to project the image from just above the surface. This reduced shadows that would interrupt the display.

THE SOFTWARE SETUP

Luckily, my dad is great at programming web interfaces. Even luckier, he thought this project sounded fun and was willing to spend many hours with me, making my vision a reality. I went to great efforts to simplify my programming needs, yet I still managed to make it really difficult. It is easy to create a drag-and-drop interface on a website, but it is NOT easy to create one that allows 12 simultaneous touches.
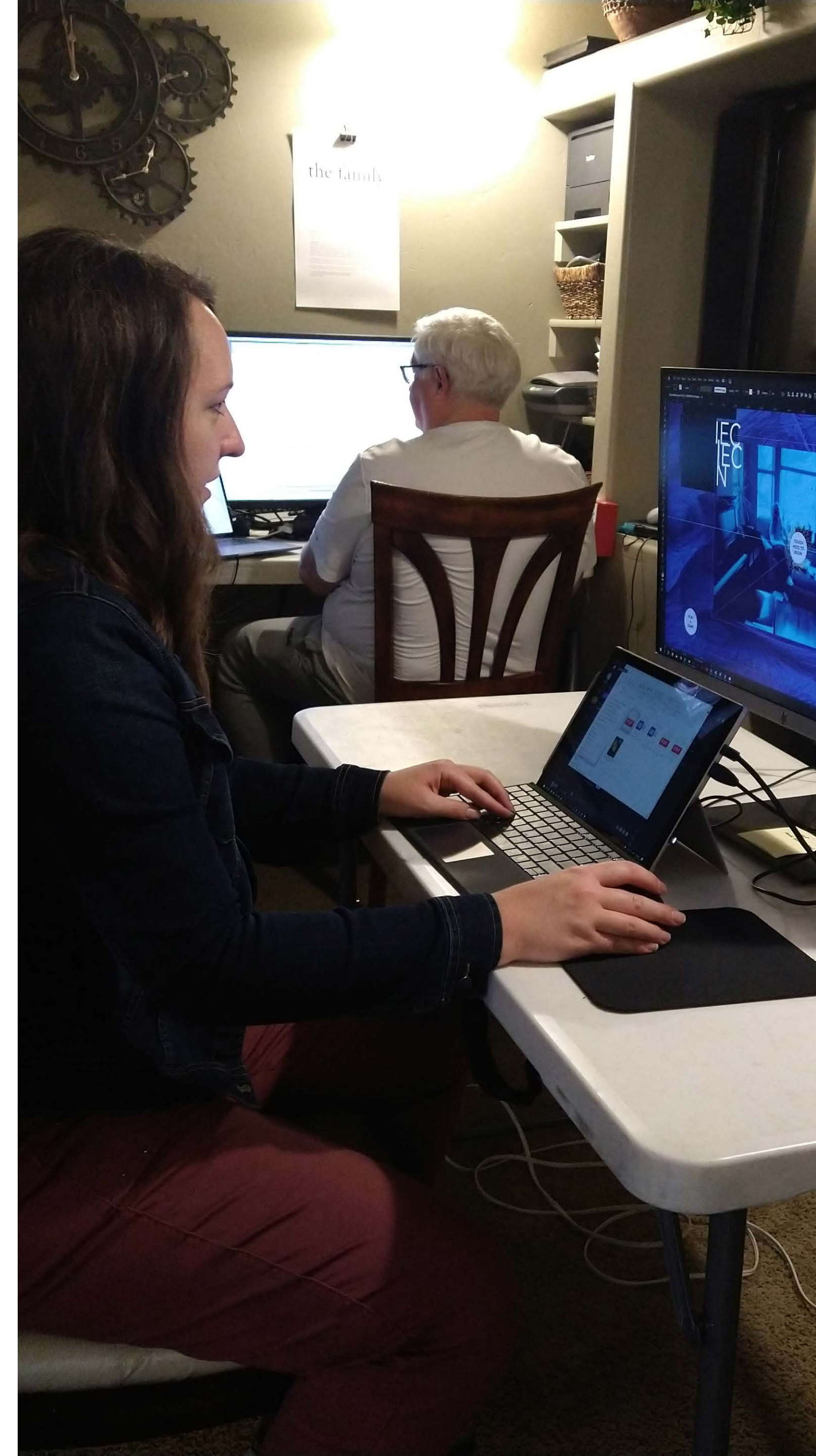
THE DISPLAY

COMPONENTS:

- **Text**
- **Videos**
- **Game**
- **Simulations**

TEXT - INFORMATION

The text discusses problems caused by a lack of connection, ways we can improve connection, and how it helps. The "Connect" screen suggests ways that the viewer can connect with other people in the moment.

VIDEOS - HUMAN INTERACTIONS

I created an interactive video experience that gives the impression of watching a scene through a window. I filmed a series of videos that captured various simple interactions. The user is able to touch different parts of the screen which change the interactions. For example, if the piano is touched, a boy enters the room and plays the piano. The video then loops on him playing until the user makes another selection. Touching the piano again causes him to leave the room, but if they touch near the doorway, a toddler enters and plays the piano with him. As they play he laughs and smiles.

The other interactions follow similar threads. A person enters alone and if they are joined by someone else, the interactions are positive and bring a smile to their face.
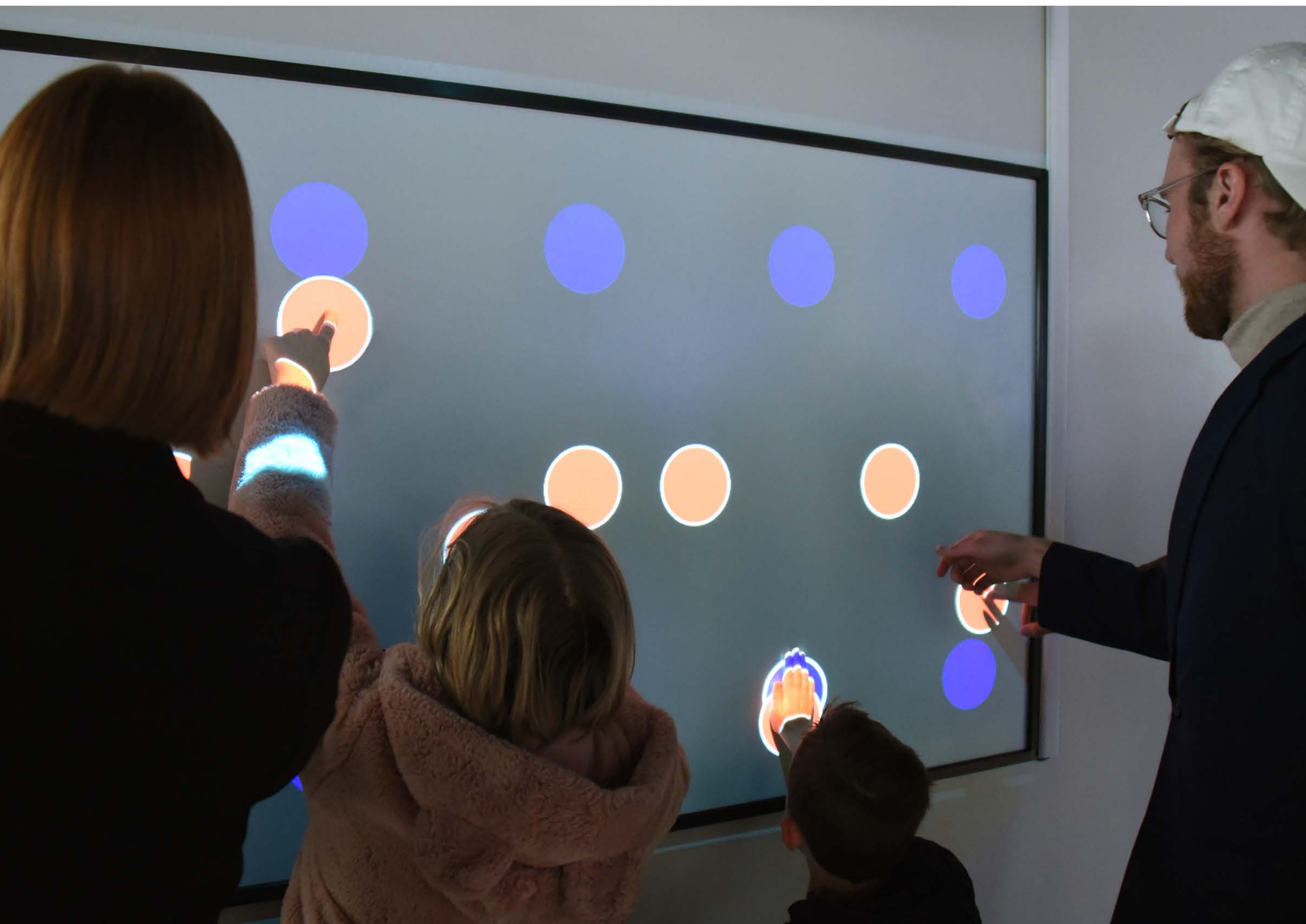
GAME - CONNECTION

The game is a very important component. This is where the point is hammered home. Users are presented a game with no instructions. They have to explore a bit to learn the interaction, but it is simple enough that everyone always does. They must move a circle to a goal. They start with one circle and gain another each level. On the second level they learn that the circles must be moved to the goals at the same time. They are able to complete the first two levels by themselves, but each level requires the use of an additional hand. They have to reach out to people nearby for help. The final level requires 12 hands! This means that successfully completing the game turns into a vertical Twister-like game on the wall. It always ends with smiles and cheers! They are connecting and having fun!

FLUID SIMULATIONS

As I was working on my plans for this project, I was frustrated knowing that it was missing something. It needed an element that would tie everything together and really get the viewer engaged. I searched and searched and finally came upon the solution—fluid simulations. I found that a bunch of programmers had experimented with these fluid simulations in testing WebGL 2.0, a JavaScript API for GPU based physics and image processing on web pages. I found two that worked well and that were open source projects and integrated them into my design.

These touch-based simulations were the perfect finishing touch. They were customizable, interesting, made the user want to play with the display, and are very fun to watch. I used the colorful simulation as the reward for finishing all the levels of the game.

Once you start playing with this display, it is hard to stop, I feel like I achieved my goals of creating an interactive display that can capture the hearts and minds of the viewers.

ARTIST'S STATEMENT
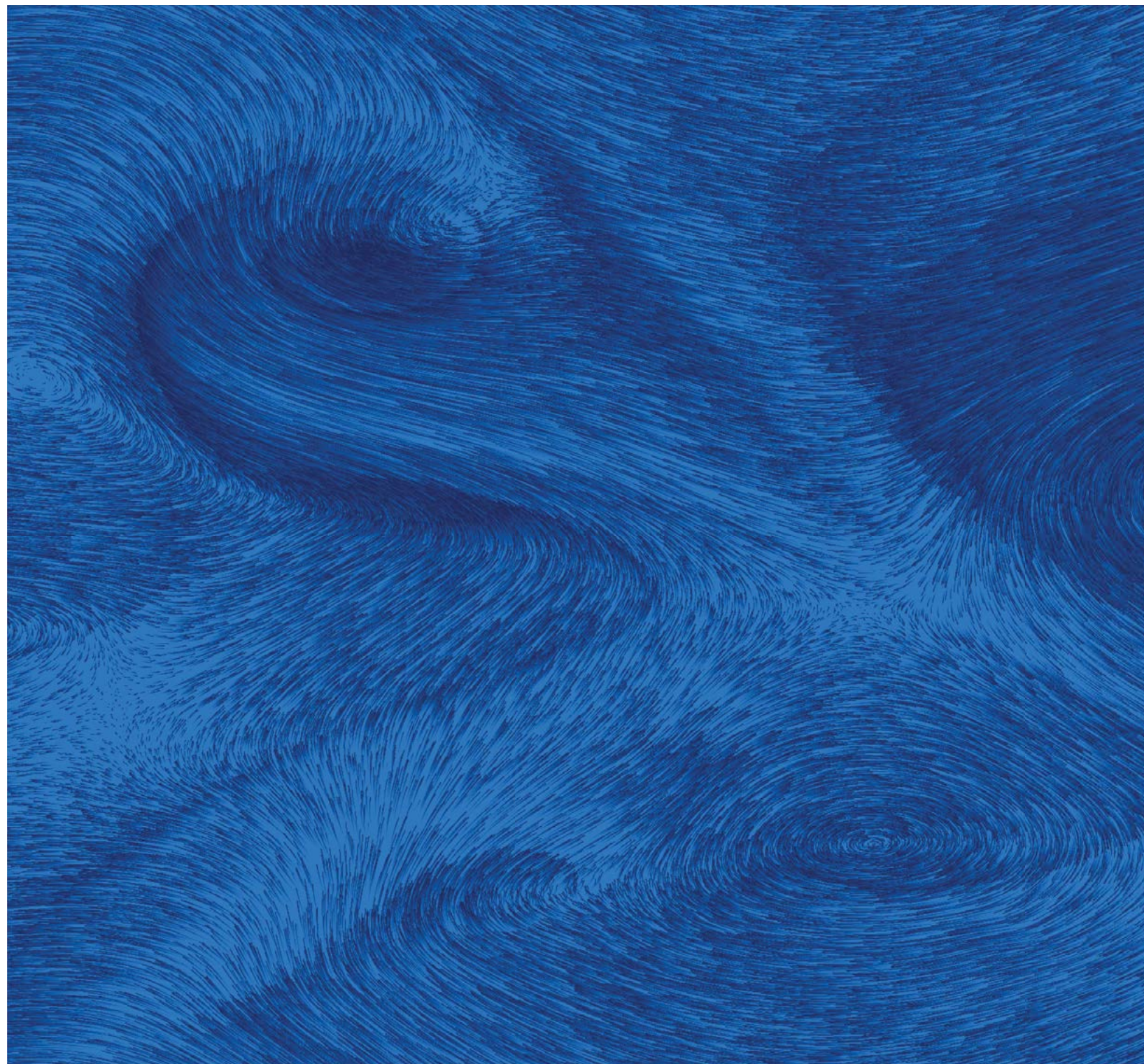
During the last two years, we have been put through the wringer in many ways. Most people have experienced increases in stress, anxiety, fear, sadness and loneliness. We have been cut off from loved ones, co-workers and classmates. Human connection has been much more difficult and we are still suffering the effects. Of young adults surveyed, forty-three percent reported increases in loneliness since the outbreak of the pandemic. Now we find that we're out of the habit of doing many of the things that once kept us connected.

I place great importance in forming social bonds and helping those around me. I find that when we share the small moments of life together, such as chatting before class, playing with our kids at bed time, or sending quick messages of love, we create social connections.

When we feel connected, we are supported and strengthened.
When we feel connected, we can succeed in difficult times.
When we feel connected, we are better versions of ourselves.
When we feel connected, we are more able to help those around us.
When we feel connected, we find common ground.
When we feel connected, we are a better society.
When we feel connected, we thrive.

As you explore this interactive artwork, please watch for the joy that is found in small connections and take a moment to consider the importance of the social connections in your life.