



# Using Tangible Interfaces to Mediate STEM Content on Interactive Walls



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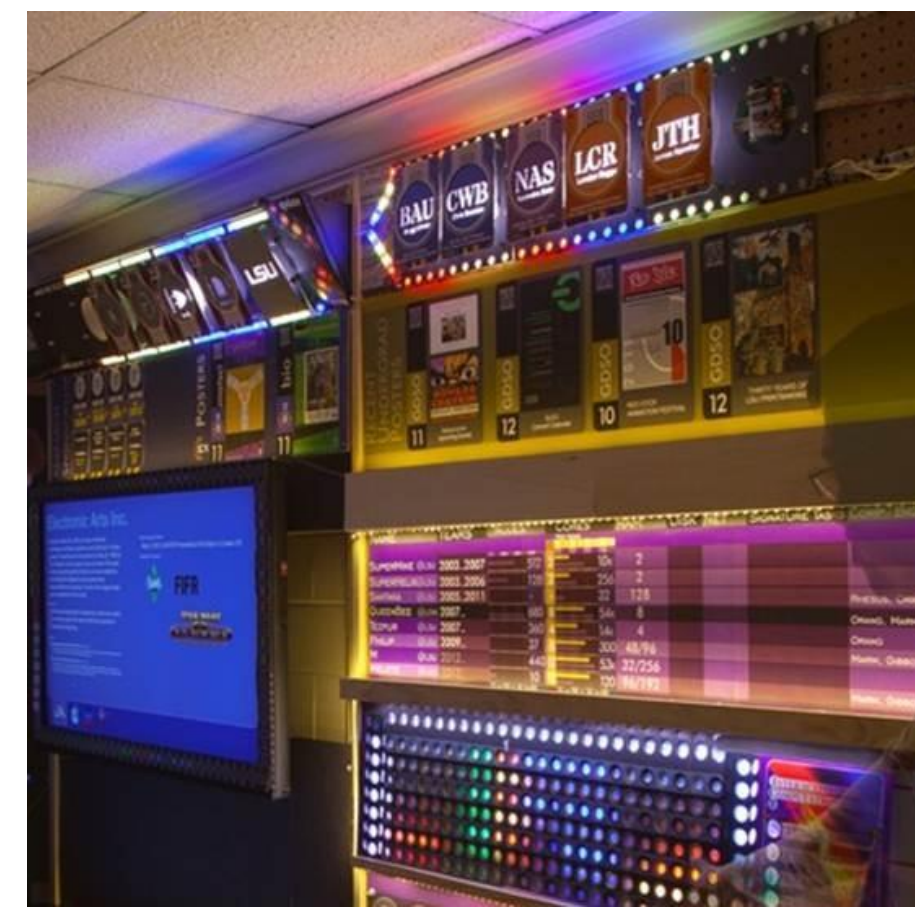
## Abstract

Summer REU students work vigorously throughout the summer on a variety of projects in hopes to accomplish a goal and get hands on experience of what to expect as a graduate school student. At the end of the program, students are allowed the opportunity to present their research at a conference. Once this is over, many student never use or present their research again. This summer, my goal was to find a way to present STEM content. After reviewing the ongoing work of my mentor, I decided to use tangible interfaces to mediate STEM content on interactive walls. With this, the work of the work of the REU students can be displayed for many years to come.

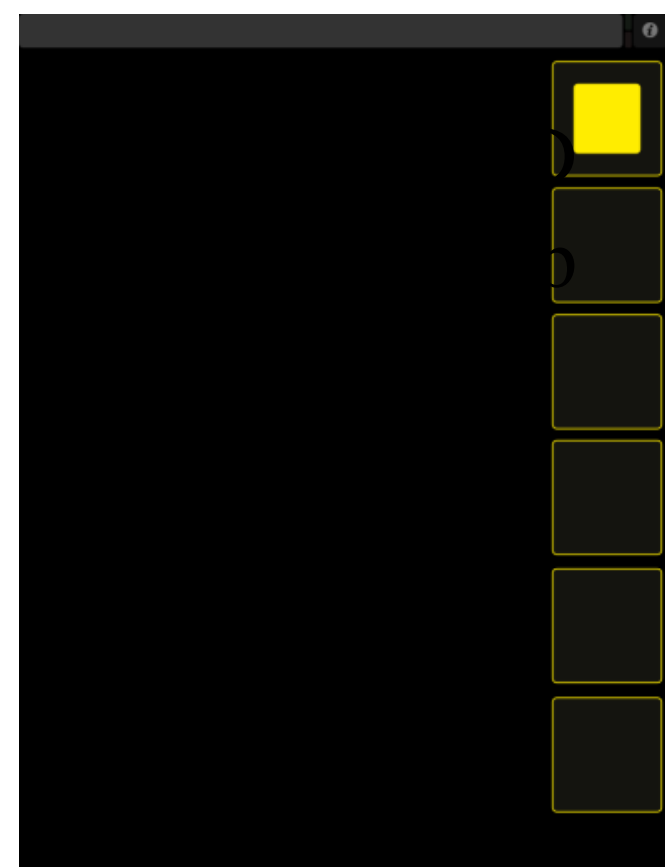
## Materials

Implementation components of this project included:

- TouchOSC- iPad application for iOS
- TouchOSC editor- create TouchOSC layout
- Cartouche-physical object that represents data
- Laser Cutter and Inkjet Printer-create cartouche
- Led Strip- to designate selection
- Arduino- power/control LEDs
- iPad-run TouchOSC application
- CorelDraw x5



Hallway Facade



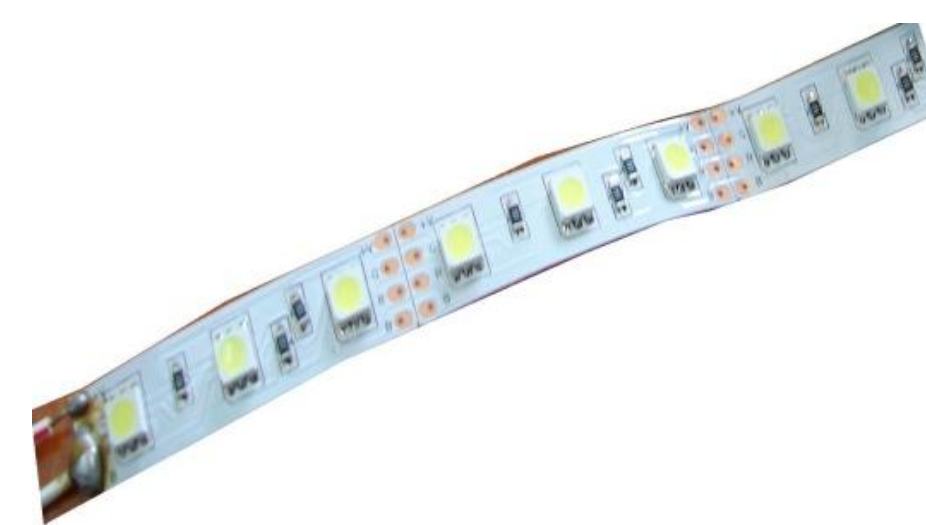
TOUCHOSC layout



Cartouche Cutout on iPad



Arduino



LED Strip

## Methodology

The following steps were taken to complete this project :  
Cartouche

- Gather information to be presented from REU students
- Create cartouche and casier layout in CorelDraw x5
- Cut cartouche layout using laser cutter
- Print information on cartouche

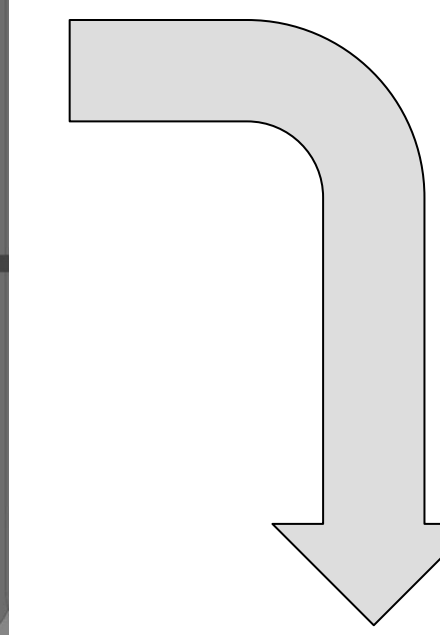
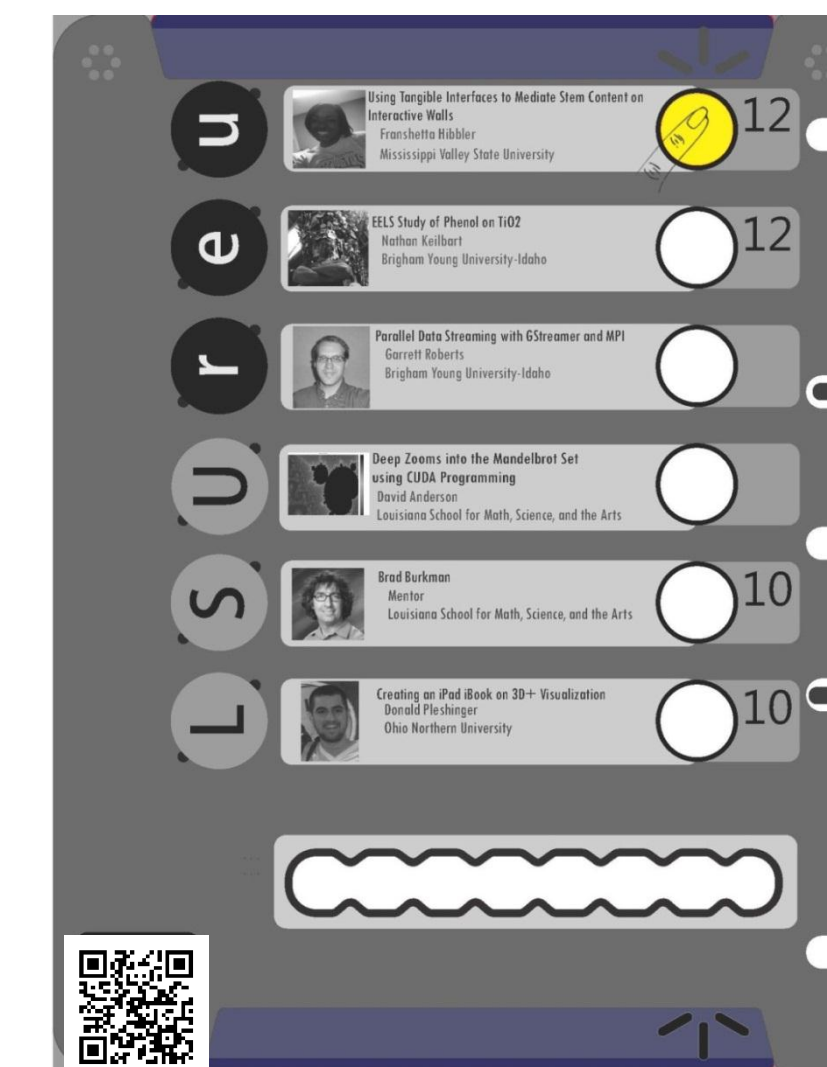
Casier

- Create TouchOSC layout using TouchOSC editor
- Use Java code to receive OSC messages, translate them into Arduino readable messages and forwarded them to the Arduino
- Use the arduino to control the LEDs
- Create bezel Design

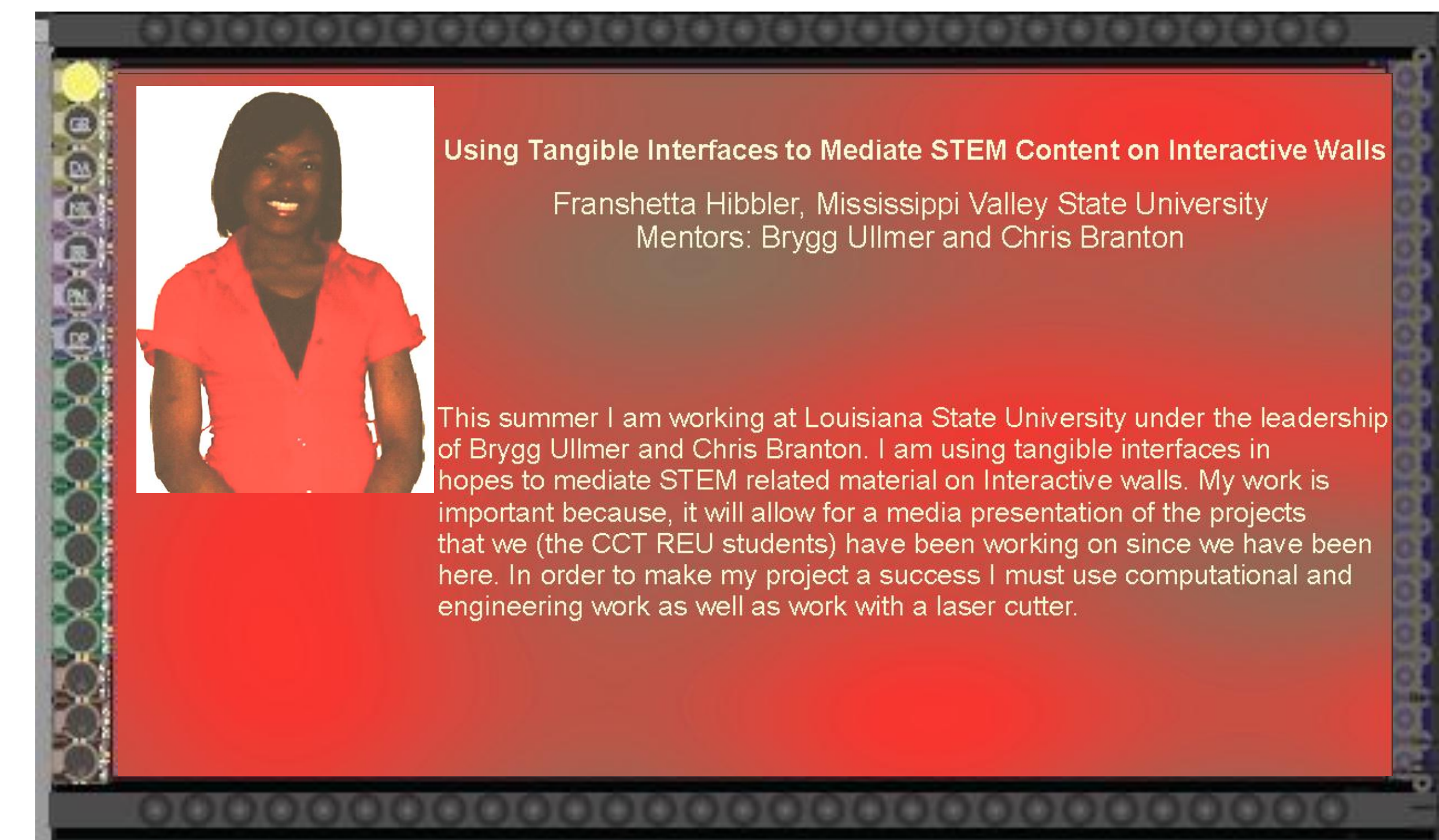
## Implementation Scenario

- One will use the cartouche to select the button beside the REU student that he/she wishes to know more about
- The button on the cartouche lights as well as the led under the bezel on the edge of the LCD
- Information about the chosen student appears on the screen as shown in results section of this poster

## Results



Bezel Design



## Future Goals

- Create website using HTML5 that would display similar content on mobile phone when navigated to by QR code
- Include multiple years of REU programs on cartouche
- Allow content to be controlled by mobile phone

## Contact Information

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