Me Too is a movement to, among other things,

radicalize the notion of mass healing. As a

community we create a lot of space for fighting

and pushing back but not enough for

connecting and healing… for those who are

ready, standing up and saying 'Me Too' can be

a deeply cathartic experience.

Tarana Burke

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ABOUT

DATES	**DATA**	**DESIGN**
Immersive Scholar Residency,	*Library Total*	**(workflow)**
Raleigh, NC	2,629,581	
8.15.18 - 9.25.18		Research (data & Protest)
	Dates of Data Collection	Pen/ paper sketch
Prototype @ Ipearl Theater,	October 1, 2017 - August 15, 2018	3D model
Raleigh, NC		Texturing
9.25.19	*Data Type & Language*	Lighting
	Twitter, English	Camera rigging
Data Acquisition		Rendered animation
Schlesinger, Cambridge, MA	*Analyses Include*	
Summer 2019	Emoji sentiment, time of day,	
	keyword, recurring #, and retweets	

OVERVIEW

Coded Glass explores the urgency of the #metoo movement, the role of social technology, and the ways in which individual narratives can shape the web as a form of community building through the metaphor of glass, a rich art historical material.

This project has two main activities: *research*, in the form of data collection and analysis, and *presentation*, through the development of immersive video art.

Prototyping and research for this project began during an Immersive Scholar Residency, funded by a grant from the Andrew W. Mellon Foundation, in the fall of 2017. Working with a a team of data specialists and emerging technology librarians, we created one of the first public English-language libraries of #metoo Twitter data in the U.S. from 10/01/17 - 8/15/18. Documented using all open source tools, this library is first acquisition in the digital #metoo archive at the the Schlesinger Library at Harvard.
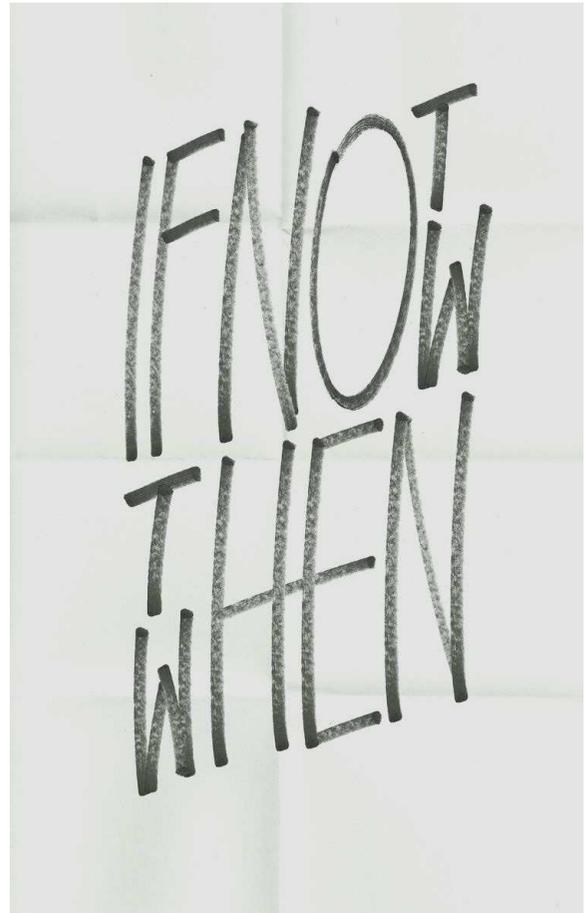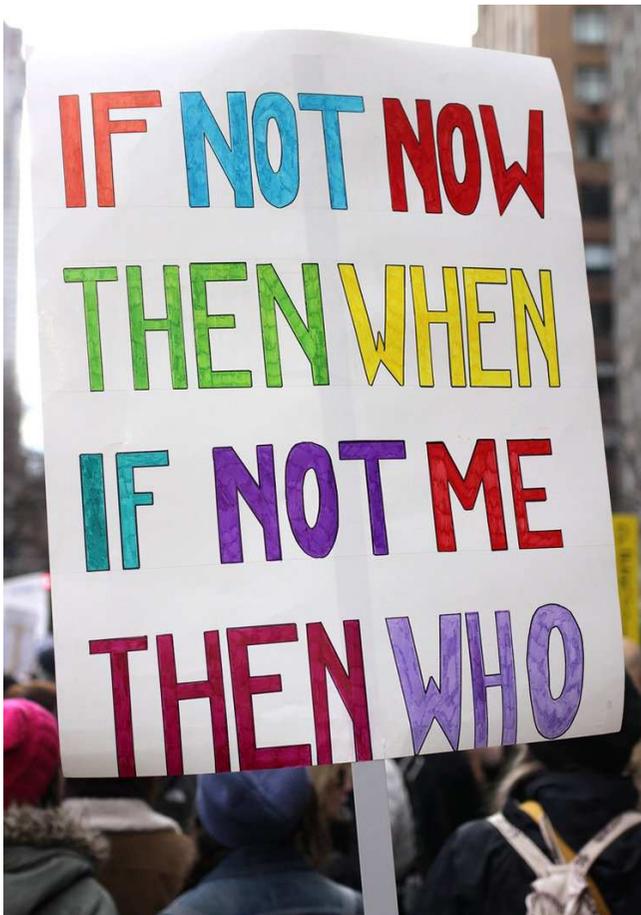
Above: Protest signs, New York, NY, December 9, 2017
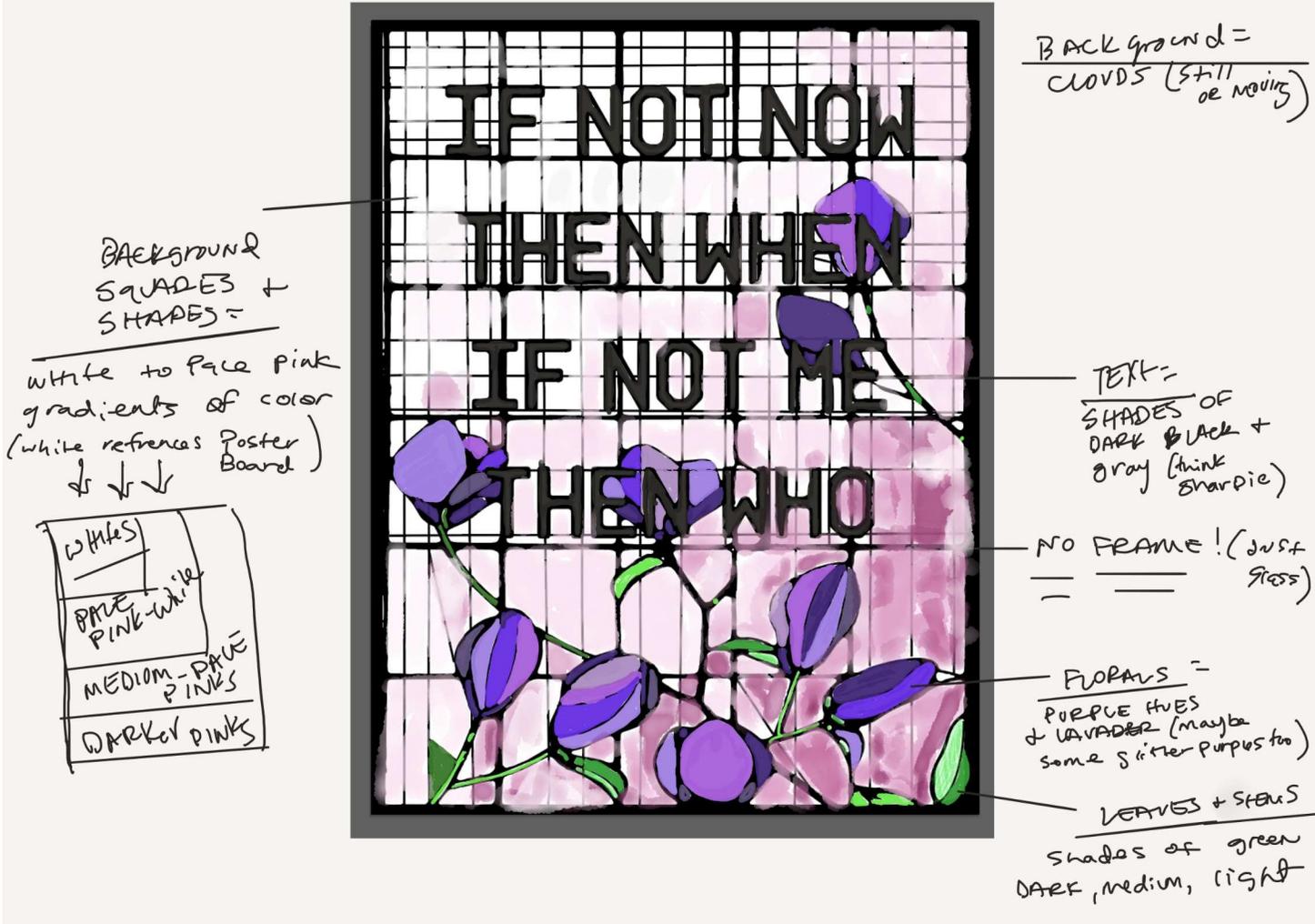
Above: Sketch of window design

*Following: 3D render of window design, 5345 .OBJ shapes*

Stained glass is used as the primary medium for this project as a reclamation of sacred space - not tied to any religion - but instead used to reflect on the relationship between contemporary forms of protest and social media. Working from traditional paper patterning methods, to 3D modeling, texturing/coloring, lighting, and finally rendering, each piece of "glass" becomes its own digital object.

The imagery used to produce each of the stained glass windows in this project references specific data and cultural documentation related to the #metoo movement. Documentation includes protest signs, emojis, and photographs from IRL protests gathered via social media.

Windows live in a fabricated digital space -- a digital sky with sun or sun set. Each scene is recorded and rendered and exported as a frame-by-frame animation. Window designs thus far have ranged from 1000 - 9,500 individual .obj pieces and animations range from 3 - 6 minutes each.

A successful prototype of this project was presented on the 21' Christie tile video wall in the iPearl Immersion Theater at NCSU in Raleigh, NC. To develop this project further, it is envisioned as a collection of videos for a 360° projection dome. This will allow the work to travel, and create physical space around the digital screen - space for conversation, performance, reflection, and healing.

THEN

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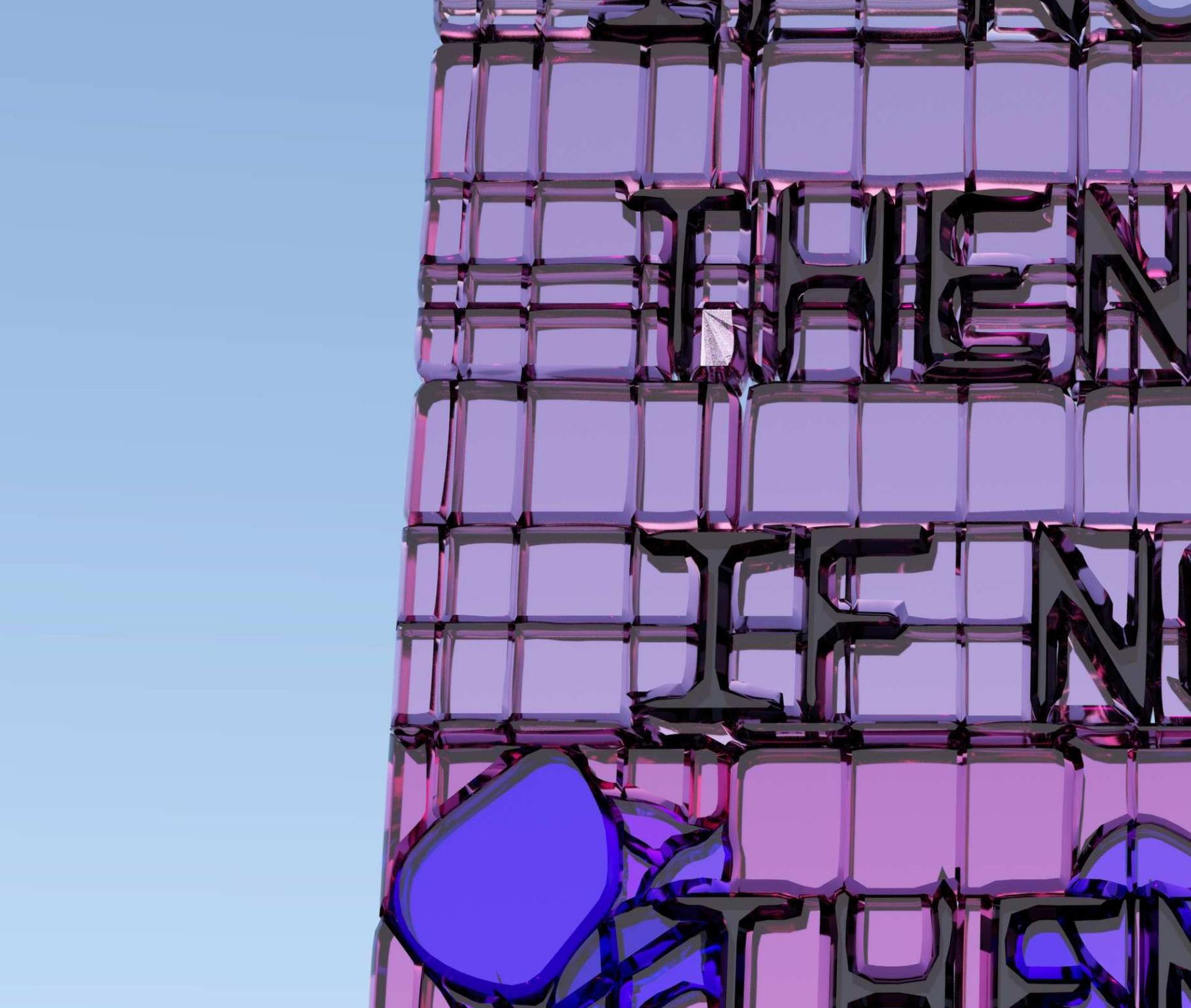
PRINCIPAL ARTIST
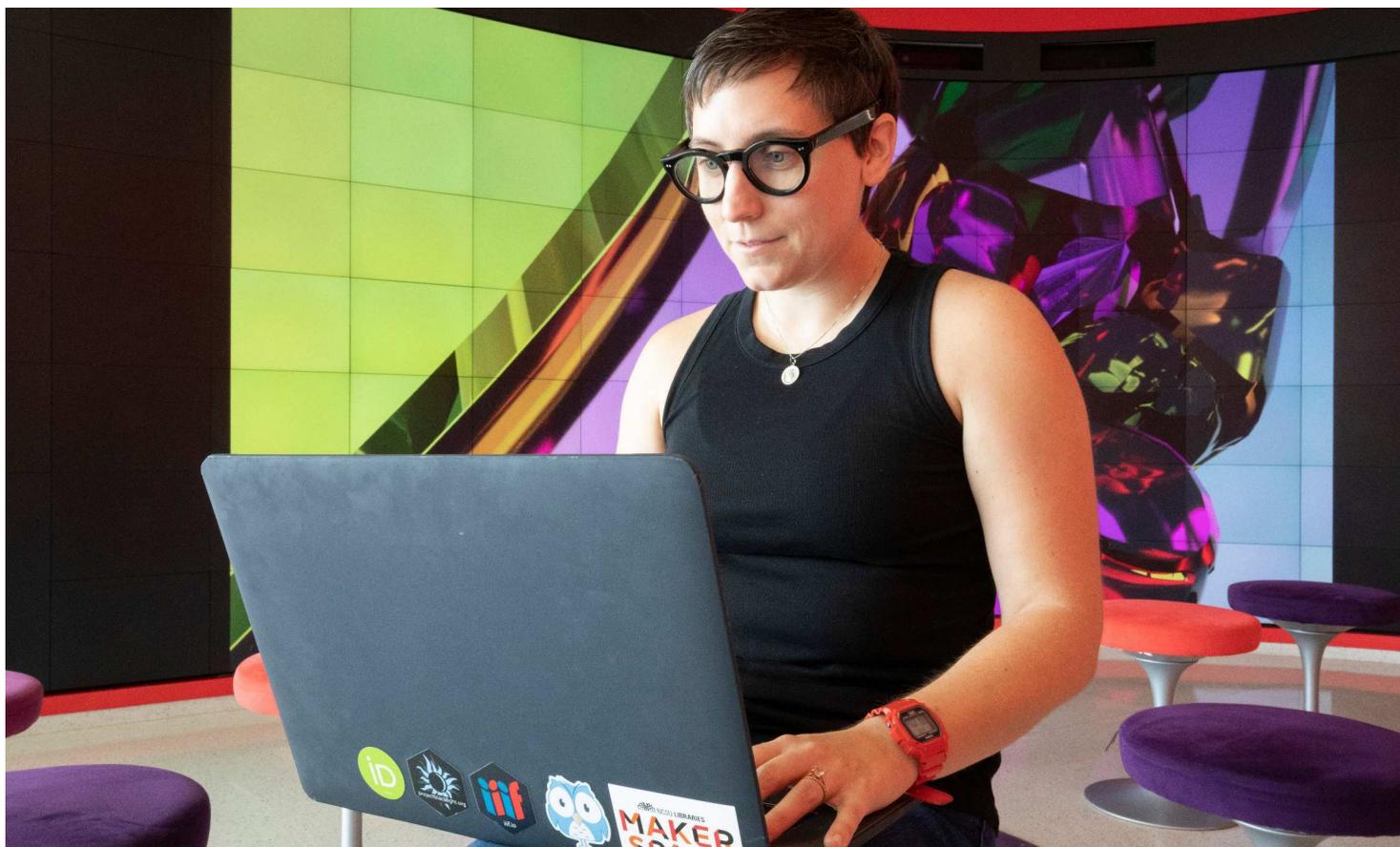
Liss LaFleur (born 1987) is a contemporary artist, activist, and educator based in Dallas, TX. Her research-driven artworks explore the digital abstractions of identity, with a particular emphasis on exploring the ways queerness and feminism intersect. Her artworks include video, experimental animation, glass, performance, and installation. She is currently a 2018-2019 Immersive Scholar, funded by the Andrew W. Mellon Foundation.

LaFleur has exhibited internationally, including at the TATE Modern (2014), Cannes Court Métrage (2013), through PBS, the Reykjavik Art Museum in Iceland (2012), and the Czong Institute for Contemporary Art in South Korea (2017). Her recent lectures include "Queering Virtual Reality" at SXSW (2017) and "Queering New Media Art" at the College Art Association (2018). In 2017, she was an Artist in Residence at the National Museum of Glass in Tacoma, WA.

LaFleur was born into a family of creative figures in Houston, Texas: her grandfather was one of the first public radio hosts in the south; her grandmother, a beloved opera singer; and her mother, a glass artist. She holds an MFA in Media Art from Emerson College (2014), and is currently an Assistant Professor of New Media Art at the University of North Texas. www.LissLaFleur.com

LINKS

Project Site

https://www.codedglass.com/

Immersive Scholar Site

https://www.immersivescholar.org/

Schlesinger Library #METOO Collection

https://www.schlesinger-metooproject-radcliffe.org/metoo collection

ETHICS STATEMENT

The collection and use of social media data requires special ethical consideration on a project-by-project basis. The lack of user awareness surrounding third party collection and use of social media data muddies the waters related to informed consent of research participation. Additionally, the deeply personal subject matter of the #metoo movement amplifies these concerns within the context of this specific project.

The project team made a few decisions throughout the project that we hope helps to mitigate some of these ethical implications. These decisions included:

1. Not displaying the full content of any individual Tweet or set of Tweets.

2. Not displaying the user name of any individual accounts contained in the dataset.

By not displaying the full content of any individual Tweet we hope to lessen the possibility of harm that could be caused by a Tweet being taken out of context or used in a context that was not initially intended by the author of the Tweet.

While this project only used publicly available Tweets, the project team is aware that many users may not wish to have their participation in the MeToo conversation highlighted in additional public ways. By not including Twitter handles we hope to not draw any unwanted attention to individual participants in the conversation.

3. Only redistributing the Tweet IDs of the Tweets used in the project.

4. Working in the open.

We are only distributing the Tweet IDs of the Tweets used in the project (found in the included data files). This allows us to make the full dataset of Tweets publicly accessible while not making the names, Twitter handles or other identifying information from the dataset publicly available. It also complies with the Twitter Developer Agreement.

We focused on using open source software for the collection and analysis portions of the project so that the analysis steps can be recreated by anyone that is interested. We are documenting and making the data publicly available in an effort to be as open and transparent as possible. Some of the tools and resources that we have found helpful are: Documenting the Now and the Social Media Archives Toolkit.

CREATIVE PROCESS

KEYWORDS

Cyberfeminism

Future Feminism

Social practice

Queer tech

New Media Art

For this project, stained glass is used as the primary medium to reflect on contemporary forms of protest.

Historically, stained glass windows were used to both enhance the beauty of their surroundings, and inform the viewer through narrative or symbolism. Beginning in Europe between the 10th and 16th centuries, stained glass informed a predominantly illiterate population through visual representation storytelling. In contemporary practice, we see references to stained glass in the work of Jean René Bazin, Tom Fruin, Kehinde Wiley, and Raul De Nieves.

To create the windows for *Coded Glass*, the creative process includes:

1. Researching imagery related to the #metoo movement and designing a stained glass inspired by it

2. Using 3D modeling software (Maya) to transform 2D designs into 3D modeled spaces and objects

3. Recording frame-by-frame animations within the virtual world

4. Rendering and editing videos for a shared viewing experience
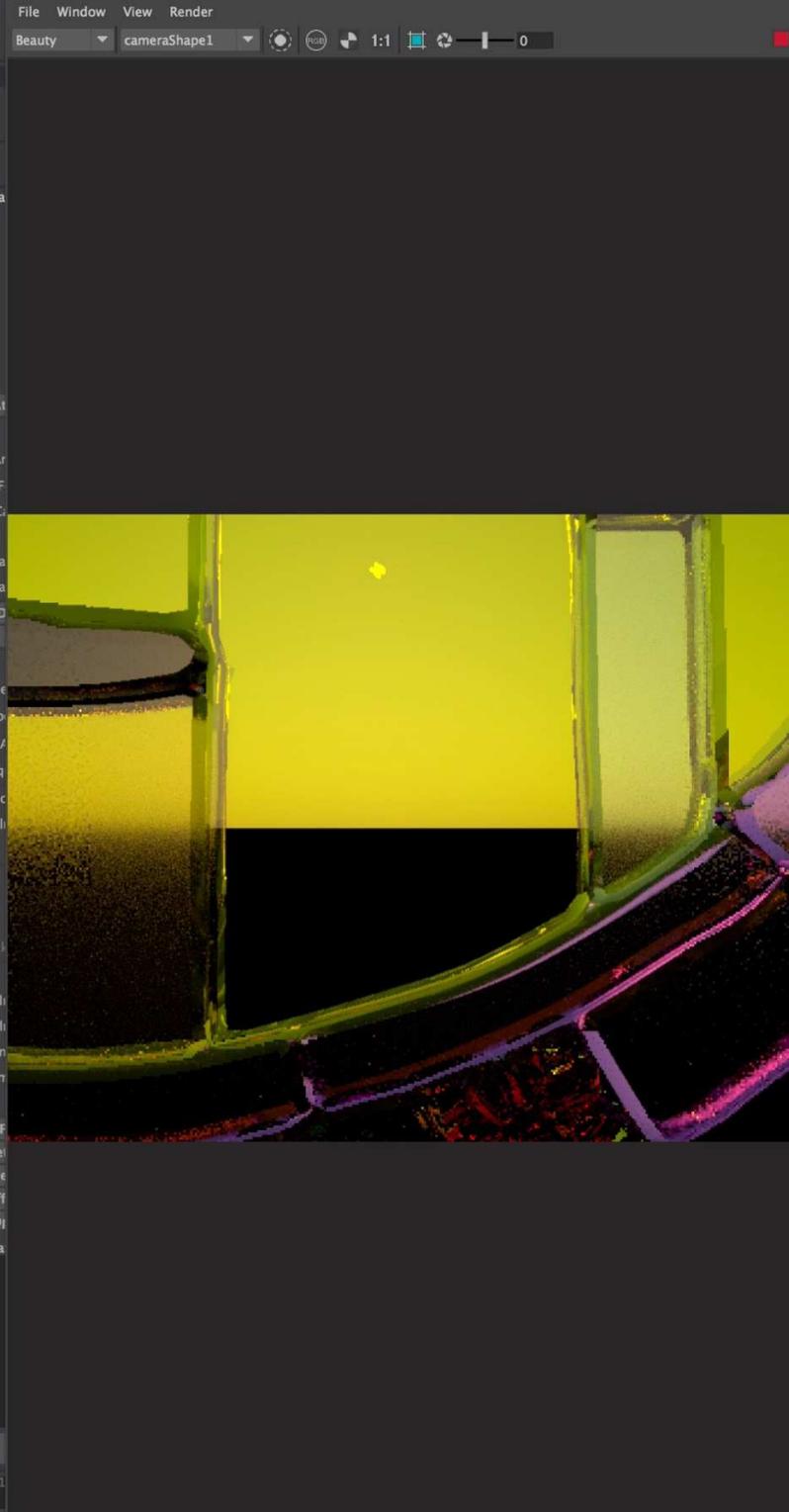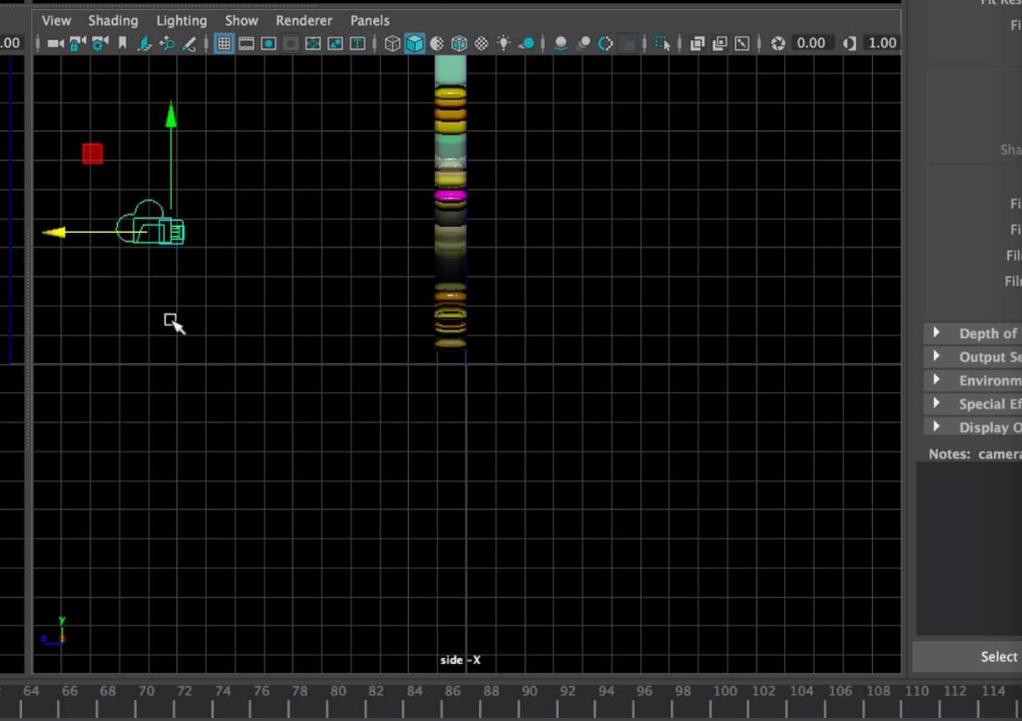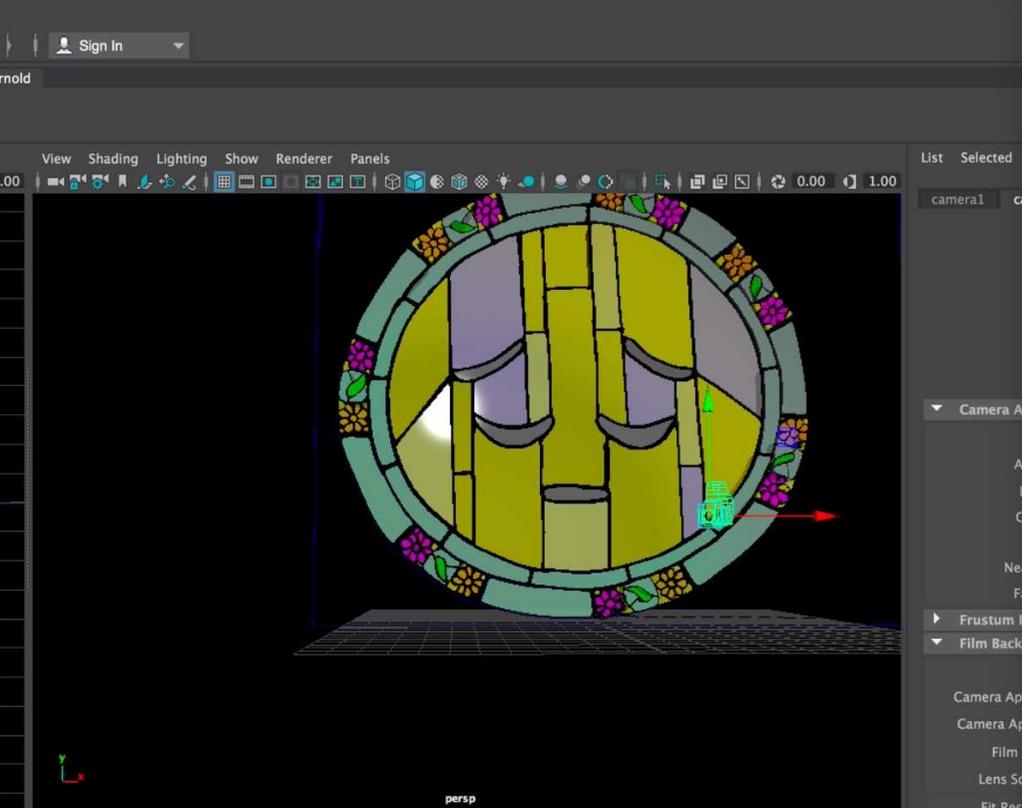
First sketch from protest sign

Final rendered - detail

Cultural Challenges

The imagery used to produce each of the windows in this project references various cultural signifiers related to the #metoo movement from 2017 - ongoing, including: protest signs, emojis, hash tags, and images of individuals gathered from open media channels. One major challenge in this process is the lack of a centralized digital repository. Since protests can be spontaneous, geographically based, and protest signs are often used and then discarded, research for this project thus far has depended on collecting documentation found predominantly through news sources and via social media.

Technological Challenges

Each window for this project contains anywhere from 500 - 9000 individual OBJ files, custom shaders, and up to 21,600 frames. To render the prototype of this project, we paid per minute, outsourcing rendering to an external cloud based service, Zynch render. At 24fps, 720 frames (or 30 seconds of HD video) took nearly two hours to complete and cost $400 at full resolution. Another technological challenge for this project is envisioning the final works within a shared viewing space, or 360° shared VR projection dome.

DATA RESEARCH

For this project we harvested just over 3 million unique English-language Tweets containing the #metoo hashtag that were posted on Twitter between the dates of October 1, 2017 and August 15, 2018. The Tweets were initially harvested using daily exports from Crimson Hexagon (~ 2,400,000 Tweets), existing datasets hosted on data.world (~600,000 Tweets) and a set of IDs donated to the project from an individual researcher (~24,000 Tweets). Due to limitations in the Twitter API and access to historical Tweets as well as download limits enforced by Crimson Hexagon, this set is not a full set of every Tweet with the #metoo hashtag posted during these dates. Rather, it is a sampling of the total volume of Tweets posted during that time frame with that particular hashtag.

Initial processing of the data involved extracting the Tweet IDs from the Crimson Hexagon Data, combining those Tweet IDs with the Tweet IDs from the other two datasets and then hydrating the Tweets using the Twitter API. Due to the formatting of the Crimson Hexagon exports, command line tools were used to identify strings of 17-19 consecutive digits in the data, which matched the pattern of Tweet IDs for the collecting period. These IDs were then combined with the IDs in the other two datasets and command line tools were used to de-duplicate the full list of Tweet Ids. This resulted in a set of roughly 3 million unique Tweet IDs.

We then used a Python library, [Twarc](), to hydrate this set of IDs. The hydration process requires access to the [Twitter API.]() The process involves passing the Tweet ID to the Twitter API and retrieving the full JSON response from the API. This process resulted in us retrieving the full JSON response, which contains the Tweet text and all other data associated with the Tweet, for any Tweets with IDs in our set that were still publicly available at the time of hydration. For more information on the JSON response, please take a look at the data dictionary that we developed for the project.

TWEET HYDRATION

After combining all of the Tweet IDs from the different data sources into a single, deduplicated list of IDs we used the Python library Twarc to hydrate the tweets using the Twitter API. Twarc provides a programmatic way to pass a list of Tweet IDs, use the Twitter API to retrieve the JSON response for each Tweet and save that response in a local JSON file. Access to the Twitter API requires an approved developer account, which is then used by Twarc to hydrate the tweets.

We chose to split the list of IDs into separate files containing 200,000 Tweet IDs per file prior to hydration. This would break up both the number of ID and the resulting JSON files created during the hydration process into more manageable sizes. We used a bash script (/Data Research/tweet-ids/hydrate-tweets.sh) to pass each ID file to Twarc, which then used the Twitter API to fetch the full JSON content of each Tweet and write that response to a line in a JSON file. At the end of the process each ID file would have a corresponding JSON file containing the full JSON response for each Tweet in the ID file. This process can also be completed using the DocNow Hydrator application.

TWEET PROCESSING

In order to make it easier to work with the large amount of data in the hydrated Tweets, we first removed any non-English tweets and then created derivative text files that contained only those data fields that were required for a particular analysis step.

Analyses include:

* Word counts for "respect" "inclusion" "equality" "resist" "silence" and "inclusion"

* amount of tweets per time of day

* recurring hashtags used with #metoo

* emoji sentiment analysis

* study of retweets vs. original content

TWEET DEHYDRATION

The Twitter Developer Agreement states that if you wish to share or redistribute more than 50,000 Tweets you may only do so using Tweet IDs. In order to comply with this restriction, we used Twarc to dehydrate the full dataset of JSON files, extracting only the Tweet ID from each JSON response. This is the final dataset that we have posted for redistribution.

IMMERSIVE SCHOLAR

The 2018 Immersive Scholar Residency, funded by the Andrew W. Mellon Foundation, awarded the primary artist of this project $25,000 for prototyping and data research. Liss LaFleur's residency took place from Aug 15th, 2018, through September 2018.

Immersive Scholar is a $414,000 grant from the Andrew W. Mellon Foundation to develop extensible models and programs for the creation and sharing of digital scholarship in large-scale and immersive visualization environments. This grant has three main components: a series of sub awards for a cohort of institutions to complete projects related to the challenges in creating, disseminating, validating, and preserving digital scholarship for large-scale visual environments; a series of funded creative residencies for the creation of data-driven digital art pieces intended to be openly shared amongst institutions with large-scale visual environments; and a final exhibition/workshop of projects at the 2019 Liberact conference. Find out more at: https://www.immersivescholar.org/
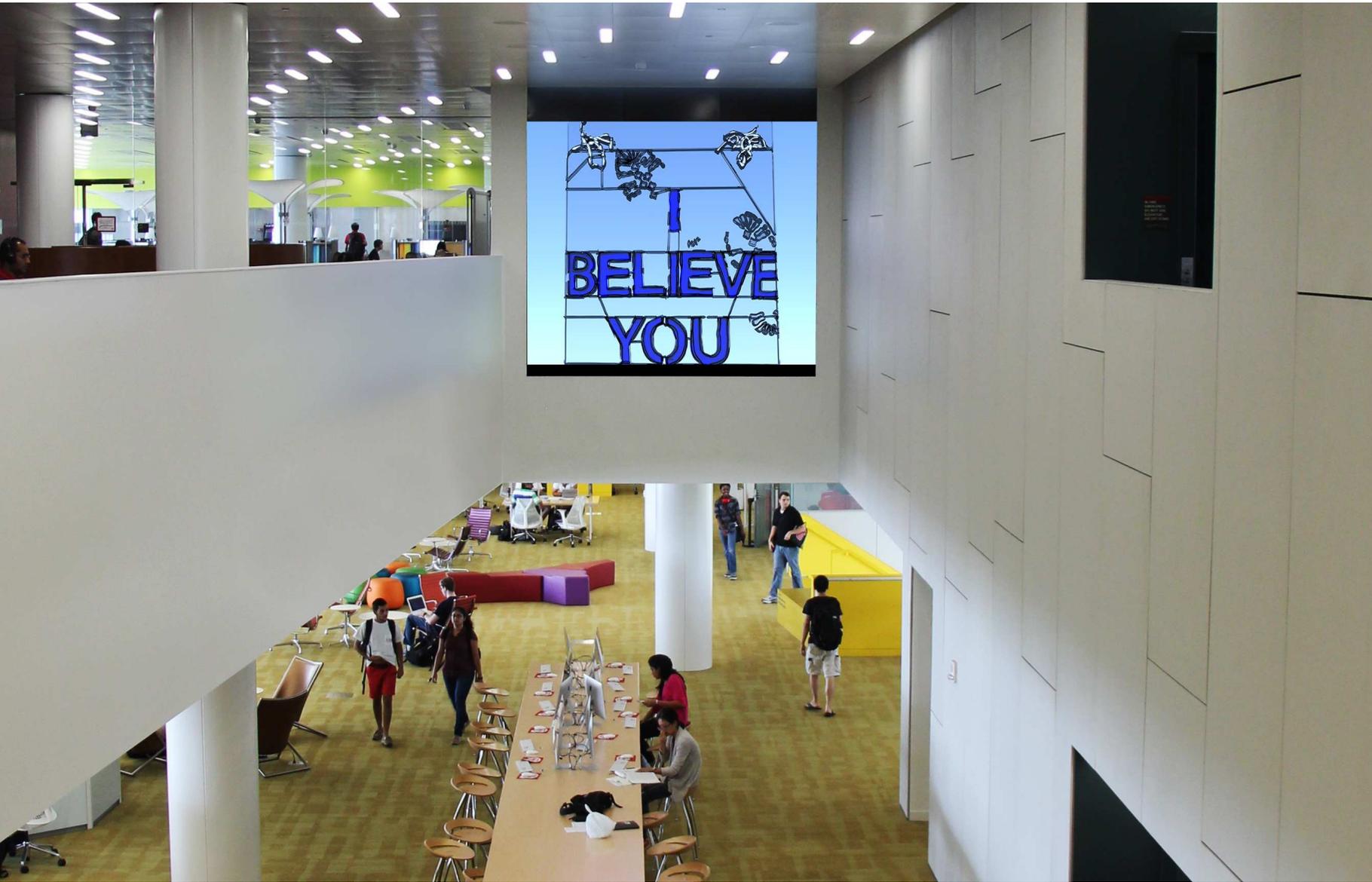
IMMERSIVE Scholar

To generate broader impact and a larger audience, Immersive Scholar research must:

• Be open source

• Follow principles of responsive design

• Follow principles of universal design

• Be documented using principles of literate computing

• Be broadly distributed to other spaces with visualization facilities

• Additionally, the work should produce scholarly output that is citable and impactful

Participating institutions include: North Carolina State University, Brown University, Indiana university, University of California (Berkeley), University of Illinois (Urbana), and Virginia Commonwealth University

Project Lead: Liss LaFleur

Developer: Bri Camp

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Immersive Scholar, Project
Manager (NCSU): Erica Hayes

Immersive Scholar, Co- PI
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Data Specialist: Todd Stoffer

Metadata Technologies Librarian
(NCSU): Jacob Shelby

Data Specialist/ Digital Research:
Markus Wust

Student Assistant:
Eduardo Miranda (UNT)

Student Assistant:
Katelyn Hudson (UNT)

Student Assistant:
Anthony Fuqua (UNT)

Student Assistant:
Jasmine Lang (NCSU)

PRESS

Visualization With a Conscience

https://www.lib.ncsu.edu/news/visualization-with-a-conscience

UNT Professor Liss LaFleur Is Working on #MeToo Art Project, Monica Smart

https://www.dallasobserver.com/arts/liss-lafleur-unt-assistant-professor-of-new-media-art-will-create-a-metoo-art-piece-at-north-carolina-state-university-10837521

#METOO Movement as Digital Art

https://news.unt.edu/unt-art-professor-selected-residency-create-metoo-movement-digital-art

Three-Fold Approach, Micah Vandegrift

https://www.immersivescholar.org/news/three-fold-approach