# MARCHING CUBES

*Interactive performances and installations. Created by assembling modular units derived from a historic graphics algorithm. 3D printed polylactic acid (PLA), neodymium magnets, cold-rolled steel plate.*

In 1987, researchers at General Electric pioneered a method for generating computer graphics from medical scan data that featured an underlying language of faceted cubes. Widely adopted, "Marching Cubes: A High Resolution 3D Surface Construction Algorithm" has become a seminal visual language for virtual environments.

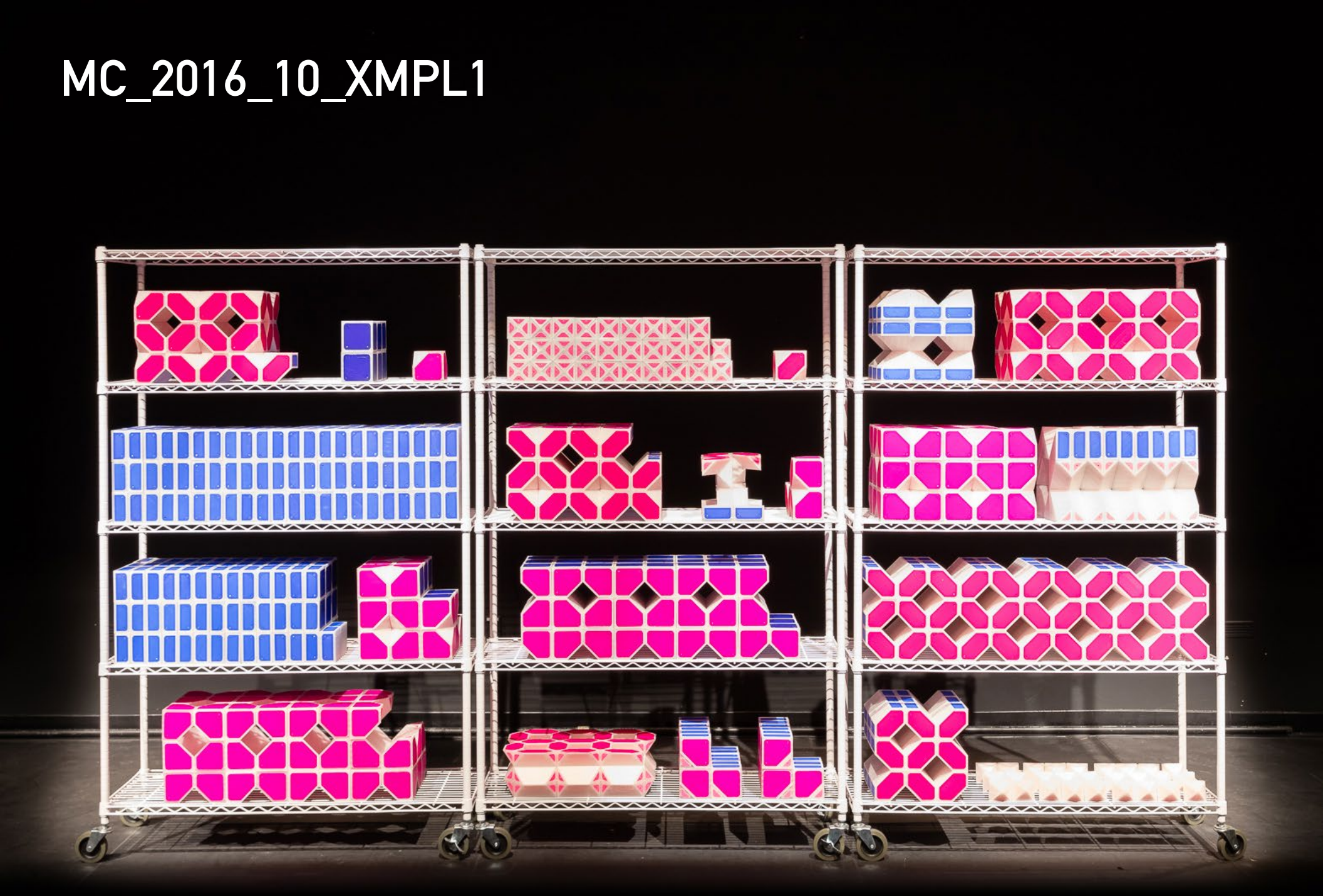
I wanted to make this computational procedure tangible, into something we could build with. I translated the algorithm into 3D printed construction units that allow us to act out its logic. I also created a user's guide: input any object—a 3D scan or model—and a custom computer script outputs assembly instructions. Every *Marching Cubes* interactive performance and installation is unique; the units can make anything.

I build the assemblies in collaboration with my audience. Together, we perform the computer's process. To date, we've created assemblies that explore architectural, anthropomorphic, and ecological themes. Sometimes, we simply play: with humans doing the work, the algorithm's strict logic is optional. By enacting a ubiquitous algorithm in the real world, this project generates dialogue about how information technologies create the building blocks of contemporary culture.

The pages that follow document the expressive possibilities of *Marching Cubes*.

*jessecolinjackson.com/portfolio/marching-cubes*

# MC_2016_10_XMPL1



*Marching Cubes*
Experimental Media Performance Lab, Irvine, USA. October 20 – 22, 2016. Interactive performance.

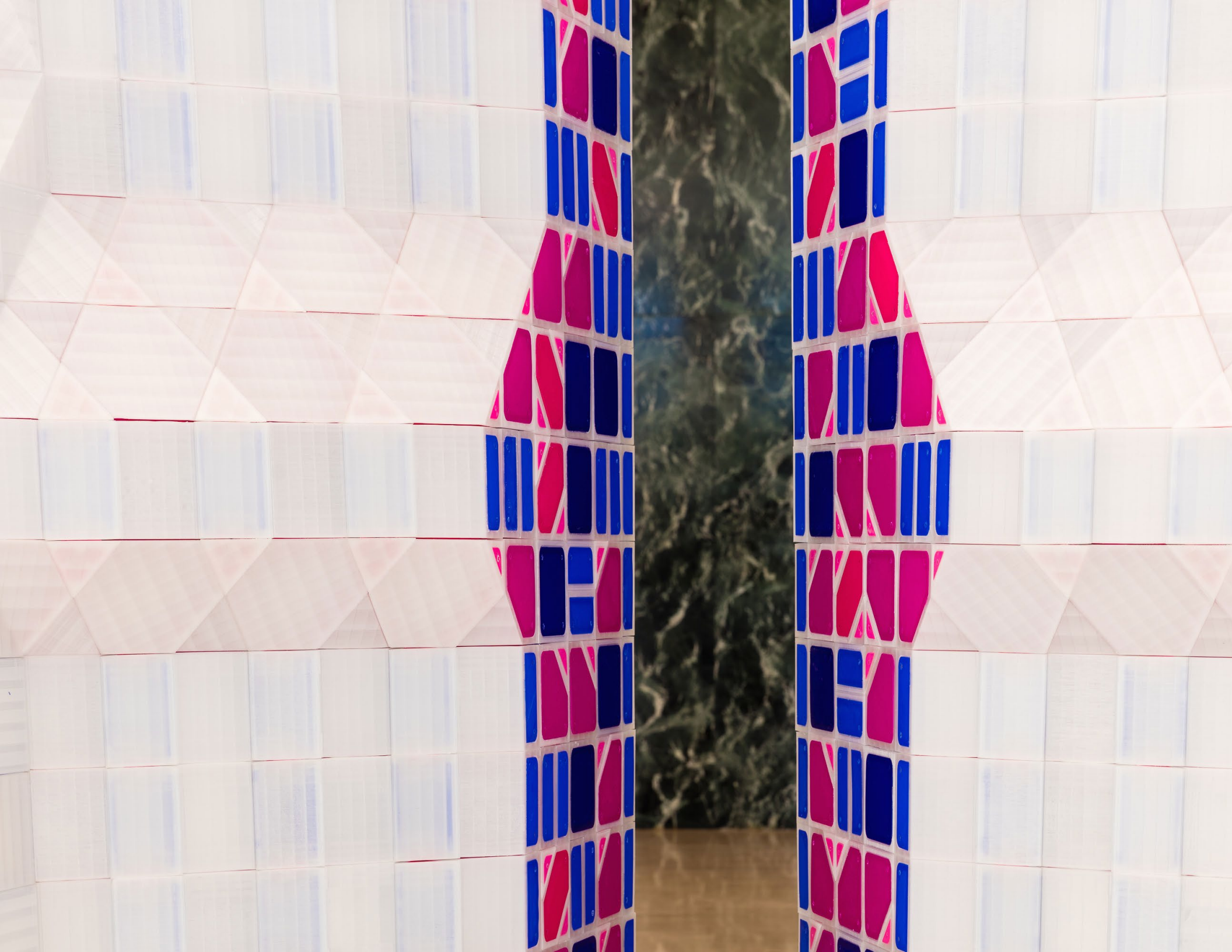
# MC_2016_11_PNG

*Marching Cubes*
Pari Nadimi Gallery, Toronto, Canada. November 17, 2016 – January 14, 2017. Installation.


VIZIO
VIZIO

# MC_2017_01_NYC


*Marching Cubes Assembly #18 (After Bunshaft)*
Arts Brookfield Grace Building, New York City, USA. January 17 – March 10, 2017. Installation.




EXIT

# MC_2017_04_VAN

*Marching Cubes: Boris*
Patkau Project Space, Vancouver, Canada. April 8 — 10, 2017. Interactive performance.

# MC_2017_05_IR

*Marching Cubes Assembly #28 (Gravity-Inflected Spherical Void)*
Platform 28 for Art & Architecture, Tehran, Iran. May 19 – June 9, 2017. Installation.


*Marching Cubes: Son of Boris*
Kulturhuset Stadsteatern, Stockholm, Sweden. March 20, 2018. Interactive performance.

# MC_2018_04_SJC

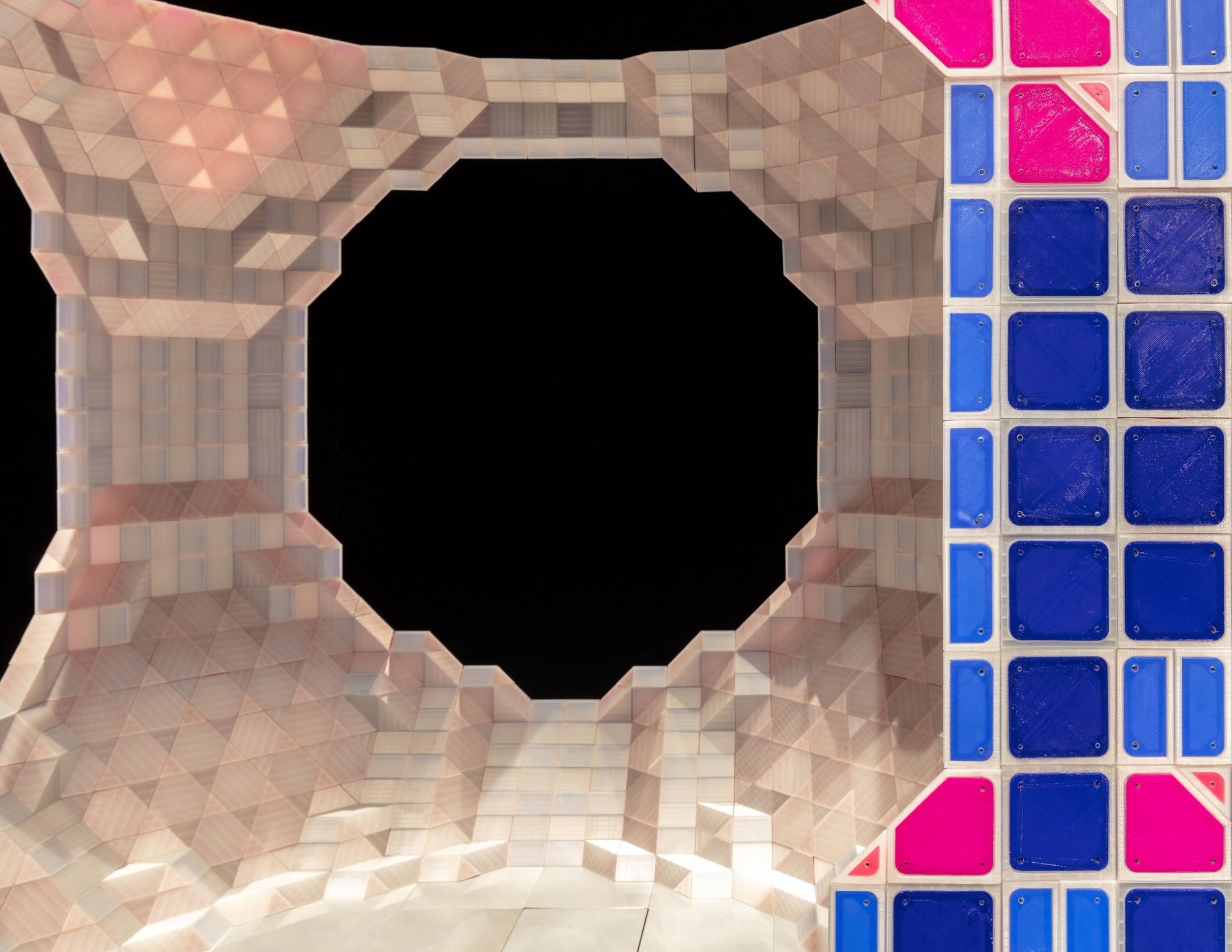
*Marching Cubes: Daughter of Boris*
Alisa and William Reising Gallery, San Juan Capistrano, USA. March 26-29, 2018. Interactive performance.

# MC_2018_11_OCAD

*Marching Cubes: 1987*
Open Gallery, OCAD University, Toronto, Canada. November 15 – 18, 2018. Installation.

# MC_2019_01_XMPL2

*Marching Cubes 1728*
Experimental Media Performance Lab, Irvine, USA. January 7 – 9, 2019. Interactive performance.




*Marching Cubes Watershed #1: Laguna Beach, After Haliburton, 1936 (If I Had a Million Dollars, I Wouldn't Change One Inch of It)*
Laguna Art Museum, Laguna Beach, California, USA. January 19 – 26, 2020. Installation.