# Intro to Maker Literacy

Sarah Nagle
Creation and Innovation Services Librarian
pricesb@miamioh.edu

# Memorable Making Experience

Think about a memorable making experience you had in the past...

# Maker Movement

## Timeline

- 2001 - MIT FabLab created
- 2005 - Dale Dougherty launches Make Magazine and the next year holds the first Maker Faire
- 2005 - RepRap 3D printers - first low-cost, self-replicating 3D printer
- 2006 - Techshop opens in CA
- 2011 - Fayetteville Free Library (NY) opens makerspace
- 2013 - present - More universities start opening makerspaces
- 2014 - National Week of Making, White House Maker Faire

# Makerspaces

## What is a makerspace?

A place where people gather together to make things and collaboratively learn about making things together.

# What's the Big Deal?

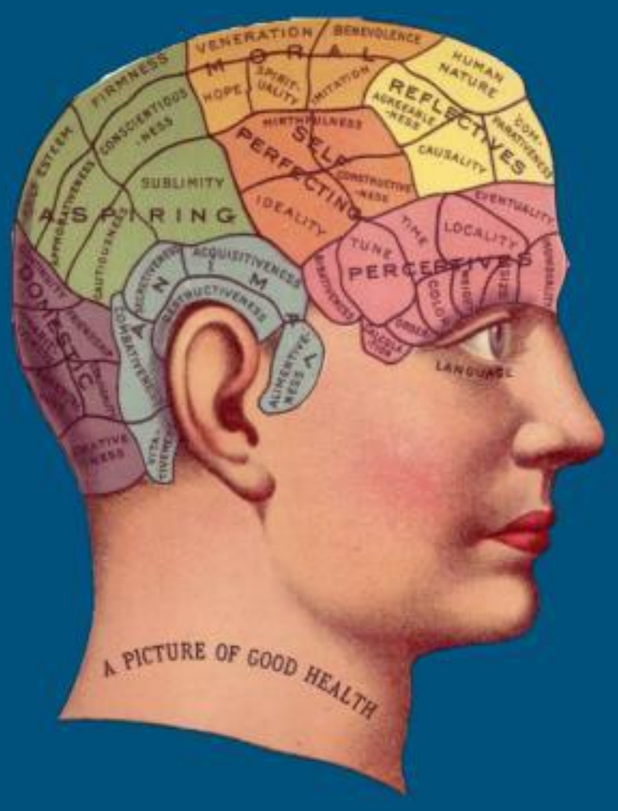
People have always been makers...so what's so different about the maker movement?

# Rise of makerspaces in education

NMC Horizon Report: 2018 Higher Education Edition:

“The embedding of maker culture in higher education has made students active contributors to the knowledge ecosystem. They learn by experiencing, doing, and creating, demonstrating newly acquired skills in more concrete and creative ways.” (Becker et al, 2018)

# Maker Mindset




## What is a maker mindset?

- Consumer → Creator
- Design sensitivity
- Failure-positive outlook
- Empowered to change the world!

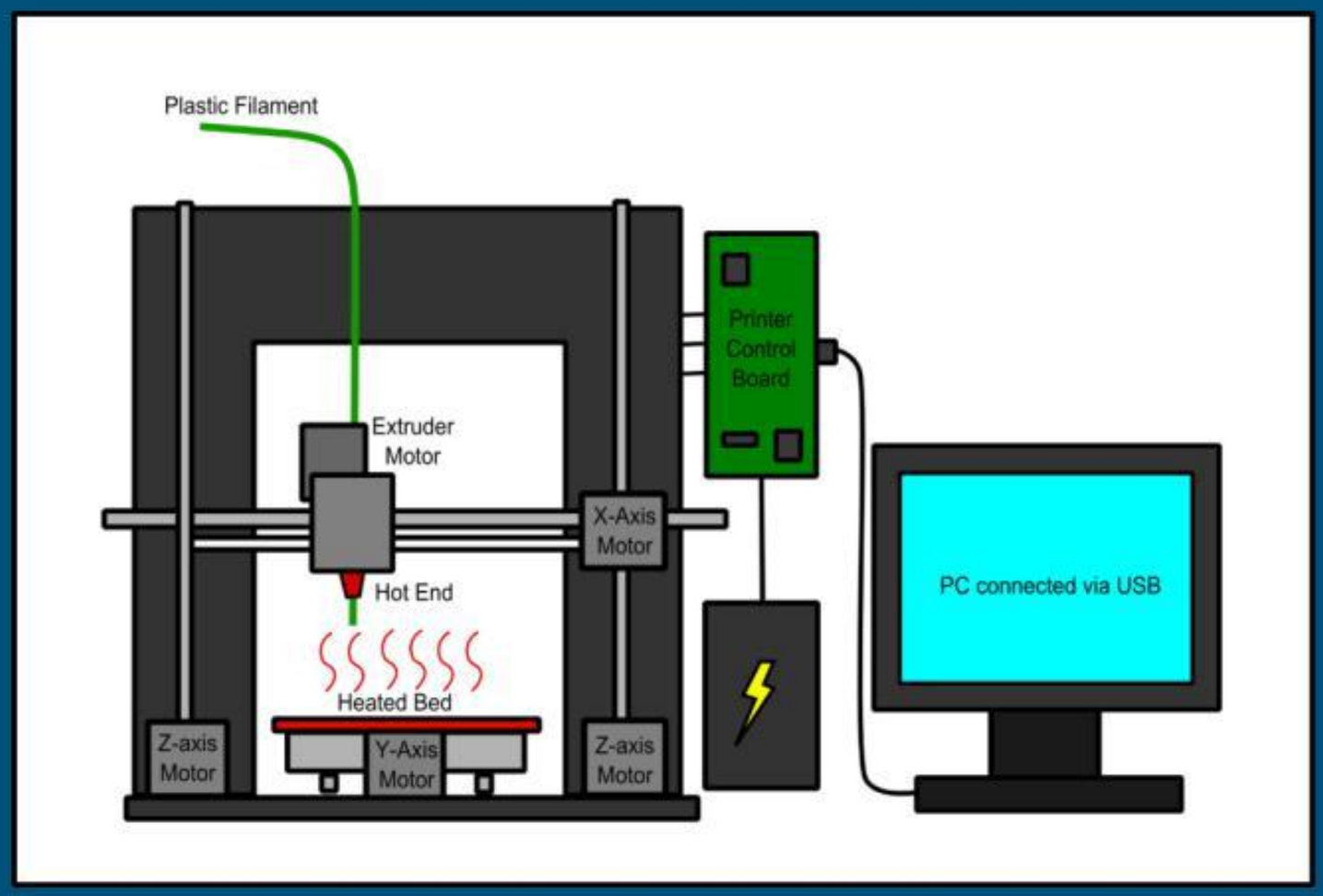
# 3D Printing: What is it?

## Simple definition:

The creation of a physical object based on a 3D computer model, layer by layer, in an additive process.

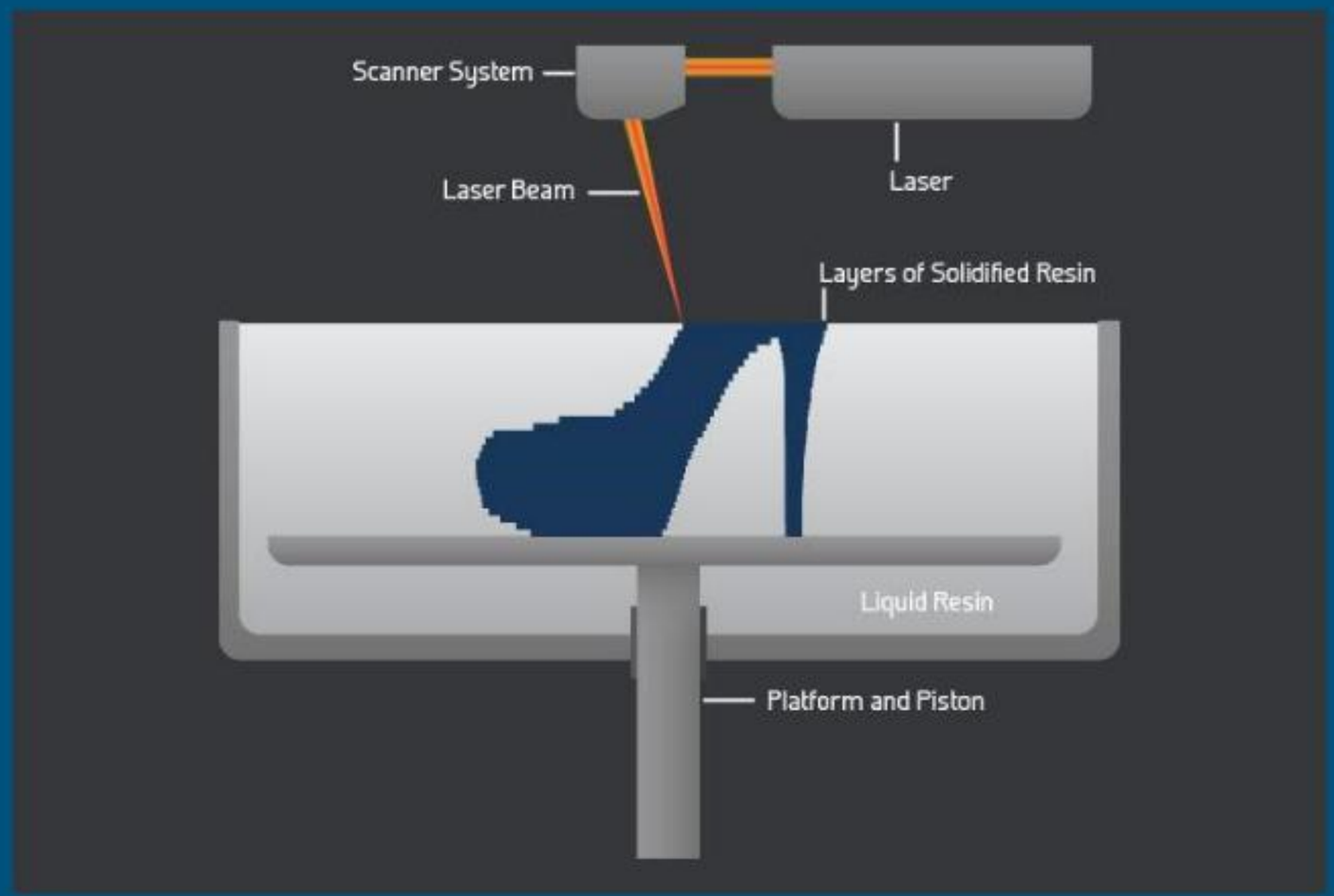
# Types of 3D Printing: Fused Deposition Modeling

## Fused Deposition Modeling (FDM)



# Types of 3D Printing: Stereolithography

## Stereolithography (SLA)



# Types of 3D Printing: Selective Deposition Lamination

## Selective Deposition Lamination (SDL) or Paper Printing

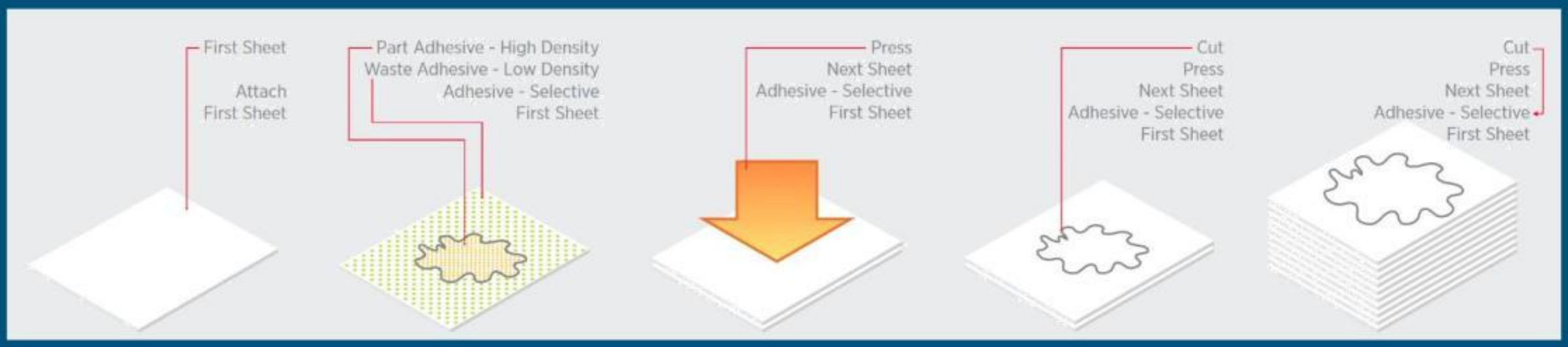



Image Source: Mcor Technologies. *How Paper-Based 3D Printing Works. https://rapid3dparts.co.za/how-paper-based-3d-printing-works.pdf*

# Types of 3D Printing: Material Jetting

## Material Jetting

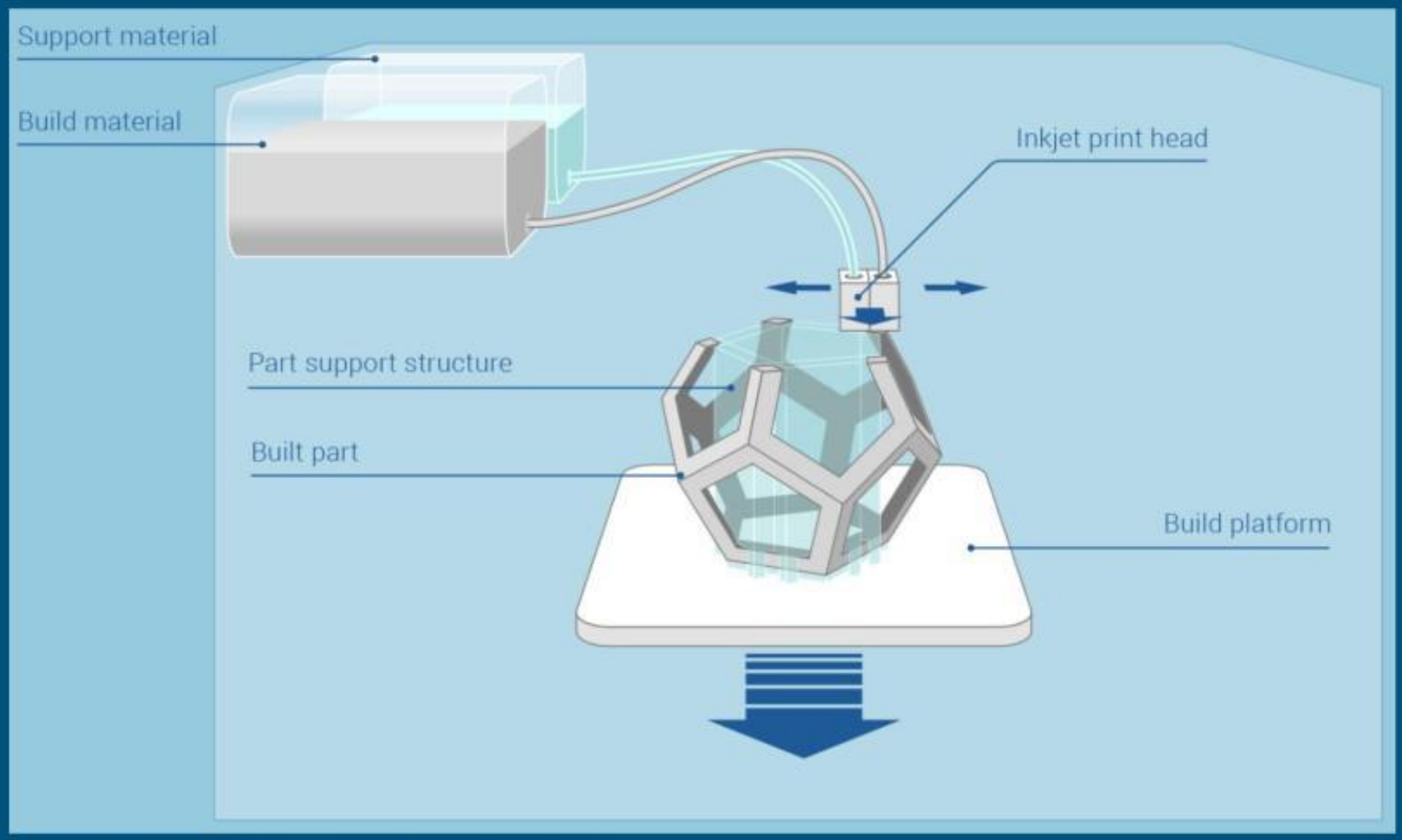



Image source: https://www.additively.com/en/learn-about/material-jetting

# 3D Printing: Uses and Benefits

- Rapid prototyping
- Easy customization
- Complex/intricate items
- Accessibility

# C+I Makerspace

A hands-on, highly collaborative, and experiential learning space located on the third floor of King Library.

## Equipment:

- Lulzbot Mini 2 3D Printers
- Carvey CNC Machines
- Brother Sewing/Embroidery Machines
- Heat Press
- Silhouette Cameo 3 Electronic Cutting Machine
- Sawgrass Sublimation Printer




# Data Visualization/Virtual Reality Lab

A high-tech space devoted to immersive virtual reality experiences and large-scale data visualizations.


Equipment:

- HTC Vive VR System
- Vivitek NovoTouch 86” Touchscreen Display
- 2 90” HD Displays

# Audio/Video Lab

An all-in-one recording lab for your audio and video recording needs.

Equipment:

- 2 Canon Vixia HF G40 Camcorders
- Prompter People teleprompter
- Snowball Microphone
- 360 degree cameras
- Various backdrops, including green screen/chroma key
- Professional lighting

# General Info About C+I Makerspace

- It is FREE! *while supplies last
- No previous maker experience required
    - Carvey machine - must do training w/ staff but we guide you through it
- Self-directed work encouraged, but staff assistance is always available.
- Academic projects are #1 goal, but personal projects are welcome too

# How can you use the spaces?

## Drop in during Open Hours:

***You'll need to sign our waiver.**

Mondays: 9am - 1pm

Tuesdays: 9am - 5pm

Wednesdays: 1 - 5pm

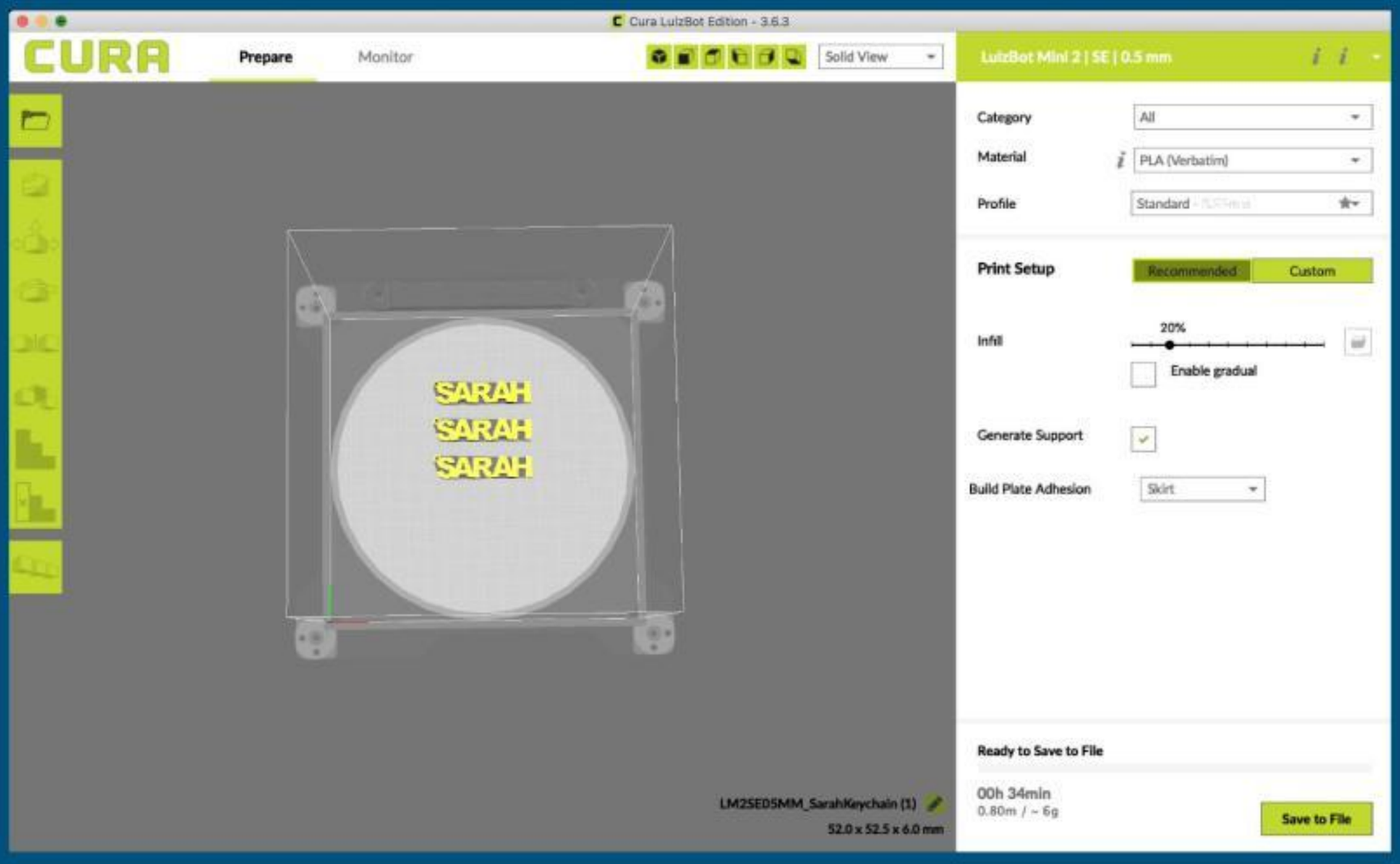
Thursdays: 1 - 5pm

Fridays: 9am - 5pm

***Need some guidance?***

Email create@miamioh.edu

# Cura for Lulzbot Slicing Software



Upload Your Files to:

bit.ly/IMS3D