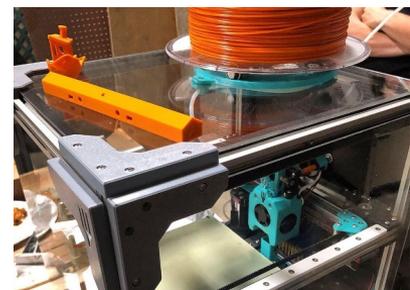
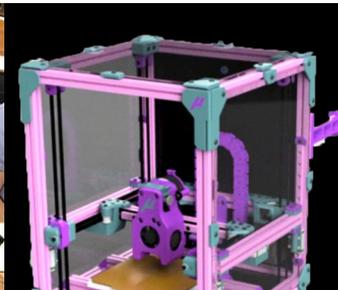
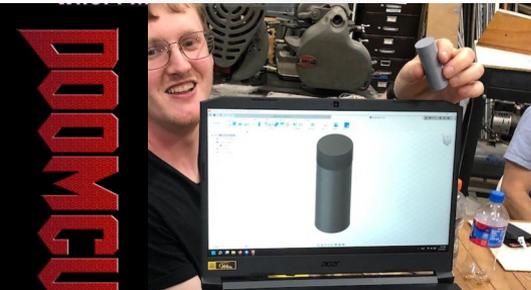
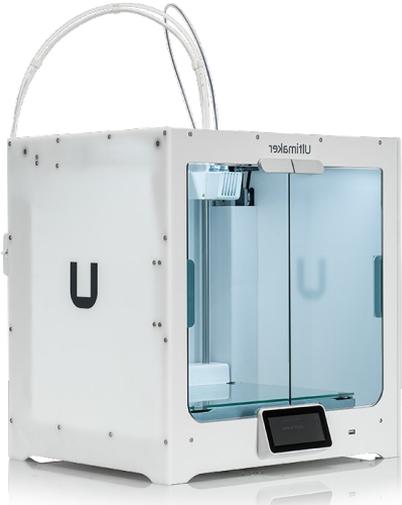


# Intro to the DLA Makerspace:

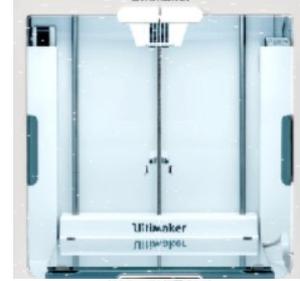
*The tl;dr of our rapid fabrication facilities*



## Over the next 20 minutes, this presentation will:

- Introduce you to the DLA Makerspace's tools & resources
- Deliver an overview covering how to interact with our digital equipment, irrespective of design software
- Describe what to expect from interactions with our equipment
- Enumerate the general materials and processes available at no cost and how to learn more about makerspace materials and advanced utility of our equipment
- Highlight numerous rapid fabrication resources you are encouraged to explore, including upcoming workshops and the staffing schedule at the DLA Makerspace, pertinent classes at the Ithaca Generator and an overview of some of the cutting edge digital communities and open source projects DLA students and staff are involved with.

# Overview of fabrication tools:



- We are a small fabrication laboratory located on the fourth floor of Kennedy Hall, nestled within Cornell's Landscape Architecture Department.
- **Freddie & Vaux:** Our 50 watt Epilog Edge lasercutter twins.
- **Ada & Greta:** Our Ultimaker S3 twins and **Fender** our Ultimaker S5 3d printers, in addition to 3d printing resources at the Ithaca Generator.
- **ShopBot:** We have a ShopBot Buddy 32 CNC router.
- **Tools & Materials:** We maintain a basic selection of materials, filaments, chemicals and related consumables, as well as a selection of hand tools including repair kits, digital calipers, a digital micrometer and feeler gauges.

## In a hurry? No problem!

*Email Jess ([js3227@cornell.edu](mailto:js3227@cornell.edu)) with the following information:*

- Your preferred name
- What materials you'd like to have processed
  - If you are not providing your own material, please describe what you need, we'll make it happen!
  - On-site filaments (PLA, ASA, PETG, PVA) are free for students (\*within reason!) on a first come, first serve basis.
- Please compress your files into a tarball and/or gnu gzip archive.
  - 3d prints must be in **.obj**, **.stl**, or **.step** format; relying on ASCII **.stl** is discouraged. Lasercut submissions must be in **.pdf**, **.dwg**, **.dxf**, or **.svg** format; Inkscape SVG or PDF 1.5 are preferred formats.
  - All additional project, documentation and CAD files are welcome and appreciated.

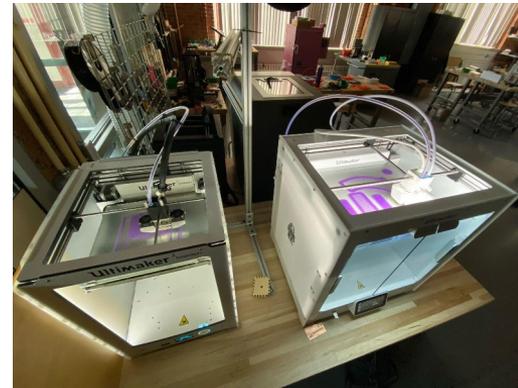
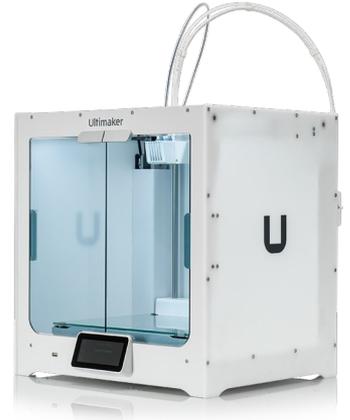
# **Ada, Greta, Fender and 3d printing at the DLA Makerspace**

Our 3d printers may be operated anytime  
by anyone with Jess's permission.

# Ada, Greta, Fender and 3d printing at the DLA Makerspace

## During staffed makerspace hours, you may:

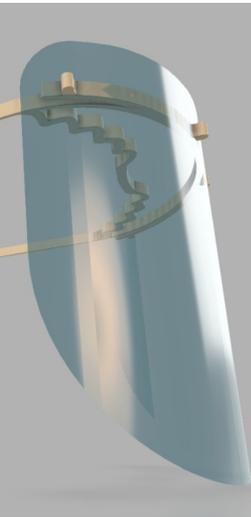
- Drop into the makerspace to start and pick up prints
- Seek one-on-one assistance and tutorship on all aspects of 3d printing
- Jess is *always* available for anything from general modeling and slicing assistance to designing, building and collaborating on bespoke 3d printer hardware and software.



# Ada, Greta, Fender and 3d printing at the DLA Makerspace

## Regular 3d printing classes, open hours and resources available to DLA Students:

- Weekly workshops covering advanced solid modeling in Fusion 360 for 3d printing. These are held on Mondays at the Ithaca Generator.
- Weekly workshops designing, building, programming and publishing experimental 3d printers as open source hardware and software. These are held on Tuesdays at the Ithaca Generator.



**WORKSHOP** TWO SESSIONS  
MONDAY NIGHTS - 6PM - 8PM

A 3D printer printing a purple and green mechanical part.

**BEGINNING  
APRIL 18TH**

**MAGIC FUSION 360**



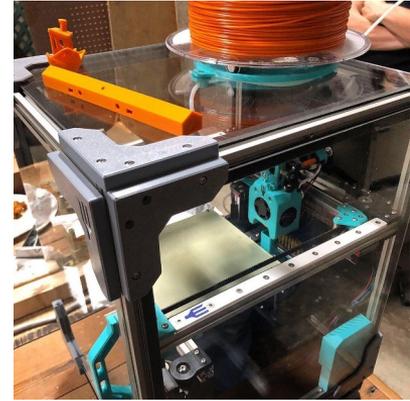
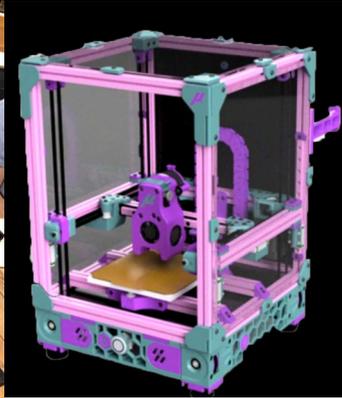
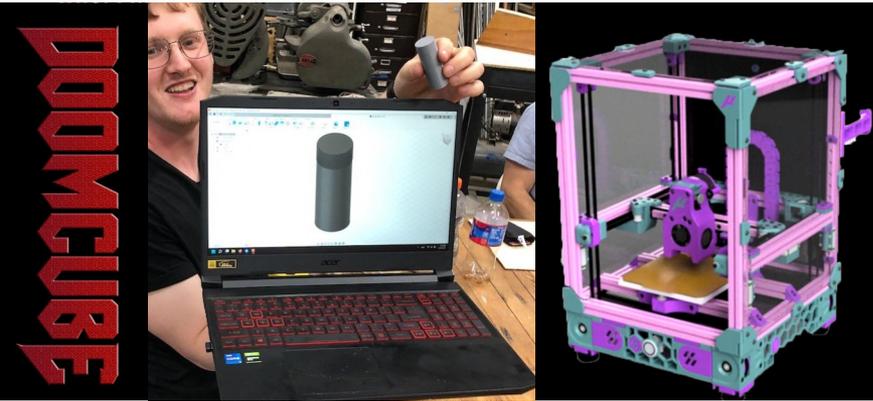
**3D PRINTER PARTY!**

A large pile of 3D printed parts in blue and pink colors.

**W/ JESS & WHOPPINGPOCHARD!** **TUESDAYS 5 - 8PM**



# Ada, Greta, Fender and 3d printing at the DLA Makerspace



## About Jess and 3d printing...

- Jess is deeply involved with numerous bleeding edge 3d printer projects including the RailCore, Voron, Doomcube, V1Engineering, Positron, Marlin and Mainsail communities, and is the 3d Printing Captain at the Ithaca Generator.
- She loves teaching and sharing her enthusiasm for open source 3d printing hardware and software, and has taught adjacent courses in advanced GIS programming, workshops in 3d modeling from public LIDAR and DEM and introductory electromechanics for rapid fabrication while working at the D&M Makerspace in the UNH system.

# ShopBot Buddy 32: Our CAM & CNC Router Equipment



The ShopBot may only be in operation while the space is staffed, and may only be operated by Jess (or by individuals with her express written consent)

# ShopBot Buddy 32: CAM & CNC Routing at the DLA Makerspace

## During staffed makerspace hours, you may:

- Work with Jess to prepare ShopBot jobs;
  - Jess is *always* happy to guide anyone through the process of generating of efficient toolpaths, assist in the design process for CNC routing and help with material and endmill selection.
- Schedule time with Jess to simulate and execute milling operations.



# **Freddie & Vaux: Our 50 watt Co2 Epilog Edge Twins**

Our lasercutters may only be in operation while the space is staffed, and may be operated by anyone trained by a staff member.

# Freddie & Vaux: 50 watt Co2 Epilog Edge Lasercutter Twins

Folks are strongly encouraged to spend time in the space with Jess to gain mastery over:



- Designing for interoperability with lasercutters
- Job preprocessing; optimizing jobs for thermal density, layout and job efficiency
- Understanding the Co2 laser hardware and maintenance; laser tubes, focal lengths, mirrors, exhaust and chillers
- Gain autonomy with the lasercutting hardware found at the DLA Makerspace & Ithaca Generator

## Freddie & Vaux: 50 watt Co2 Epilog Edge Lasercutter Twins

- Vector **cuts** are represented as a stroke width must be set to .001"; one imperial thou. Engraving **rasters** are best represented in 8 bit grayscale.
- Epilog lasers are most reliable working from PDF (ISO 32000) documents, regardless of your design software of choice; please export your work as a PDF print, at a page size 24"x24".

# **Github, DLAMaker.space, Discord & Remote-first Resources**

The internet is our most powerful tool!

## DLAMaker.space: Pertinent resources as a Web & Mobile application

Visit <https://dlamaker.space/> for access to:

-  Jess when she is not on site 
- The space's staffing calendar
- General DLA makerspace information & usage agreement
- Technical documentation
- Discord ticketing system, printer monitoring streams & discussion forum

**Github:** How we share and collaborate on hardware and software

Visit [github.com/DLA-Makerspace](https://github.com/DLA-Makerspace) to explore:

- [spaceware](#): hardware created by and for the DLA Makerspace
- [DLA-Flask](#): source repository for [dlamaker.space](#)
  - [Documentation source, Cura schemas & lasercutter profiles](#)

**Discord:** Support forum, ticketing, print monitoring & chitchat

- Digital communication platforms are fairly ephemeral, while communities & individuals are much less so 👍
  - Join the DLA Makerspace Discord Server!
  - Join the IG Discord!
  - Join the Voron Discord!
  - Join the Doomcube Discord!

# DLA Makerspace Questions?

Homepage: [DLAMaker.space](https://DLAMaker.space)

Plaintext documentation: [DLAMaker.space/docs/](https://DLAMaker.space/docs/)

Discord: [Support & Print Monitoring Server](#)

Email Jess: [js3227@cornell.edu](mailto:js3227@cornell.edu)