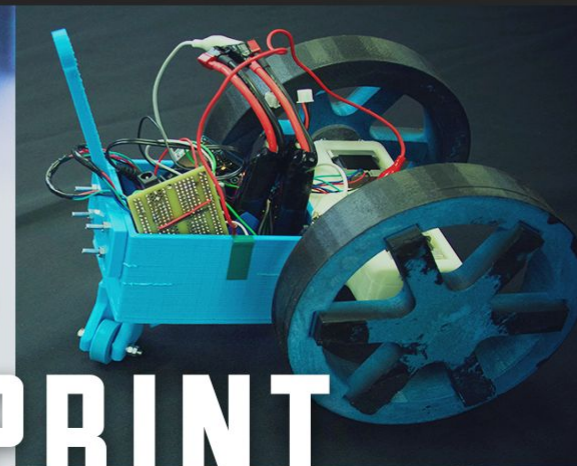
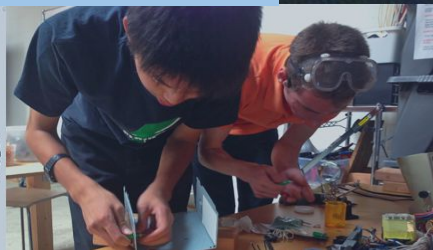
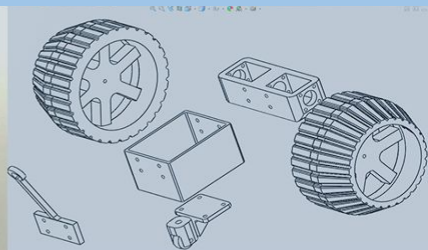
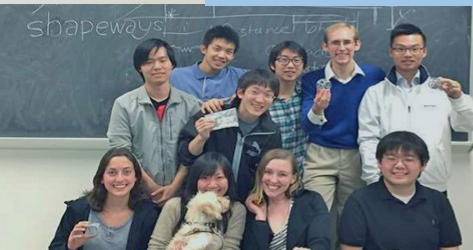




UCLA3D4E

DESIGN. TINKER. PRINT.

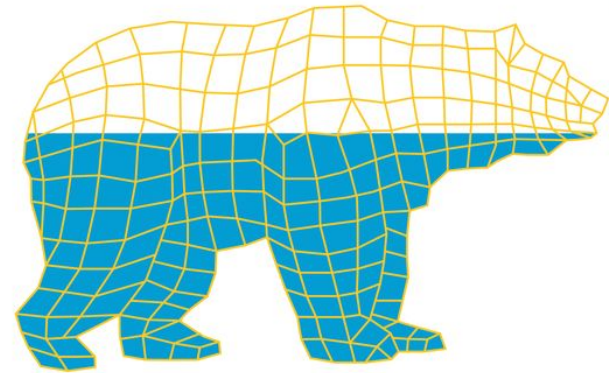
Workshop Series - Week 4 - Introduction to Printing



WHO WE ARE



- 3D4E
 - 3D Printing For Everyone
- Intercollegiate network of 3D Printer clubs at UCLA, USC, SDSU, LMU, Harvey Mudd, University of Arizona, and Arizona State.
- Our goal is to provide hands-on design and manufacturing experience to students.



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3D FOR EVERYONE

Workshop Flow



Overall flow of this week,

1. Continue Fusion360 Workshop
2. Exporting STL
3. Big 5 Settings
4. File to Printer
5. Printing!
6. Different Printing Methods
7. Certification of Printing

Continuing off of Last Week's Workshop...



Recap of Last Week's
workshop

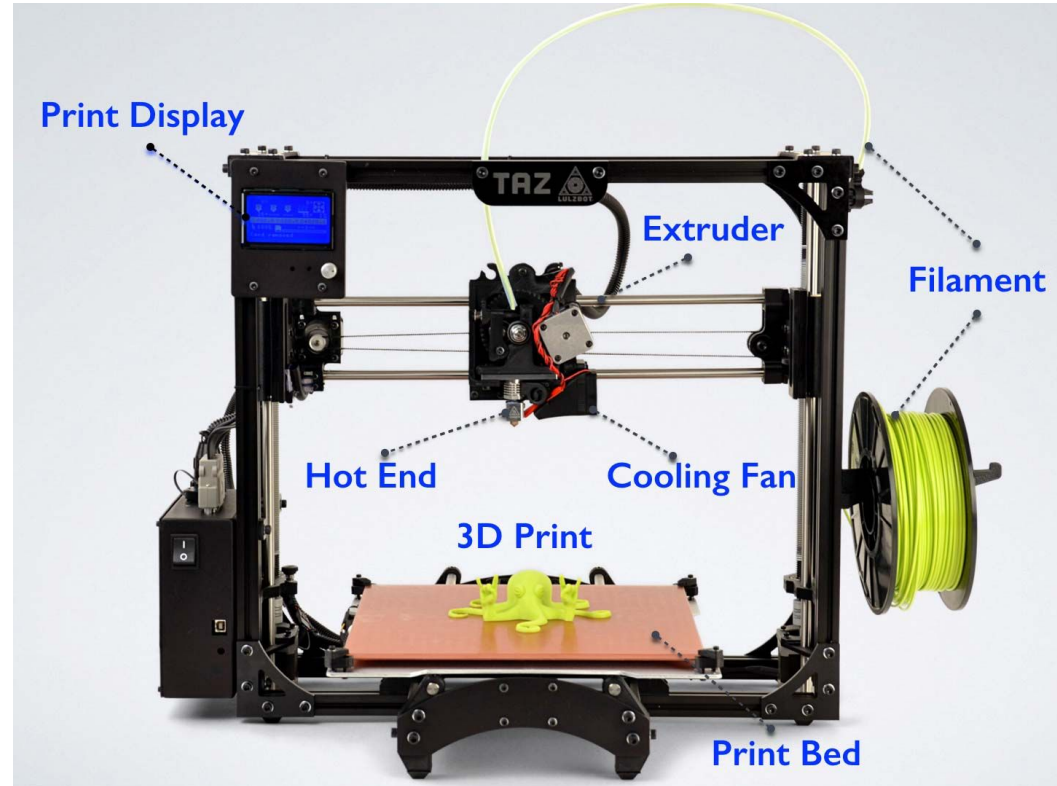
Export to stl

Import into 3D printer

Continuing off of Last Week's Workshop...

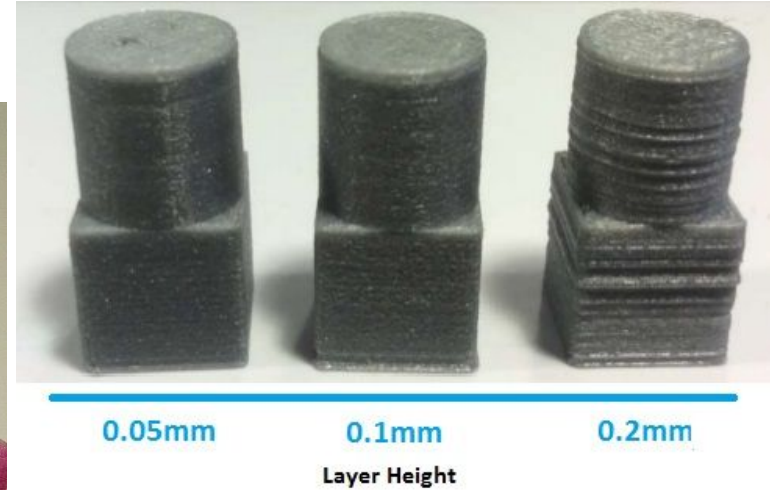
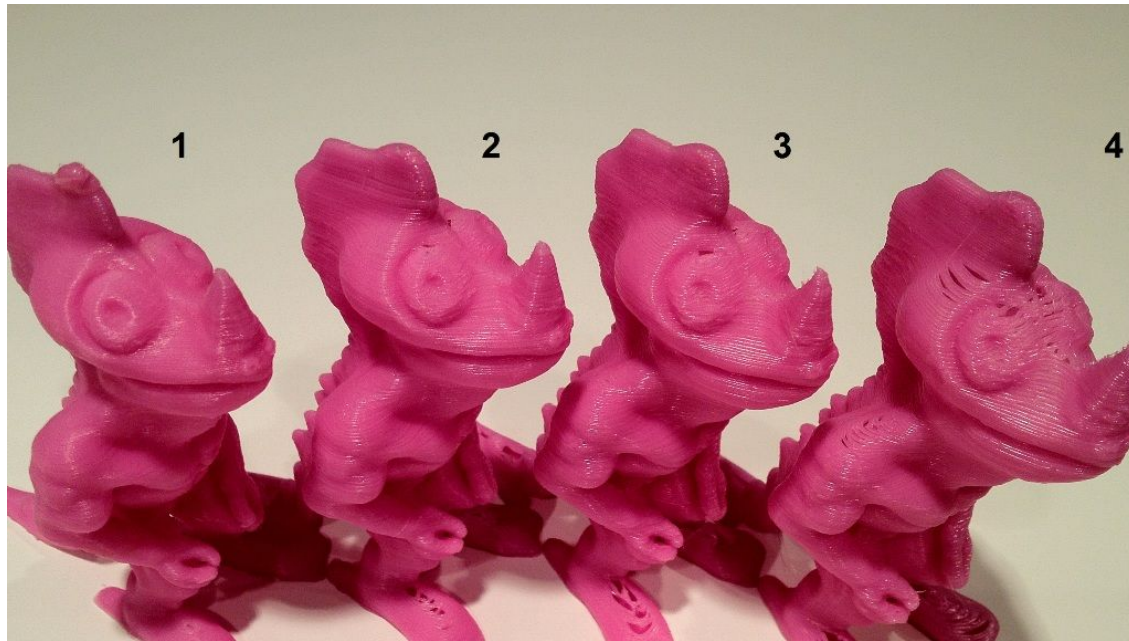


Printer Components



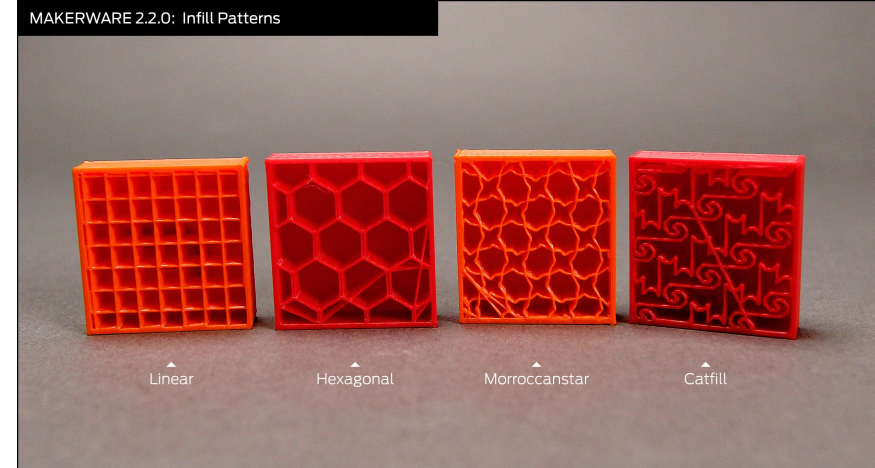
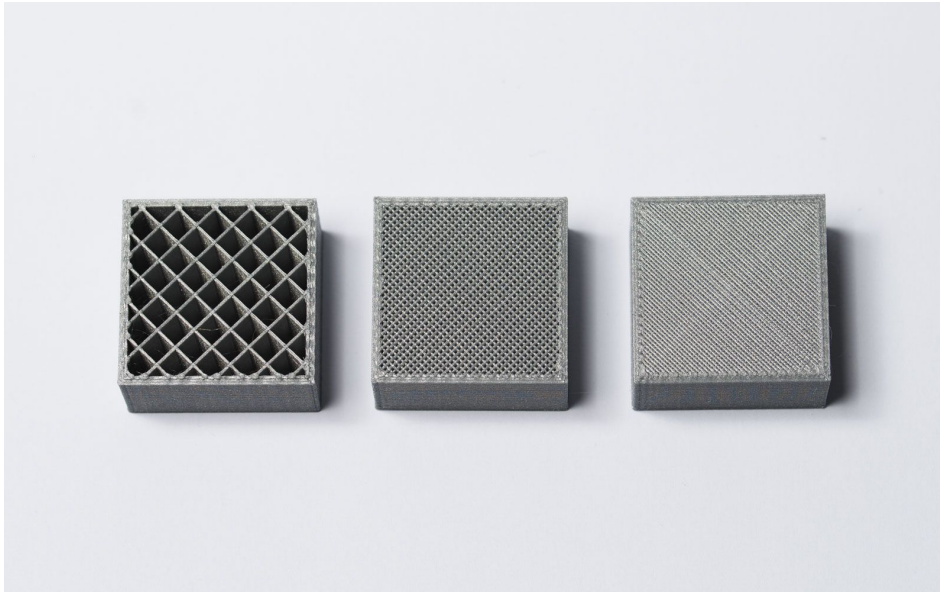
Big 5 Settings, a Case Study

1. Layer Height



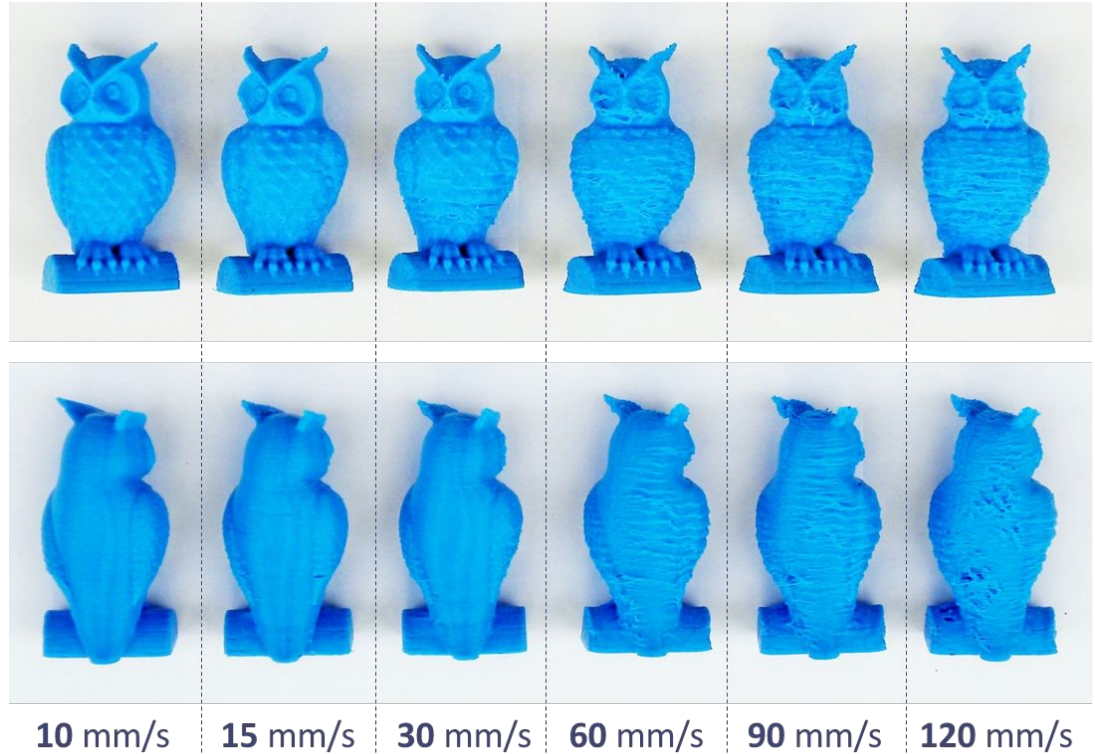
Big 5 Settings, a Case Study

1. Layer Height
2. Fill Density



Big 5 Settings, a Case Study

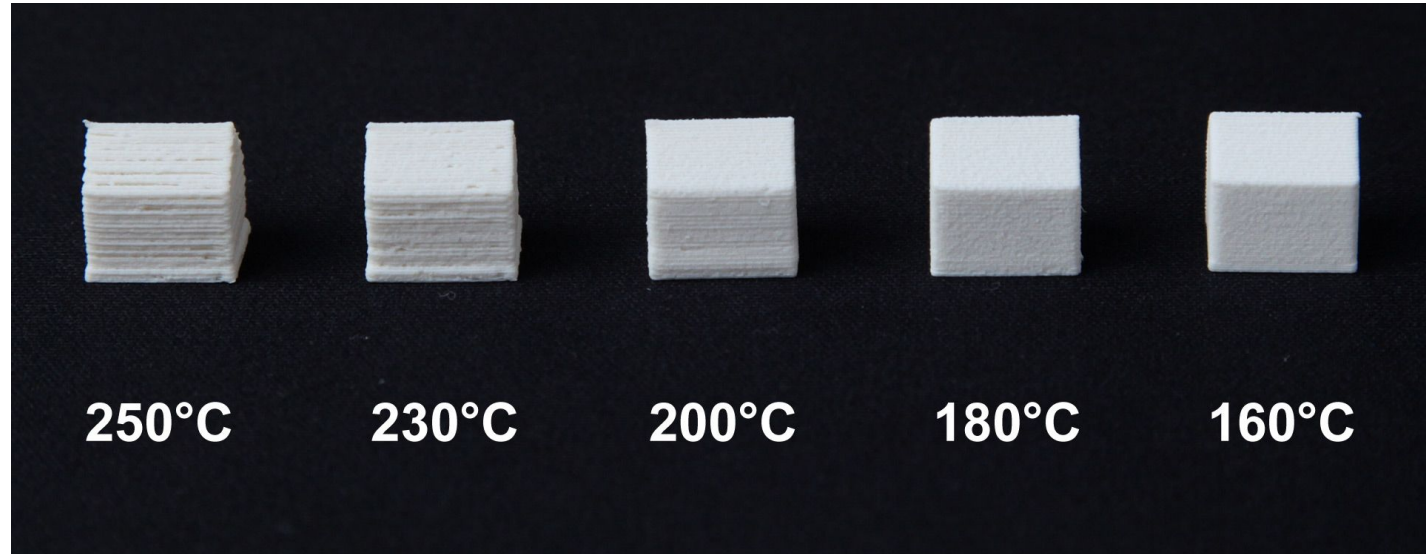
1. Layer Height
2. Fill Density
3. Print Speed



Big 5 Settings, a Case Study



1. Layer Height
2. Fill Density
3. Print Speed
4. Print Temperature



Big 5 Settings, a Case Study

1. Layer Height
2. Fill Density
3. Print Speed
4. Print Temperature
5. Supports



Safety



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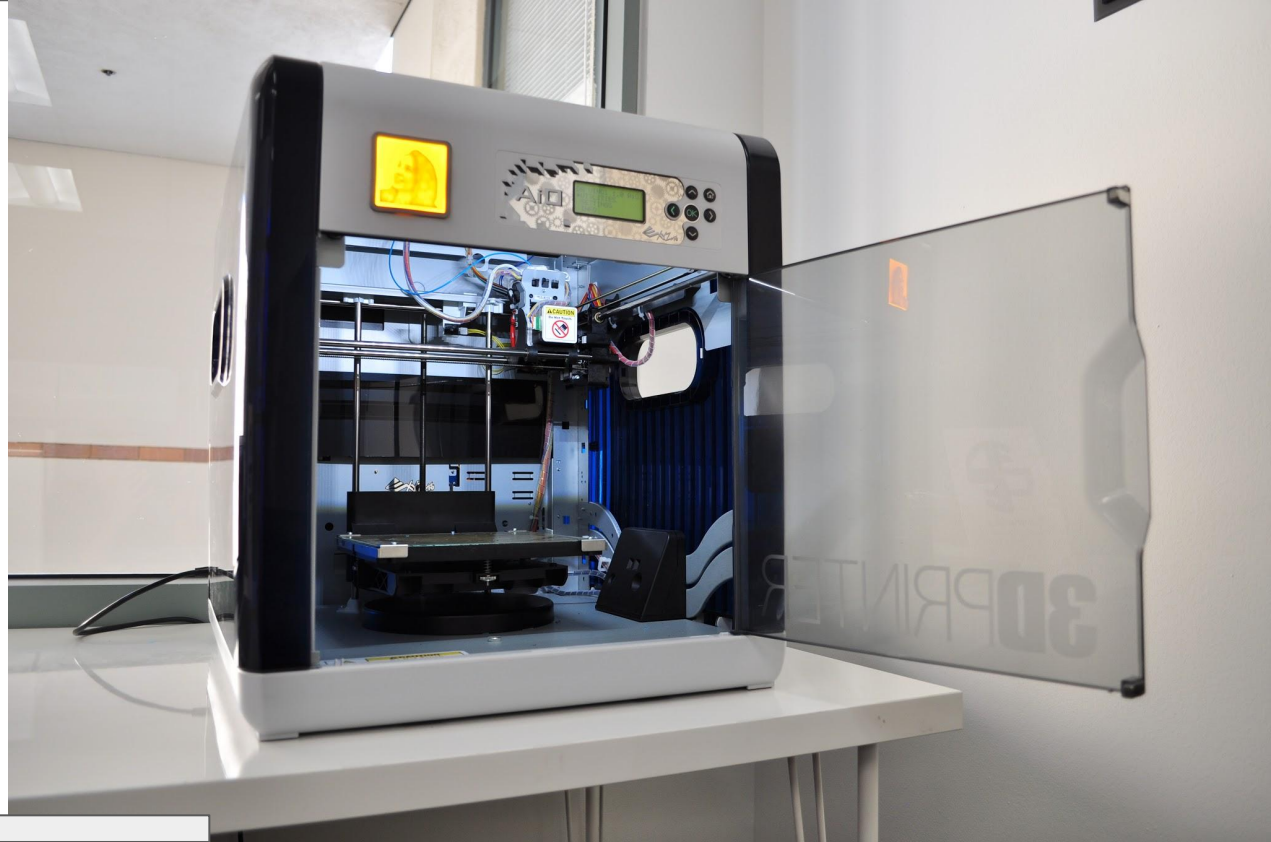
TRADITIONAL MILLING METHODS AND CNC

3D PRINTING: AN OVERVIEW



3D Printing refers to a various processes that uses principles of additive manufacturing to create a 3D object.

For example, Fused Deposition Modeling (FDM), Selective Laser Sintering (SLS), and Electronic Beam Melting (EBM) are all 3D printing processes currently used in industries today.

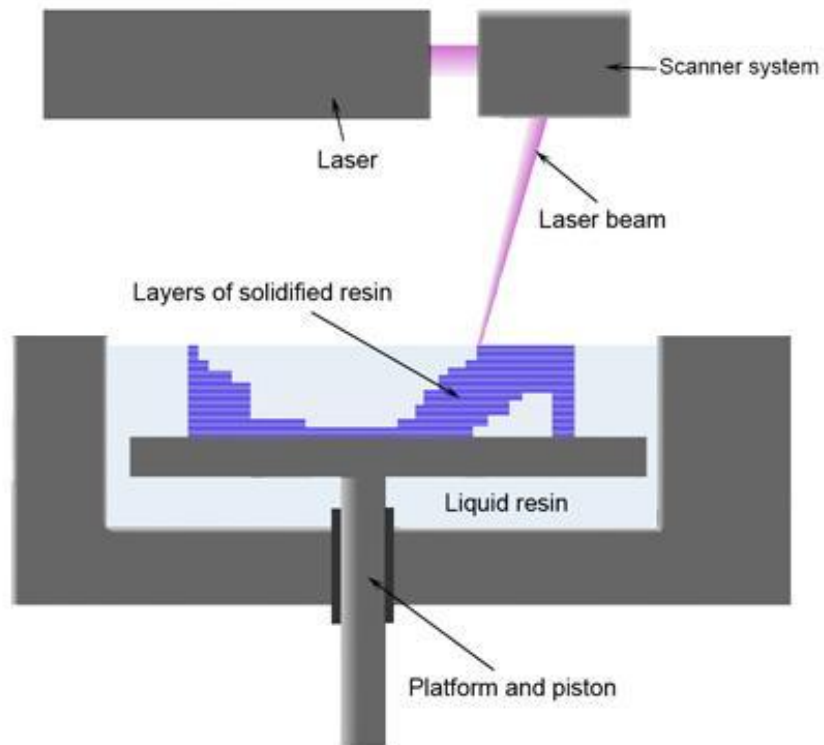


3D Printing Workflow

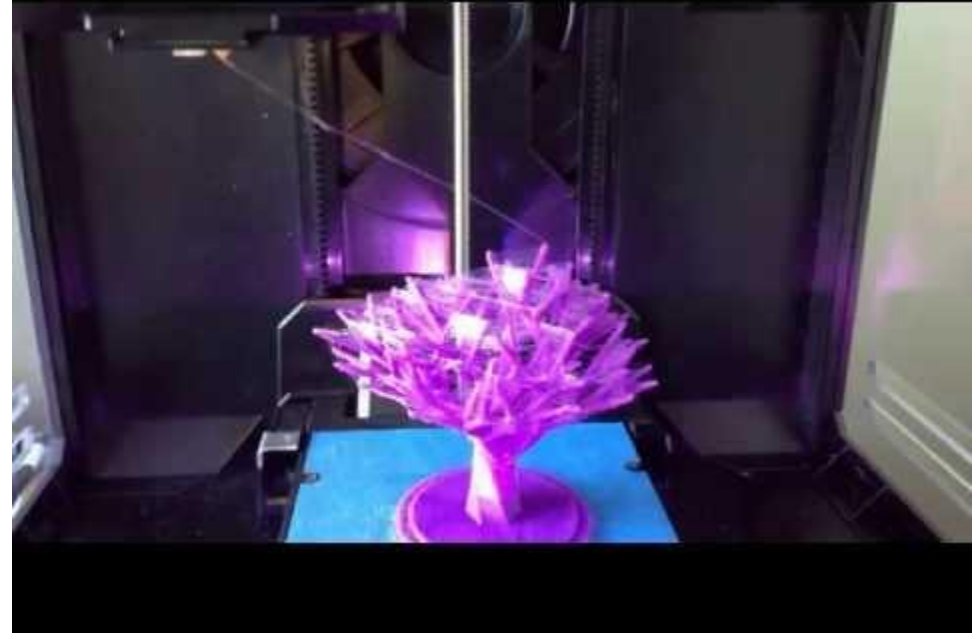
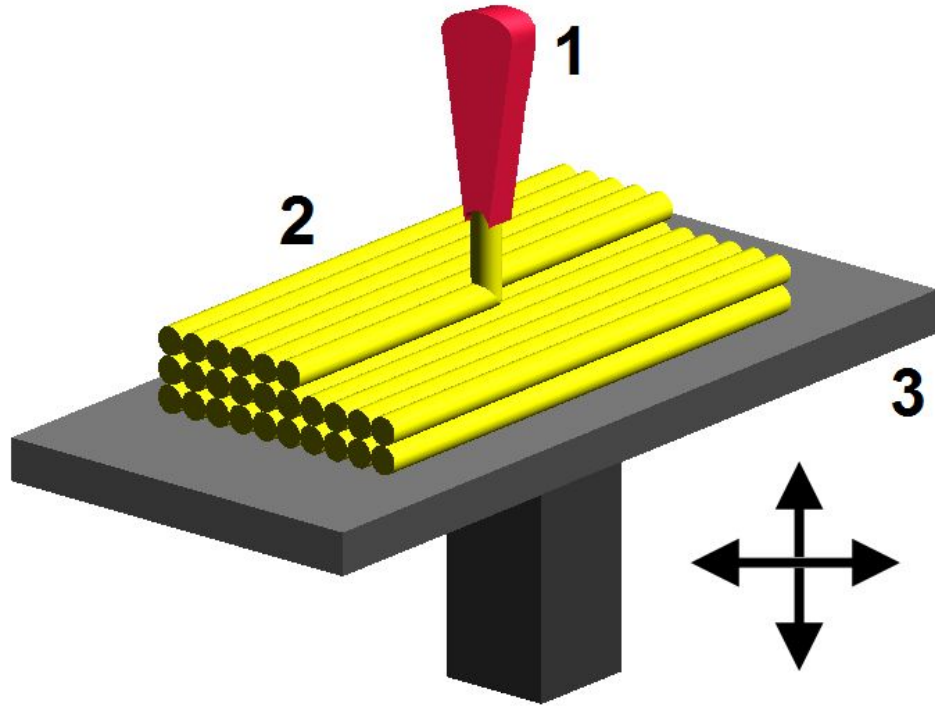


1. From a CAD Model (or download one from the internet!)
2. Export a “.stl” file
3. Use slicing software to generate the “.gcode”
4. Run the .gcode on the 3D Printer
5. Post process your print

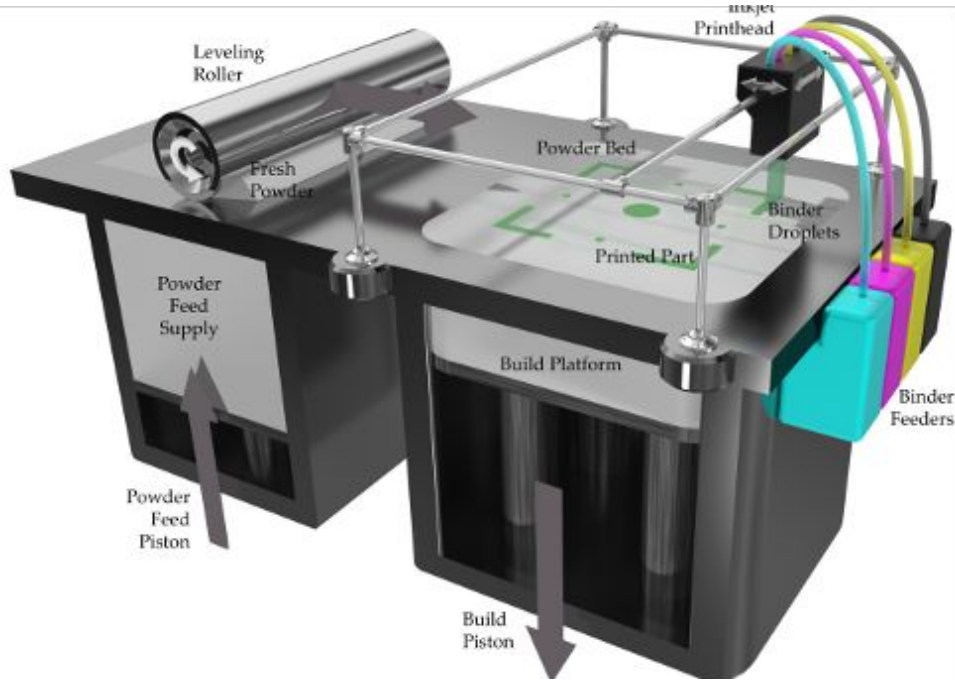
Stereolithography (SLA)



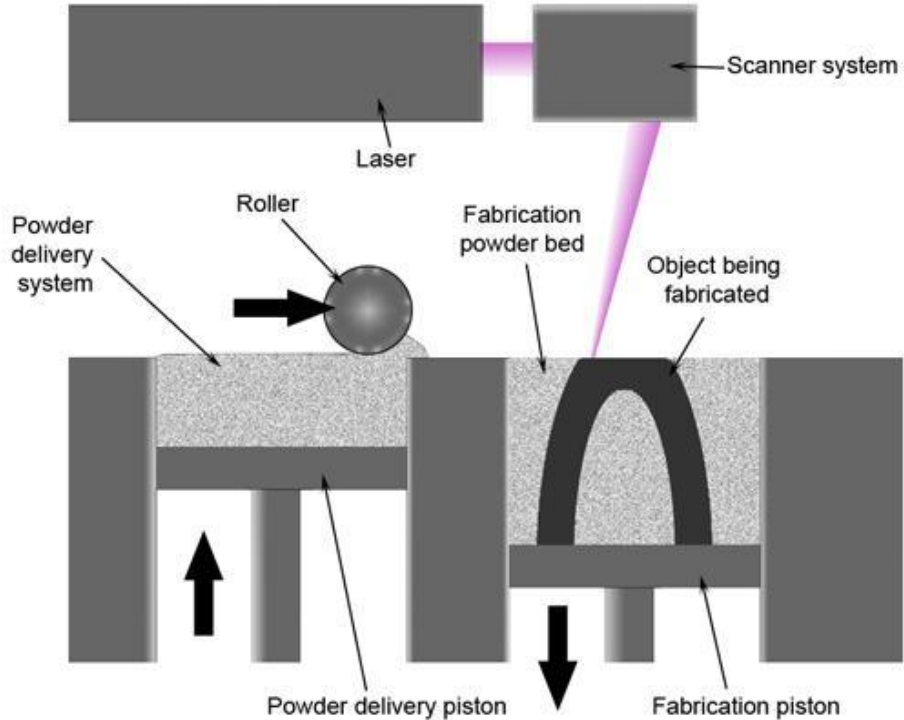
Fused Deposition Modeling (FDM)



Three Dimensional Printing (3DP)

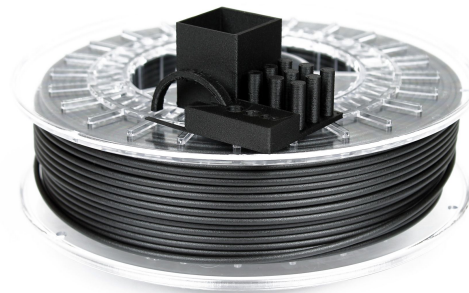
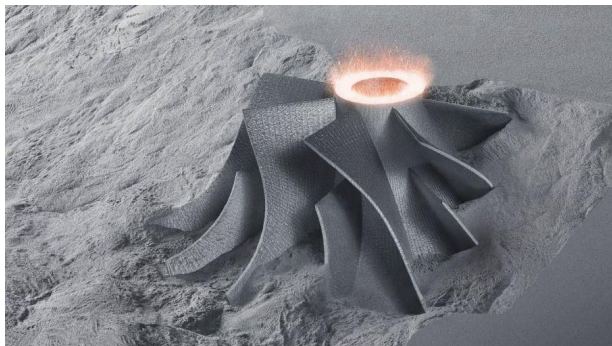


Selective Laser Sintering (SLS)



Part support is accomplished by the un-sintered powder that surrounds the parts during processing

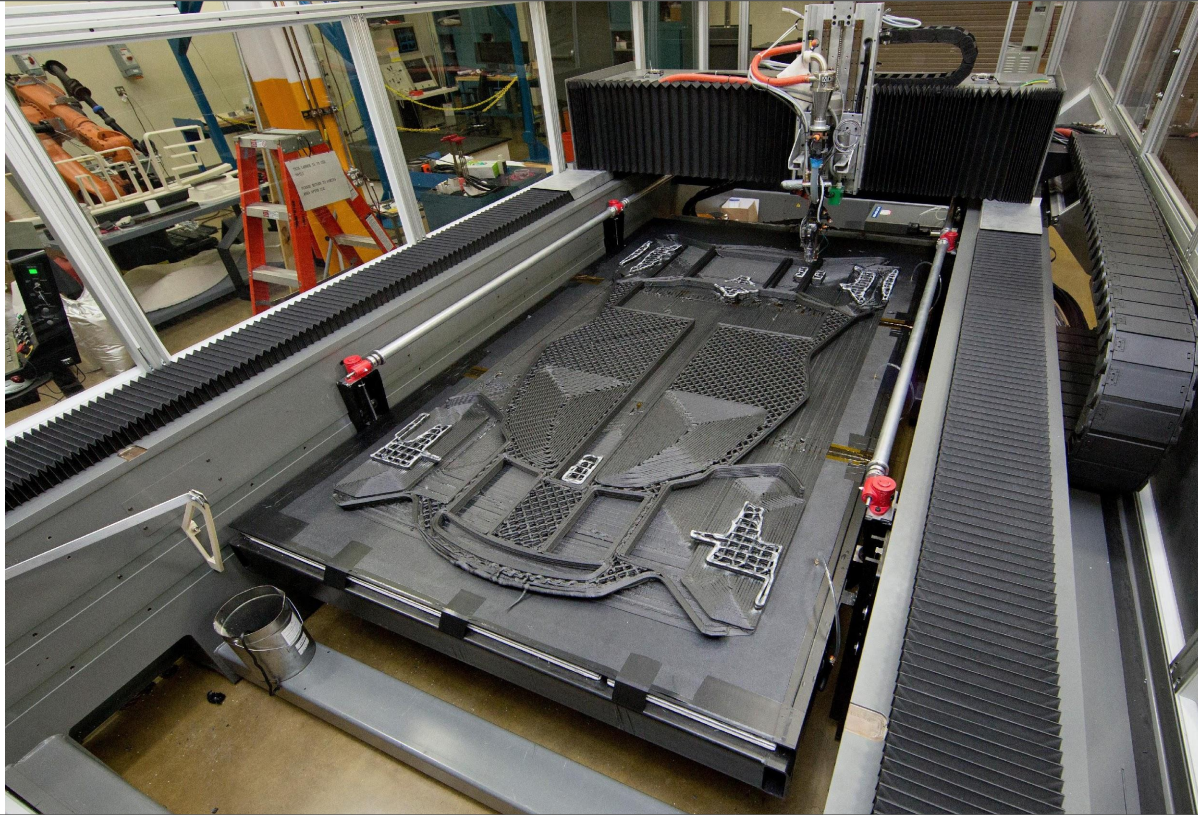
Filament (“Ink”) Types



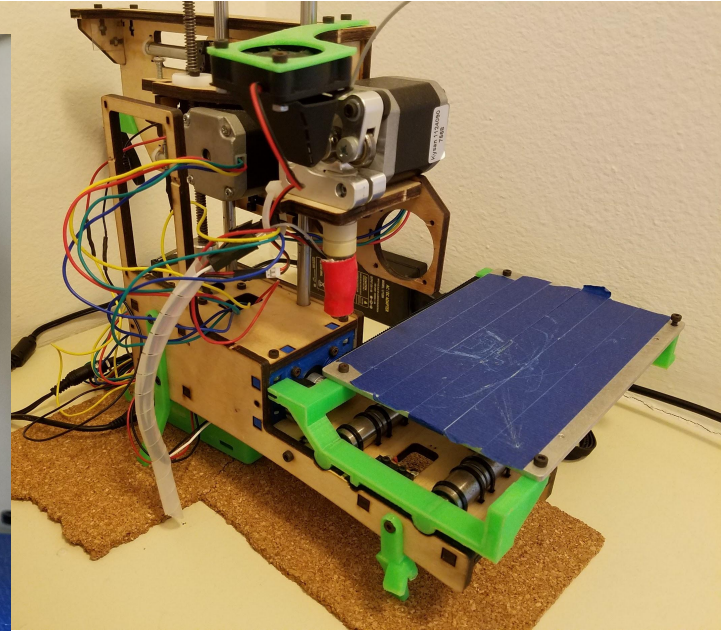
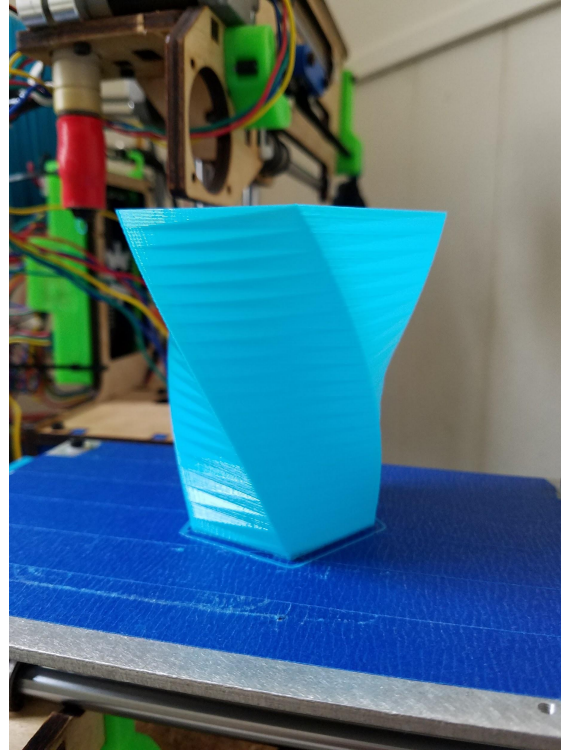
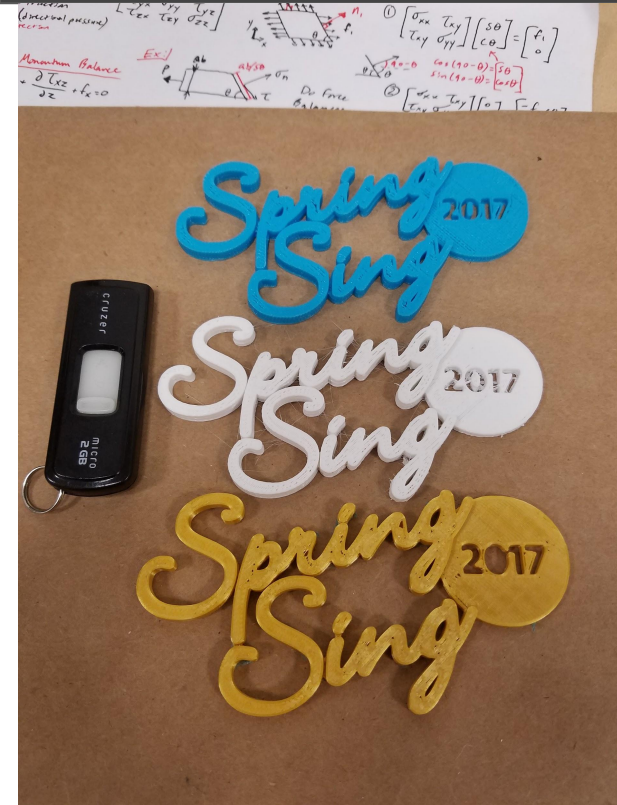
3D PRINTING: Some Examples



3D PRINTING: Some Examples



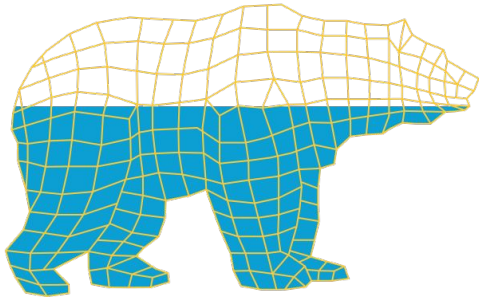
3D PRINTING: Some Examples



3D PRINTING: Some Examples



QUESTIONS?



DESIGN. TINKER. PRINT.
3D FOR EVERYONE

Contact 3D4E: 3d4e.ucla@gmail.com

Contact Ryan: rpooon@g.ucla.edu

Contact James: astemoui@ucla.edu

Contact Quentin: Quentintruong@gmail.com



WHERE WE ARE (Boelter Library, 8th Floor)



2015-16: PROSTHETIC HAND

Last year, we designed a prosthetic hand for a kid without fingers so that he could grasp, dribble, and shoot a basketball.



2016-17: MUSICAL INSTRUMENTS, ADAPTIVE SPORTS, WIND TURBINE



- Ukulele, Pan's flute, shakers, intended to be distributed to nearby orphanage next year
- Modular Wind Turbine
- Collaboration with Angel City Sports



WHO WE ARE

