Florida State University
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Dirac Library

STEM Libraries' 3D Printing Program

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Outside of Dirac Science Library

The Dirac Science Library and the FAMU-FSU College of Engineering Library focus on meeting the needs of the science, technology, engineering, and mathematics (STEM) students and faculty, and together comprise the FSU STEM Libraries. With nearly half a million visits a year, the STEM Libraries provide great, user-focused spaces, services, and information resources. However, the STEM Libraries have begun to evolve, and are now focusing on piloting and promoting new, innovative library resources and services created to support the changing needs of FSU's STEM community.

One of the most popular of these new resources is a 3D printer, which extrudes a fine plastic filament to build up a 3D model from a file created using computer aided design (CAD) software. The STEM Libraries provide services to support 3D printing, including a guide with design tutorials, file analysis, and printing support. This printing service is offered to FSU students, faculty, and staff at no charge. To date, printing projects have ranged from molecular models to fossil replicas, as well as some small personal projects. While academic print requests are given priority, the library does grant some non-academic print requests. Requests are primarily evaluated to ensure the printer can handle the proposed project and to ensure no copyrights are violated.

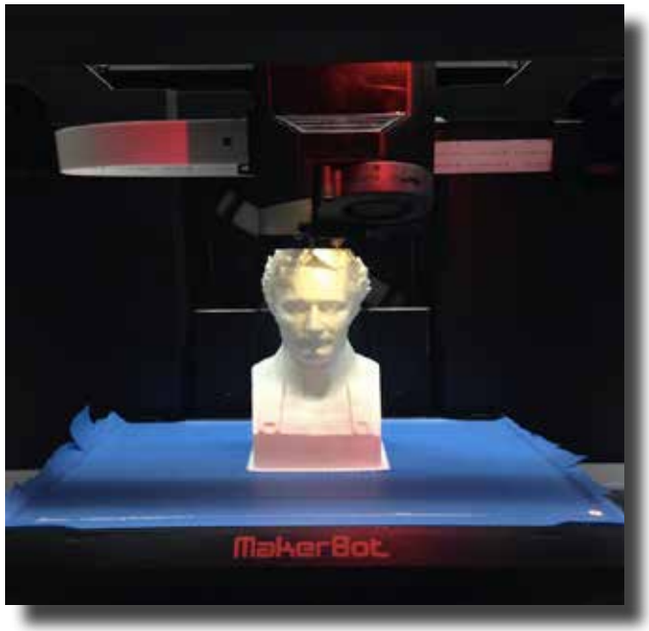
Since broader marketing of the service began in Spring 2016, print requests have increased over four hundred percent. The types of projects submitted have gone beyond one-off prints; faculty have begun building assignments and using printed models to facilitate research prototyping. Because of this, the Libraries have acquired two new, even more capable 3D printers to replace the older, original model.

In an effort to keep the service free while promoting sustainability efforts on campus, the STEM Libraries are considering the purchase of a filament recycler that would convert old filament from failed projects into new spools of filament. Currently, the STEM Libraries are preparing a Green Fund grant application through FSU Sustainable Campus to fund this project.

One of the future goals for this program is to add a 3D scanner to the printing service. This would allow delicate or rare items to be scanned and replicated for use in instruction or research.

For more information regarding 3D printing at the STEM Libraries, please visit our guides at http://guides.lib.fsu.edu/3dprinting and http://guides.lib.fsu.edu/3dprint-directory, or contact Renaine Julian, rjulian@fsu.edu.

3D Printing at Dirac Science Library



3D Printing at FSU Libraries

Dirac Science Library provides a 3D printing service for all current FSU students, faculty, and staff.

- Home
- Learn
  - The Process
  - Resources
- Submit
- Policies
- Find Other Printers

Adjusting Your Model

Overview | Layer Height | Infill | Rafts and Supports | Finishing Your Model

The printer has different settings that will affect how your model appears once printed. You may ask for adjustments to the following settings according to your model needs or stick to our default options. The default settings are the following:

Layer Height: .20mm

Infill: 10%

Rafts and Supports: On

3D Printing Process at a Glance

1. **CAD Modeling Software**
   Uses geometric shapes and/or data to create a 3D representation (unitless)
2. **.stl File**
   Creates geometric shapes into mesh data
3. **Repair Software**
   Analyzes mesh data to correct any unseen problems that occurred curing design
4. **Slicer Software**
   Slices 3D mesh data into 2D layers, creating instructions for printer to follow
5. **Print**
   Printer follows instructions made by slicer software