Using the 3D Printer

1. Create a 3D model in any program that can save you model as .stl format (i.e. Maya, Rhino, etc.)
2. Make sure that you have a closed model. This means that all of the surfaces are touching at the corners there are no unresolved intersections. If you are using Rhino, it has a dialogue box when exporting objects as a .stl that will inform you when the model is not appropriate for 3D printing. If it is not, then you can go back to the original model and attempt to locate problem areas and fix them. Another option, if you are using Rhino, is to download the "Mesh Repair" tools for rhino from the McNeel website: http//wiki.mcneel.com/labs/meshrepair
3. The 3D printers have a cavity of 8" W x 10" L x 8" H which you model must fit within. Please scale your model to fit these dimensions before you bring your file to the Woodshop.
4. Remember that the more of the cavity you fill, the longer it will take to build. For instance, a model that fills 8" x 8" x 7" will take approximately 60 hours to build, and furthermore, it will require at least one or more days in the bath removes the support material. Conversely, extremely thin or small parts have a relatively high rate of failure or breakage. Objects that get thinner than about 2 millimeters tend to break, or fail to print properly all together.

3D Printer Policy and Procedures

Due to the cost of operation of the machine, projects that require the use of the 3D printers will be categorized into three different types. These projects are as follows:

1. Grant/Research projects
    - Authorized to qualifying professor or research
    - Billed to the grant fund or to other funds allocated to the research
2. Departmental projects (i.e. design studio projects)
    - Authorized by a professor of an applicable class or studio
    - 1/3 of the total cost of materials is billed to the student who uses the machine
3. Person Projects
    - 100% of the cost is incurred by the person who does the 3D print.

In all cases, the project will be billed **before** the print is started. You can pay for your print in the Woodshop by credit card. The cost is based upon the amount of the material used x volume necessary for the model, and also upon choice of 3D printer used. Discounts apply as a function of circumstances.

Revised on January 27, 2016