



# NEWSLETTER

## July 2023

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*"The MakerBarn is a member-driven family-friendly makerspace that exists to provide a place for our members to envision, design, and realize creative projects. We are dedicated to building a creative maker community among our membership and the community at large."*

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## Entering Our Eighth Year!

The 7th anniversary celebration we had last month was a huge success. Apparently, it was in the Impact newspaper as a thing to go to on the weekend. There must have been close to 100 people in the Lab and Shop at one time. No grumbling was heard, everyone had a good time. As a result, our new member waiting list jumped up to about 30 people. We must be doing something right.

Lisa Lane had a great turnout at the ceramics get-together in June, there will be another this month, don't miss it!

Elsewhere in this newsletter you can read all the details about our three new 'toys' either at or coming soon to the barn. Each of these equipment purchases were made after input from our users to Executive Committee members or just noticing increased demand in one particular area. So, if you have ideas about where we need to invest additional time and money - speak up!

There will be new training opportunities in 3D printing and it is especially important that you take time to be trained on our three new machines as they are nothing like the ones they replace. And note that welding training is paused until October 'cause it's just too hot right now!



Happy making this summer!

George Carlson  
President, MakerBarn



MakerBarn as seen from Google Earth

# New Equipment in July!

We have not one or even two - but three big equipment announcements this month!

First is a vast improvement to our 3D printer lab. We had three different FDM printers that used three different types of slicing software and two different sizes of filament. This was far from an ideal situation. We have replaced all the printers with three new **Bambu Labs P1P printers**. These new printers are truly state-of-the-art 3D printer design. They are very fast, but more importantly, they automatically do many of the menial tasks that have been the responsibility of the operator. At startup of the printing process they purge and clean the nozzle, calibrate their response to vibration, and measure the print bed and automatically compensate for bed alignment. See elsewhere in this newsletter for more details on printer operation.



The next improvement to the makerspace is the purchase of a new **Horizontal Bandsaw** for sawing metal. It makes precise cutting of metal tubes and bars so much easier. You can make accurate cuts at 90 degrees down to 30 degrees in material as large as 7" in diameter. It also has a built-in coolant system which greatly improves blade life.



This is a Grizzly Model G0613 - 7" x 8-1/4" 1 HP Swivel Metal Cutting Bandsaw. Check out all the specs [here](#).

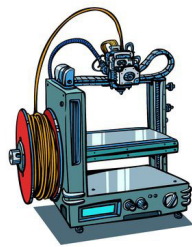
The third item is currently in the works. We have ordered a **CNC Plasma Table** for the welding shop. In many ways this machine is like a powerful CNC laser. It can cut conductive material, like steel, up to 1/2" like butter. It will cut 1/8" thick steel at 64 inches per minute! The capacity of the machine is 3' by 4', but you can pass through the four-foot-wide path and do even larger pieces of stock. The machine is coming in six separate shipments, and we must do some rearranging and electrical work in the welding shop. The machine should be ready to use by July 19th. Watch the metalwork-machining channel on Slack to find out about the latest progress.



## Training Notes for July:



The hands-on welding experience is on summer break at The Makerbarn. Working in the welding area during the summer heat has become hazardous. The hands-on welding experience will resume in October 2023. It generally consists of 8 hours of one-on-one training using the MIG and/or TIG welders. So far we have had 15 students participate. Currently we have 7 students on the wait list. Hope to see you welding this fall! - Reach out to Joe Foster on Slack if you're interested in Fall welding training.



3D Printing Class is planned for Saturday July 15 at noon at the Lab. The class will cover the bare basics of designing an object in Fusion 360, converting it to an STL, then importing the STL into Bambu Studio and printing the object.



Another Ceramics class is planned - watch Slack Ceramics Channel for details! & see elsewhere in this newsletter for information.

## ***Are you Manager Material?***

The MakerBarn runs on volunteers. If you have been an active member for two months or more, we would like you to consider becoming a Shop MakerBarn Manager.

MakerBarn Managers work 3-4 hour shifts during which they supervise the general operation of the Shop keeping a close eye on safety and noting any maintenance issues that arise. They also devote a fair amount of time to general cleaning of the shop floor and emptying the dust collection and trash systems. They give prospective members tours and update MACS access cards as needed for members.

**Oh, and they enjoy 24/7 access to the Shop!**

If the Shop manager role sounds interesting to you, contact Jim Barron via Slack.  
Thanks!



## Getting Started with Ceramics!

We have kicked off the ceramics program at Marker Barn!

This means you may observe interesting pieces drying on the shelves in Suite 203. These are very delicate and we ask that members please do not touch them. Observe them only from afar!

If you are interested in making something that you see, post a message on the Ceramics channel in Slack. Also note that the kiln will be fired periodically in that same space. Please be mindful of the potential for it to be very hot! For safety reasons, it is advisable to not have unaccompanied children in that space.



We had 18 members participate in our first pour night. It was great fun getting to know our fellow Makers better and learn about ceramics.

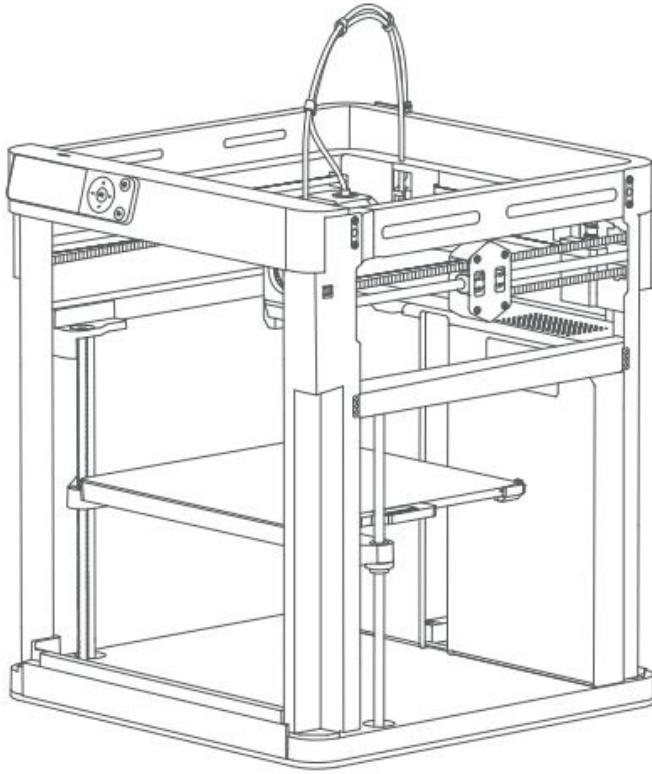
If you missed it, we have a second Pour Night scheduled for Monday, July 24th, at 7:00PM. This is for any of our adult members interested in the ceramics programs. This serves as our general ceramics orientation, so anyone interested in ceramics is encouraged to attend. Please register by July 20th, at <https://forms.gle/1e9ZVj3wJhT8wV6M9>, so we can prepare for the correct number of people.

Look for more information about the ceramics program on the Ceramics channel of Slack!





## New 3D Printers for The MakerBarn



We have purchased three Bambu Labs P1P 3D printers to replace the old machines we had. The new printers are a big improvement over what we had, in fact they are a big improvement over most all consumer 3D printers on the market.

The machines were designed from the ground up to be fast, reliable, and easy to operate. When I say they were designed from the ground up I mean they do not use 8020 extrusions, 3D printed parts, or ancient extruder designs. Because of this some have complained they are not open source. Personally, I think that's a good thing.

For the slicer we will be using **Bambu Studio**, which I believe is a fork of the Prusa slicer. I would like to mention that the engineers who designed this printer spent a lot of time and effort fine tuning the profiles used for the various

configurations of bed and filament types. So please do not change any of the settings except as noted below. This is to keep the server as clean as possible and prevent damage to the printer. Just as we cannot allow users to mount various blades in our SawStop table saw, ***we cannot allow users to modify the parameters of the slicer.*** This is a tool for us all to use, not an experimental toy for some.

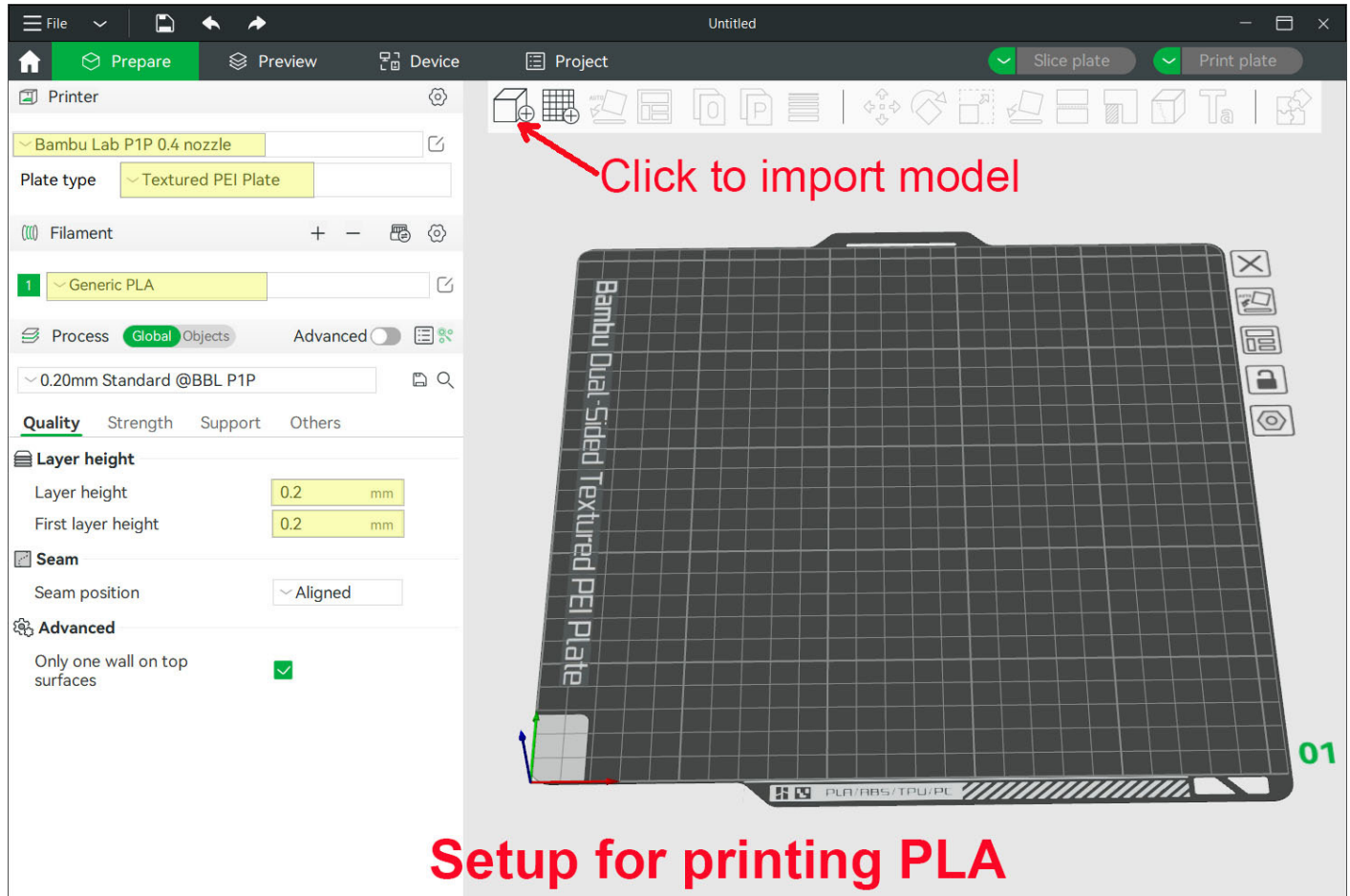
When starting up Bambu Studio, there are a few things you should check. Using the “**Device**” tab, select which printer you wish to use. Then on the “**Prepare**” tab, the first box should read “Bambu Lab P1P 0.4 nozzle”.

The Plate type should be “**Textured PEI Plate**”. This is important because it sets the bed temperature. If it has another value, use the pull down to select the proper plate.

Next, select the proper filament type. We only allow PLA, PLA-Silk, and PETG. Most of the time Generic filament is used, but you may have some special Bambu filament, so select the Bambu filament on the pull down.

Keep both layer height settings at 0.2mm.

Here are some settings you can change based on your needs. Be sure to check these settings, the person ahead of you may have selected something you did not want.

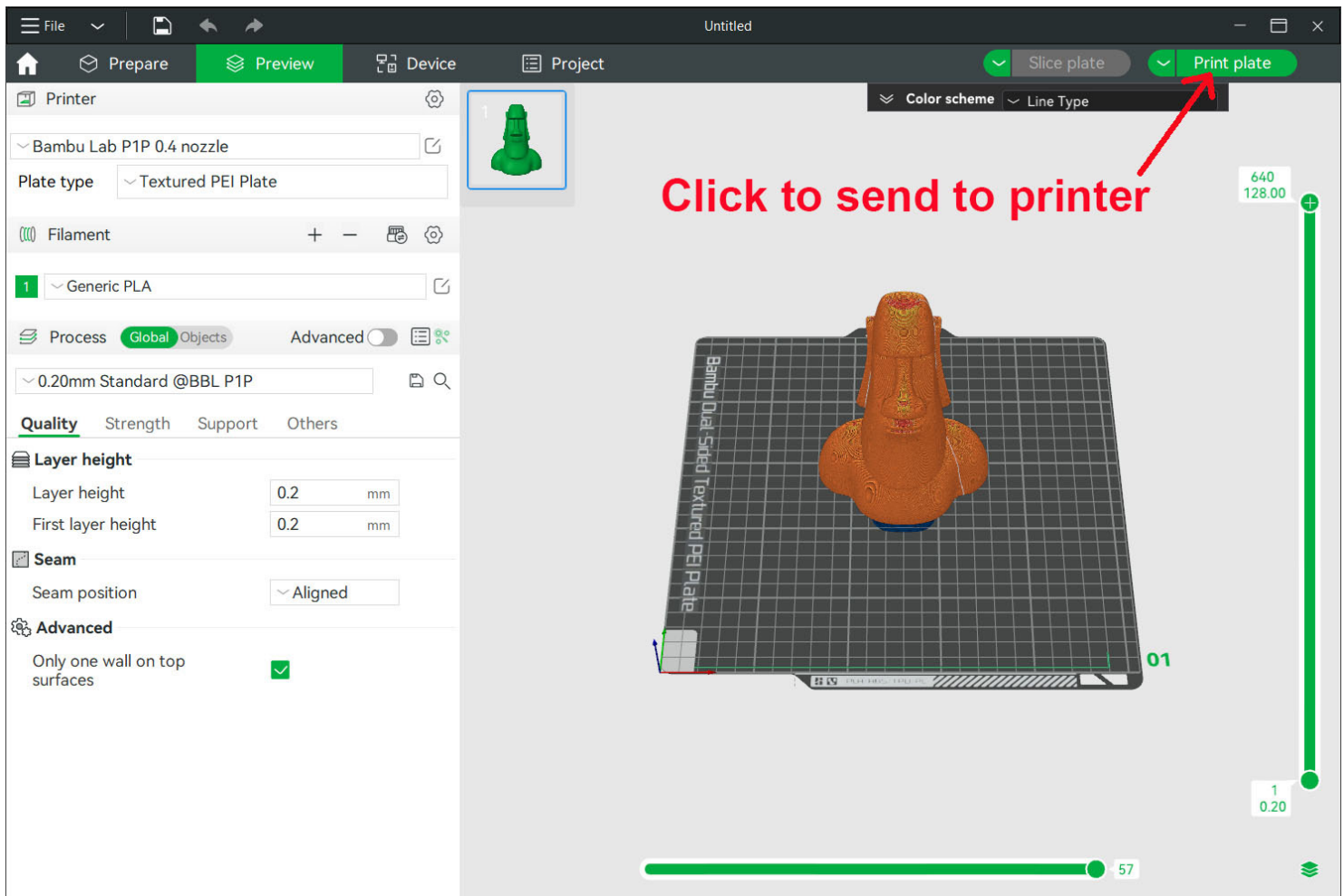


On the “**Quality**” tab, the seam can be set to “aligned” or a couple of other settings. If the seam is aligned, each layer will start at the same point which produces a vertical line on the print. Selecting “random” will eliminate the line, but it can make the print a little rough feeling.

Under the “**Support**” tab, you can enable supports. The system may warn you that supports are needed when you slice.

The last thing you should watch is brims. **Brims** are a single layer placed around the part and they can be placed there automatically if the slicer thinks the contact with the bed is too narrow to adhere to the plate.

In the “**Other**” tab you can set the brims to “auto” or a few other selections including “none”. Brims can be difficult to remove from your finished part, so use them with caution.



This just barely touches the operation of the slicer, but the truth is the slicer is very easy to operate. Select the printer you wish to use using the “**Device**” tab. Import your model, check the settings above. Click the “**Slice plate**” button. This takes you to the “**Preview**” mode. Look for error messages, if OK, press “print plate” and the slicer will send the data directly to the printer.

The printer takes about 6 minutes to prepare the nozzle self test and check the bed. At first this is an annoyance, but soon you will appreciate that it is doing things to make your print successful and prevent problems like clogged nozzles.





*A few rules:*

- Only use one printer at a time, other members may wish to use one of the printers, they shouldn't have to wait for your print to finish.*
- Use only PLA and PETG.*
- Do not attempt to use any filled plastic, ABS, Nylon, or TPU.*
- As stated above, do not change any settings other than those specified above.*
- If we all follow the rules and help protect the machines from misuse, we will all be able to make excellent quality prints.*

Please follow these simple instructions and remember to ASK if you do not know.

***Now, enjoy our new 3D printers!!***

## MADE AT MAKERBARN!



**David Grimmer** made two Tae Kwon Do belt display boards and four of the Dungeon and Dragon boxes for his grandkids.

The Tae Kwon Do boards were cut and personalized on the CO2 laser. The Dungeon and Dragon boxes were done with the CNC router and the grandkids designed the laser engravings.



## ***MADE AT MAKERBARN!***

**Paula Mytyk** made a cedar patio table. Being brand new to The Maker Barn, in addition to being a very inexperienced woodworker, she was very pleased to start and finish her project at MakerBarn. She says a big thank you to everyone who certified me on equipment, answered questions and provided me with tips and tricks!





## MADE AT MAKERBARN!

**Colleen Helz** made this cutting board for some friends. Walnut and pecan and engraved on the laser.



## MADE AT MAKERBARN!



**Allison Cozad** made LGBTQIA+ Pride decorations for her house. These decorations were made by cutting corrugated polypropylene plastic on the laser cutter. Her primary objective was to design a vibrant banner featuring cartoon and anatomical hearts in a variety of rainbow colors. Additionally, she kept the leftover scraps of outlines of anatomical hearts, which unexpectedly turned out to be delightful and playfully eerie for a second decoration.





# MADE AT MAKERBARN!



**Trevor Whalen** made a chess board table top. He was asked to make this with a dedication and old photo of the persons grandmother. It was mounted on an old Singer sewing machine base.





## Members, please remember!!

Members - PLEASE remember to clean up after using any equipment in the Shop or the Lab. Pictured here is equipment that was NOT left in acceptable condition.

Also, if you leave anything in the Shop or Lab you MUST label it with your name, date and when you will be returning to pick it up.



**Items left without ID may be moved or disposed of at the manager's discretion!!**

## Meet The Area Managers

	<p><u>WOODWORKING &amp; CNC</u></p> <p><b>Jim Barron</b> has lots of experience with woodworking and CNC. He holds occasional CNC classes that demonstrate the Vectric VCarve Pro software we use. Jim can check you out on woodworking and CNC tools at the Barn. Contact him via SLACK.</p>
	<p><u>LASER PRINTING</u></p> <p><b>Greg Radliff</b> is an artist and expert at using Laser Cutter and Engravers. Greg can show you the LightBurn software we use and can check you out for use of the Laser printers in the Lab. Contact him via SLACK</p>
	<p><u>3D PRINTING</u></p> <p><b>Jody Cochran</b> is a graphic artist with deep experience in 3D printing and other graphics tools. Jody can show you slicer and other software used with the 3D printers. Contact him via SLACK.</p>
	<p><u>METALWORKING</u></p> <p><b>Bryan Manka</b> is area manager for metalworking which includes the metal mill and the metal lathe at the Barn. He can check you out for use of either of these machines. Contact him via SLACK.</p>
	<p><u>ELECTRONICS</u></p> <p><b>Raul Garcia</b> is area manager for electronics. More of a fixer than designer, but willing to help and learn together. See Raul for anything related to microcontrollers, electronic devices or other electronics related projects. Contact him via SLACK.</p>
	<p><u>WELDING</u></p> <p><b>Joe Foster</b> is area manager for welding.</p>

CERAMICS

Lisa Lane

## For New Members

WELCOME to the wonderful world of making!! We know you'll come to love this place as much as we do. First and foremost, this place is about the people. We would like to encourage you to see yourself as more than just a member. We are a community. Because we don't have any employees, we rely heavily on our community to keep things running. So please join in, pitch in, and get involved. Ask lots of questions. We are a really friendly group and love to help one another. The MakerBarn is a fantastic community of makers and we are glad you are here!



### **Maker Barn: The Shop & The Lab**

28030 FM 2978, Suites 201, 202, 203 & 204, Magnolia 77354

Phone: 832-663-6390

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#### **MakerBarn Directors:**

George Carlson, Director and President

Jeanie James, Director

Greg Radliff, Director

#### **Executive Committee:**

Kathy Barbieri - Procurement and Acquisitions

Jody Cochran - Secretary

Raul Garcia - Member at Large

Jim Barron - Membership

Matt Folsom - IT

Doug Green - Web Site

Ashley Dickson - Member at Large

John Buckley - Newsletter Editor

#### **Area Managers: (Guru or Custodian)**

Woodworking - Jim Baron

Lasers - Greg Radliff

3D Printing - Jody Cochran

Metalworking - Bryan Manka

Electronics - Raul Garcia

Welding - Joe Foster

Lisa Lane - Ceramics

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