



NEWSLETTER

August 2021

"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."

Welding Shop - Now Open!



The new Welding Shop is ready!!!

This has been a long-awaited addition to our new shop. In the Welding Shop we have equipment for Oxyacetylene welding and brazing. Also, MIG (wire welding) and TIG (tungsten inert gas) welding and a Plasma Cutter.

The Oxyacetylene torch is the most versatile welding tool we have. You can weld (steep learning curve) braze, solder, and heat metals for bending.

The fastest path to welding steel is the MIG. In MIG welding a wire, surrounded



by an inert gas (a mixture of Argon and Carbon Dioxide), has a high current passing through it. This generates an arc between the end of the work and the workpiece. Both the wire and workpiece melt producing the weld. The wire is automatically fed, so making a weld is almost as easy as using a hot-melt-glue gun.

TIG welding is the high-tech way to weld. This technique uses an arc generated between a tungsten electrode and the workpiece. The area is flooded with Argon, an inert gas. The Argon shields the weld from the air while the metal is molten. Almost any metal can be welded with TIG, even Magnesium!

Welding is an acquired skill. It is one of those things you can read about, but it still

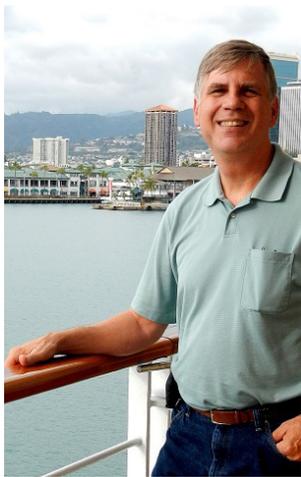
takes a lot of practice to get it right.

Welding is not the only thing in the shop. We also have equipment for small scale foundry work with non-ferrous metals. We can do investment casting for high detail objects like jewelry, and sand casting for low detail larger items. We have several videos on YouTube showing this sort of work being done at The MakerBarn.

There are also some metal forming tools that can be used to make decorative iron work. You can build a fancy gate, or just a simple wall hanging.

Last, but not least, there is a media-blasting cabinet (sand blasting). We don't use sand, but instead a very clean white aluminum-oxide abrasive. The blasting cabinet is a great place to clean old rusty parts, etch glass, and prepare a part for powder coating. Be sure to turn off the air to the cabinet when not in use, the hoses inside tend to pop loose and the air would run until someone discovers it. If you would just like to use the media blaster, no problem, just ask the manager to lend you a special access card. The media blaster does not require any special certification.

Access to the Welding Shop is controlled. If you have been certified to use the welding or foundry equipment your finger-print is all that is needed for access.



A big thanks to all those who made the new welding shop possible.

I want to welcome the new members who have joined us this month. If you see someone you don't know, introduce yourself and welcome them to The MakerBarn. We have so many things going on at The MakerBarn it can sometimes be a bit intimidating to the new members. A good way to find out about all our various activities is to get on Slack. Slack is our primary way to communicate between members. There are quite a few channels you can join, so jump in and join the communications.

With the opening of the welding shop, our move to the new shop is just about complete. We still need to improve the A/C air distribution, any ideas? We also need to build a wall enclosing the machine shop, build a floor above it, and build a stairway for better access to the store area above the bathroom, office, and machine shop. I think we will wait for cooler weather and lower lumber prices before we begin those projects. If you want to get involved in any of these projects let one of the managers know.

With one-hundred-degree weather outside it is hard to think about Christmas gifts and decorations. Now is the time to start putting together ideas and making plans. Then, of course there is Halloween and Thanksgiving. It never ends.

Have a good time in our new shop and lab, work safe.

George Carlson, President



MADE AT MAKERBARN!



Kathy Barbieri made Texas travel give-aways for an upcoming trip to Iceland. She used 1/8" birch plywood with speed to power ratio of 100/20 for fill engraving and 20/60 for line cutting.

David Figueroa made a Korbin Dallas gun called "the Spammington" from the 1997 English-language French science fiction action film; "5th Element". It was made on a Prusa MK3s+.



Mandy Sullivan made engraved cork trivets on the MakerBarn laser.

MADE AT MAKERBARN!



Mandy Sullivan made leather patches for hats and acrylic key-chains, both cut and engraved on the laser.



Mandy Sullivan made a 2.5” tall tweety bird. She used five layers of acrylic to make and lots of teeny, tiny pieces adhered with 3M double sided tape.



MADE AT MAKERBARN!



Fred Morales made a very comfortable Adirondack chair and he is willing to share the plans and templates for any members that would like to build the same.

Fred Morales made a sandwich board for a friends Cajun food truck.



MADE AT MAKERBARN!

Fred Morales made a beer cooler box with a friend to enclose an ice chest on his patio.



© CE Raum OneBadMOPHO

CE Raum used the Raspberry Pi HQ Camera, Google Coral USB Accelerator and Tensorflow TFLite software to create a camera that uses Artificial Intelligence / Image Recognition to capture images of birds at his birdfeeder.



MADE AT MAKERBARN!



Candida Wolfram made signs for “Sanderson” and “Tristan” out of 1/4” Baltic birch. The MakerBarn laser was used to create/engrave faux shiplap on the Tristan sign.



MADE AT MAKERBARN!

Candida Wolfram made a home leaning ladder. It has interchangeable inserts so it can be changed for different seasons. Ladder and inserts on 1/4" Birch plywood, top layer on the inserts is 1/8" ply .



Candida Wolfram engraved "Blalock" on an Amazon purchased charcuterie board made from AmazoAcacia wood. It was engraved at speed/power ratio, 250/40.

Injection Molding Machine Demo

On Saturday, July 24 MakerBarn was pleased to host our first in person equipment demo in a long time. George Carlson demonstrated the operation of our Injection Molding machine.



Are you a Slacker? No, we don't mean are you lazy! We mean do you have an account on the SLACK App and have you downloaded it to your phone?

Nearly all of MakerBarn's internal day-to-day communication is conducted on SLACK within the fifteen channels that have been created for everything from Equipment Maintenance to CNC training. If you are a MakerBarn member and are not currently using SLACK, please write to info@themakerbarn.org and request that you be added to the app & then follow the instructions to you receive to download the app and begin using the channels for the most up-to-date news at the Barn and the Lab!

CAD/CAM GCode Maker Barn Software Explained

The purpose of this document is verify where to find and how to use appropriate software for each CAD/CAM machine at MakerBarn. NOTE: This paper is current as of the date listed above. Please be sure you are reading the most current version for the most up to date information

At MakerBarn we are fortunate to have a number of machines that are capable of using computer generated code to drive the manufacture of an object. This type of configuration (computer + machine) is relatively new and has often been called Computer Aided Design (CAD) for the computer software side and Computer Aided Manufacturing (CAM) for the hardware machine side. This combination is often abbreviated as simply CAD/CAM.

CAD/CAM software typically outputs a special set of instructions for each manufacturing machine it supports. These instructions are called “generated code” or “G-code” and they are of a specific type for each supported manufacturer’s machine.

It is very important that you use a CAD software that generates the proper G-Code for the type and brand of machine you are using at MakerBarn!

There are three basic types of CAD/CAM available at MakerBarn: 1) Laser Cutting/Engraving, 2) Computer Numeric Control (CNC) and 3) 3D Printing.

Machine:	Software:	Special Price*	Contact
LASER	Lightburn	Yes	Greg Radliff
CNC	Vetric VCarve Pro	Yes	Jim Barron
3D PRINTER	Fusion 360/Cura/Simplify3D/Prusa	No	Jody Cochran

*reduced price available for makerspaces like MakerBarn

SOFTWARE	USED BY	MakerSpace Pricing
 LightBurn	LASER Thing One – The Lab LASER Thing Two – The Lab	LIGHTBURN is \$20 for MakerBarn users by using the special license code. \$30 per year for additional upgrades
 VCarve PRO	CNC 4’x4’ – The Shop CNC Carvey – The Lab CNC Mini for PCB – The Lab	VCARVE PRO Special Makerspace Client Edition is free by downloading the current version trial and then entering the special license code. Note that we keep a special Makerspace Master Edition at MakerBarn and only it can export code to CNC machines
 AUTODESK® FUSION 360™	SPEC #1 – The Lab SPEC #2 – The Lab PRUSSA – The Lab TAZ – The Lab Resin 3D – The Lab	N/A

Meet The Area Managers!

	<p><u>WOODWORKING & CNC</u></p> <p>Jim Barron 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>Greg Radliff 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>Jody Cochran 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>Bryan Manka 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>Raul Garcia 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>No Area Mgr Yet</p>	<p><u>WELDING</u></p> <p>We have no one assigned to area manager in this area at this time</p>

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
28030 FM 2978, Suite 204 77354
Phone: 832-663-6377



MakerBarn: The Lab
28030 FM 2978 Suite 101 77354
Phone: 832-663-6377

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
Daniel Cielecy - Treasurer
John Buckley - Newsletter Editor

Area Managers: (Guru or Custodian)

Woodworking - Jim Baron
Lasers - Greg Radliff
3D Printing - Jody Cochran
Metalworking - Bryan Manka
Electronics - Raul

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