

05 Lab and Fab, upcycle resources, patterns and shading,

Friday, January 24, 2025 8:29 PM

Today: Lab and Fab - Idea Forge and BTU ,
shade and shadow, upcycling resources

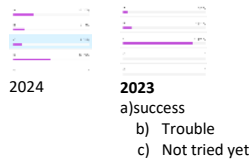
Admin

CATME survey -Slack me if you have not gotten invite.
And fill out the survey on a computer, not your phone.

Great job on Aesthetics Exploration posts!

Post #1 progress:

- 76
38
2
- a) Success!
 - b) Trouble logging in
 - c) Trouble making post
 - d) Not tried yet



A few things that are not aesthetics:

- Materials like wood. Just because wood looks nice does not make it an aesthetic by itself. Go further, to style and context.
- A generic sport i.e. cycling. There are all kinds of approaches and styles that change the aesthetic. Be specific.
- Upcycling. An upcycled artifact can embody any number of aesthetics. Think of a minimalist array of packing peanuts vs a maximalist frozen explosion of multicolored peanuts, or an elaborate faux-Victorian swan made of aluminum foil and cut up cans covered in fleur-de-lis and curlicues.

Grad presentation 5 minutes

Andrea Marks: Psychoergonomics and the Emotion of Design

https://docs.google.com/presentation/d/1AmO_-QT5oMdMYekqEISUJ-g6keYepRQcW8p_JWBc_nq/edit?usp=sharing

Lab and Fab:

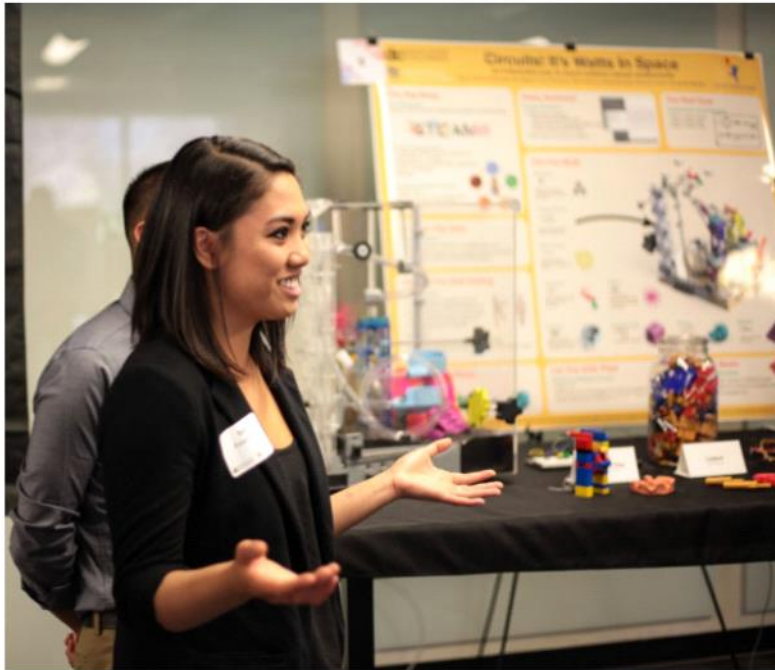
Upstairs - Idea Forge:

Amiy Yadav Adjunct Instructor



IF Intro
Presentati...





We are a *design* and *fabrication* facility focused on workforce development.

We leverage formal learning, co-curricular learning, and connections with community and industry to *prepare students for the practice*.



Everyone at CU is welcome at the Idea Forge.

We support:

- Building cool stuff
- Course-related projects
- Entrepreneurial projects
- Student clubs
- Events & meetings
- Industry collaboration



Daria Kotys-Schwartz
Director



Victoria Lanaghan
Program Coordinator



Andy Kain
ME Lab Engineer



Josh Colyer
Makerspace Engineer



Pat Maguire
*Electronics & Fabrication
Engineer*



Chase Logsdon
Manufacturing Engineer



Greg Potts
Machine Shop Manager

IDEA FORGE COMMONS



Hours:

M-R 8:00am-10:00pm

F 8:00am-7:00pm

Available Resources:

- Workspace
- Prototyping Supplies
- Sewing Equipment
- Tools
- Disco Ball & Ping Pong

Accessibility Requirement:

Drop-in during open hours

**Hours:**

9:30am-5:00pm

Available Resources:

- Soldering
- PCB Manufacturing
- Electronic Testing Equipment
- Computer Stations

Accessibility Requirement:

Drop-in during open hours

**Hours:**

M-F 9:30am-5:00pm

Available Resources:

- 3D Printing (FDM and SLA)
- Laser Cutting and Etching
- 3D Scanning

Accessibility Requirement:

Drop-in during open hours
(First come, first serve)



Hours (check website):

M 9am-12pm / 1pm-6pm
Tu-Th 9am-12pm / 1pm-7pm
Fr 9am-12pm / 1pm-6pm

Available Resources:

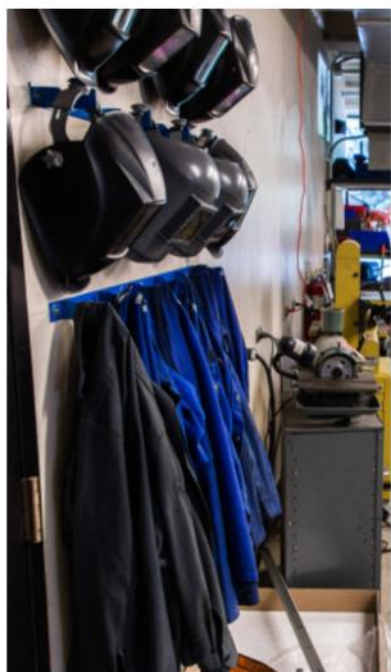
- Woodworking Equipment
 - Saws, Drills, Hand Tools
- Soft Good Manufacturing
 - Sewing Machines, Industrial Sewing Machines

Accessibility Requirement:

Makerspace Safety Contract and Waiver

Workshops:

Intro Woodworking and Intro Sewing



Hours:

M-R 10:00am – 6:00pm
F 10:00am – 5:00pm

Available Resources:

- Mills
- Lathes
- Welding (TIG and MIG)
- Tube Bending
- Waterjet

Accessibility Requirement:

- Machine Shop Safety Agreement
- Drop-in during open hours
(First come, first serve)

Workshops:

Welding



Check Out Office Hours:

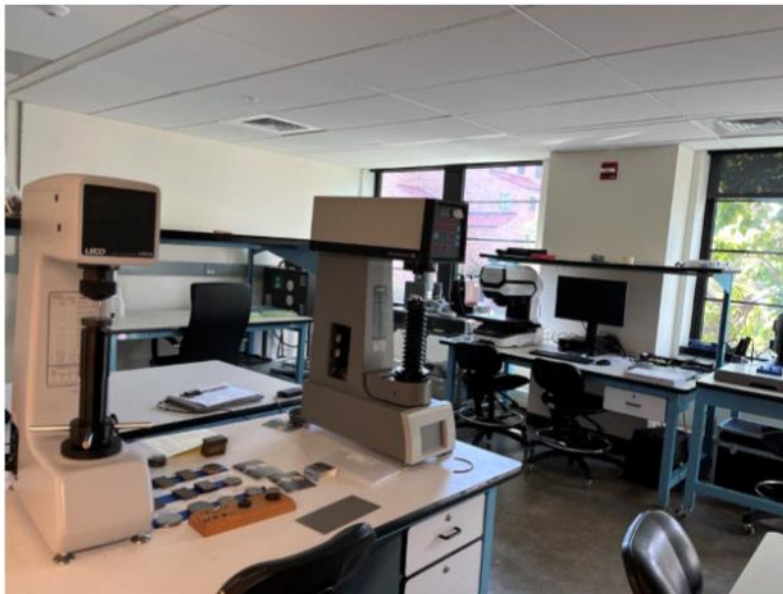
- M-Th 9:30am-5pm
- Fr 10am-4pm

Available Resources:

- Test Equipment
 - Multi-Measurement System, Coordinate Measuring Machine, Electromechanical Test System, Rockwell Hardness, Shock Tower, Wind Tunnel, Shaker Table, Thermal Chamber, NI DAQ Equipment, Video Equipment, Laptops, etc.
- Checkout Resources
 - Nuts, Bolts, Screws, Adhesives, Components, Tool Boxes, etc.
- Workstations for Senior Design

Accessibility Requirement:

Lab Use Agreement



Metrology Lab Hours:

- Contact Andy Kain for access

Available Resources:

- Multi-Measurement System
- Coordinate Measuring Machine
- Electromechanical Test System
- Rockwell Hardness
- Shaker Table
- Thermal Chamber.

Accessibility Requirement:

Schedule training with Andy Kain or a checkout assistant



<https://www.colorado.edu/ideaforge/>

ITLLP

Rachel Sharpe, Senior Engineering Projects Consultant, Faculty Liaison

[ITLP Laboratory and Resources Slide Deck \(Spring 2025\).pptx](#)



ITLP
Laborator...



ITLP
Laborator...



The ITLP

itlp.colorado.edu



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TEACHING & LEARNING
Program and Laboratory

Laboratory & People



INTEGRATED
TEACHING & LEARNING
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Contents

- Our Team
- Building Access
- Spaces & Centers



Our Team

Engineering Education Operations Team

See our entire
team on our
[About Us page](#)



Lauren



Viri



Rachel



Natasha



Nora

ITLP-gg-EngineeringSupport@Colorado.edu



Sa'Von



Ryan



Kat



Mark



Jenn



The Laboratory Building

3+ Floors Of Creativity!

Buff One Hours: 8am-11pm M-Th
8am- 8pm Fri
2pm-11pm Sun



1B) Ground Floor

2B) Basement Floor

You must take a
building tour to gain access!
(M-F @5:15pm, Sun @7:15pm at Launch
Point)



The Laboratory Building

The Launch Point

The Launch Point ..

Here, you'll find:

- An ESS desk, staffed by a helpful ES Student
- Great place to start with questions
- The Wall of Awesome (20 3D printers)
- Mini Laser Machines

1st Rule of the LP:
Leave it nicer than you found it!



The Laboratory Building

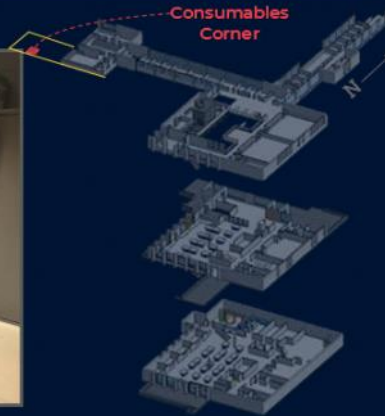
The Project Vault
...and Consumable Materials Corner

Here, you'll find:

- Consumables
- Tape
- Glue
- Hardware
- Electronics
- All sorts of stuff for free!

1st Rule of the CMC:

TAKE ANYTHING! If you don't
break it, re-donated it



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The Laboratory Building

Manufacturing Center (Wood & Metal Shops)

The Wood Shop

He



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The Laboratory Building

Manufacturing Center (Wood & Metal Shops)

...and

Here, you

- CNC machines
- Manual machines
- Fabrication of plastic, etc.

Include



Shop
50



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The Laboratory Building

Electronics Center & Electronics Fabrication Center

...and The Electronics Fabrication Center

Here, you'll find:

- Soldering irons
- PCB Equipment
- Inspection Scope
- Rework Equipment
- Arduino, Particle, Raspberry Pi Kits

Includes the offices of:



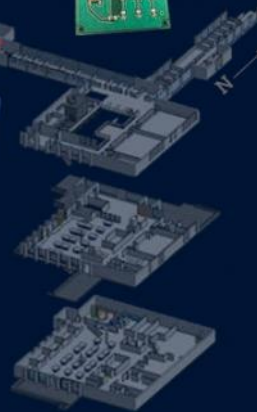
Lauren
Darling

Rachel
Sharpe



Electronics Fabrication Center

ECCE 168



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The Laboratory Building

Electronics Center & Electronics Fabrication Center

The Electronics Center..

Here, you'll find:

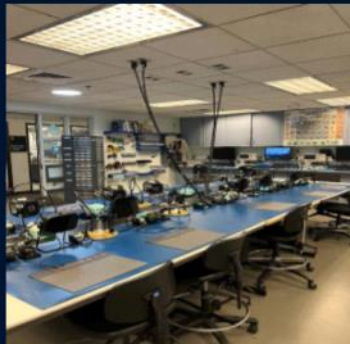
- Soldering irons
- Sensors and DAQs
- Desktop Testing Equipment
- Free Parts

Includes the offices of:



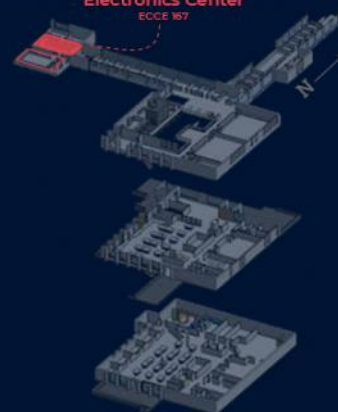
Viri
Varela

Nora
Splicher



Electronics Center

ECCE 167



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The Laboratory Building

The Project Depot & Open Work Areas

Project

Here, you'll

- Power tools
- Hand tools
- Sewing / Le
- A few solder
- Specialty eq
- check out
- Lots of work

Includes th



Nalasha
Duellette

Penzkover



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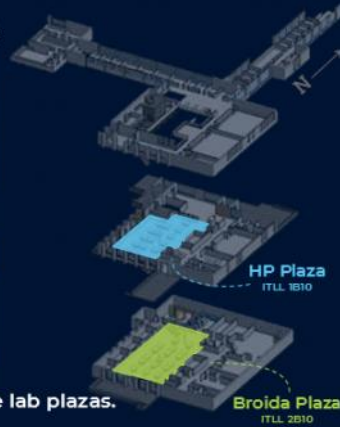
The Laboratory Building

Lab Plazas

Computer Workstations and Desktop Testing equipment



*Available for independent use when no classes are in the lab plazas.



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Equipment & Software



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Contents

- Manufacturing Tools
- Sensors & DAQs
- Software



Equipment

Sensors & DAQs for Checkout



Vernier
MEASURE. ANALYZE. LEARN.™

**NATIONAL
INSTRUMENTS**



Viri

Equipment & Tools:

- Sensors
- Instrumentation
- Data Acquisition Devices

Examples:

- Labview
- Vernier
- Embedded devices
- Thermometers
- Strain Gauges
- Accelerometers
- Load Cells
- The list goes on...

Go to itll.link/checkout to see all of our sensors available for checkout!

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Equipment

Materials Testing



MTS



Kat



Rachel

Equipment & Tools:

- MTS machines
- Torsion machines
- Vibration equipment
- Hardness Testers

Examples:

- Tension
- Compression
- Flexure
- Torsion
- Vibration
- Hardness

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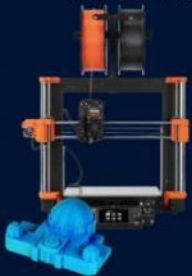


Equipment

3D Printers

Access
Required

Prusa
Self-Service



Objet
Staff-Run



Markforged
Staff-Run



Kat

Equipment and Tools:

- Self-Service
20x Prusa Mk 4
- Staff-Run:
3x Markforged Onyx Pro
1x Objet Pro 30

Cost for Material:

- For Self-Service Printers:
Material is free after
completing the new
workshop
- For Staff Run Printers:
Pay per print through
lab request system

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Equipment

Laser Cutters/Engravers Minis & Pros

Access
Required



Natasha

Equipment and Tools:

- 3x Epilog Fusion Pro (ITL 2BOS)
- 2x Epilog Mini (ITL Launch Point)

Material

- Pro Machines: 36"x24"
- Mini Machines: 18"x12"
- Up to 1/4" thick
- Purchase acrylic at:
 - ITLL (18"x12"x1/8" clear only, \$5)
 - McGuckin Hardware
 - Colorado Plastics
 - Home Depot
- Cardboard tool
- Anything else? Ask us first!

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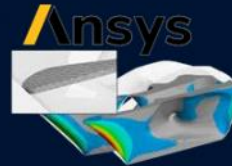


Software

Licenses & Cloud-Computing



CEAS Cloud
Computing Solution
ceas.link/cloudcomputing



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15+ Skill-Building Workshops

ITLL Tour Required for Sign-Up

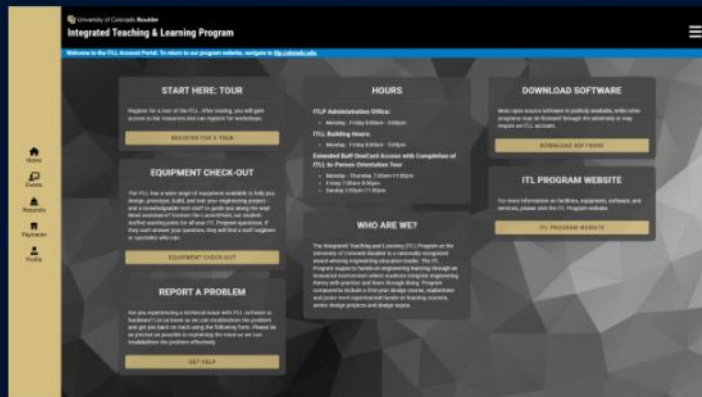


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New Website

ITLL Tour Required for Sign-Up



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Your First Visit Checklist



Contents

- Take the Tour for Access!
- Talk to an Engineering Support Student (navy vests!)
- Meet an ITLP Engineer



Have questions,
but don't know who you are
looking for?

<https://itlp.colorado.edu/>

Contacts Us



Atlas

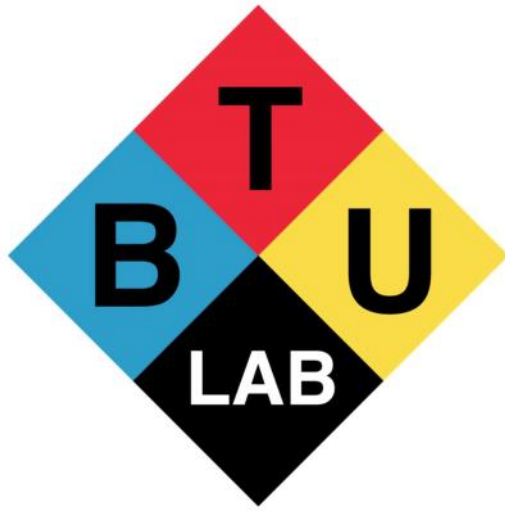
BTU = Blow Things Up Lab

Zack Weaver, Asst. Teaching Professor

https://nam10.safelinks.protection.outlook.com/?url=https%3A%2F%2Fdocs.google.com%2Fpresentation%2Fd%2F1eNdyVAFyGktQgy7u3swoc579ultC0nkuTvN03rQ4c%2Fedit%3Fusp%3Dsharing_eil%26ts%3D6793ca87&data=05%7C02%7Cclean.hertzberg%40colorado.edu%7Cecb2ed9beb8e4267f08208dd3c9a9b15%7C3ded8b1b070d462982e4c0b019f46057%7C1%7C0%7C638733356930003442%7CUnknown%7CTWFpbGZsb3d8eyJFbXB0eU1hcGkiOnRvdiJlYiOiJlLiAuMDAwMCIsIlAiOiJXaW4zMlslkF0ljoIiWFpbCIsldUljovfQ%3D%3D%7C0%7C7C%7C7C&sdata=P1%2F7uLwd%2FXKuP21%2Fvds3FvdKVir58oCC%2FtnjOT37i%3D&reserved=0



BTU_vTour



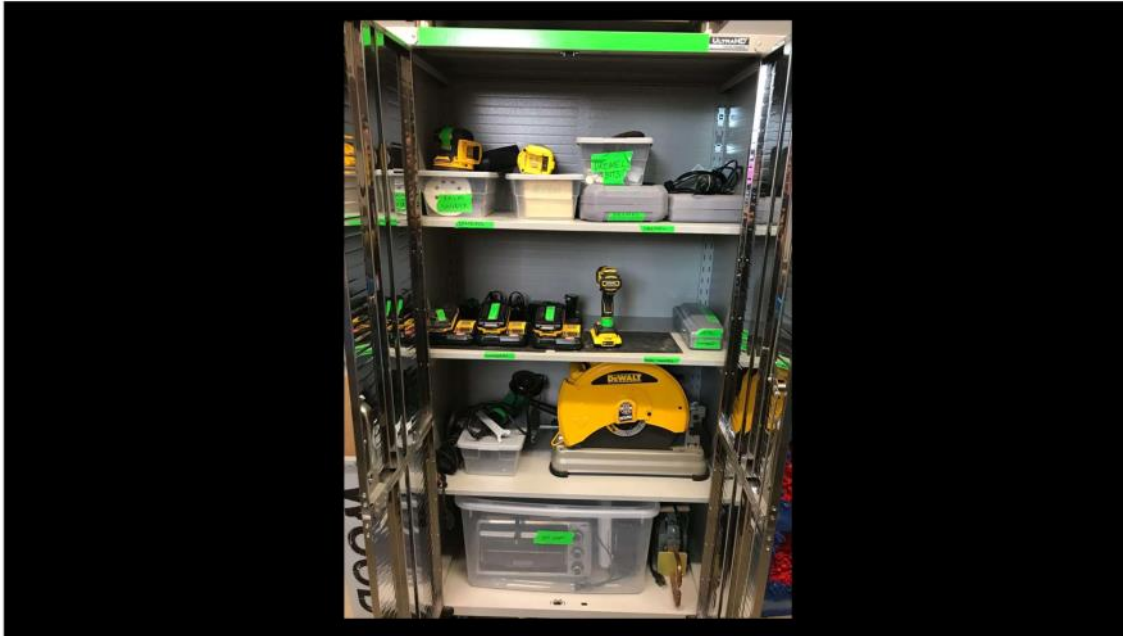










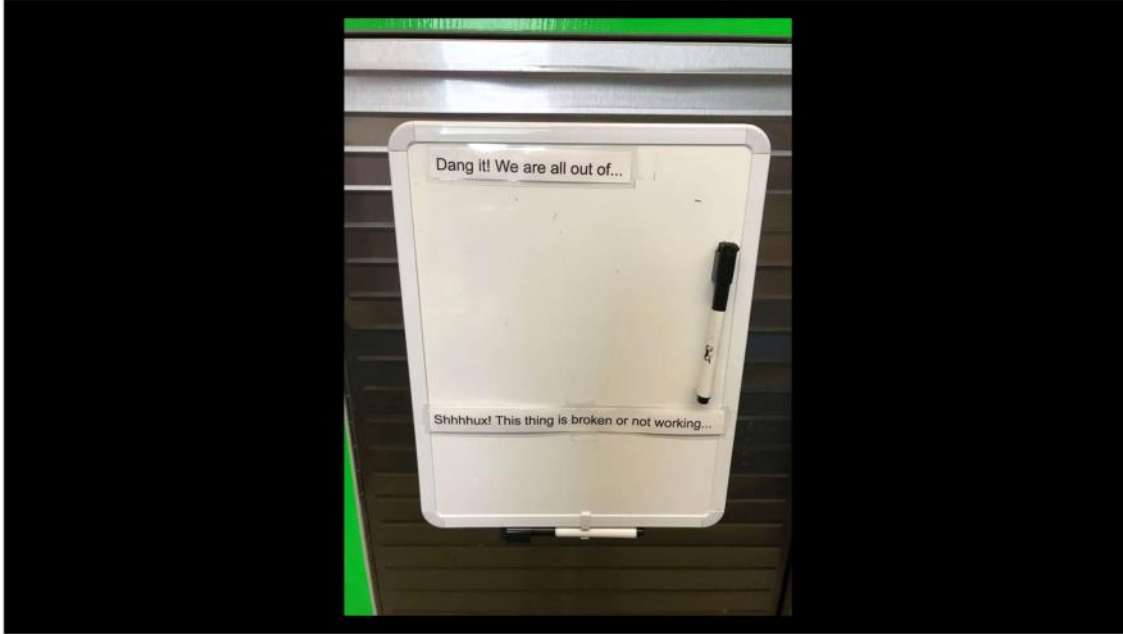






BTU Home



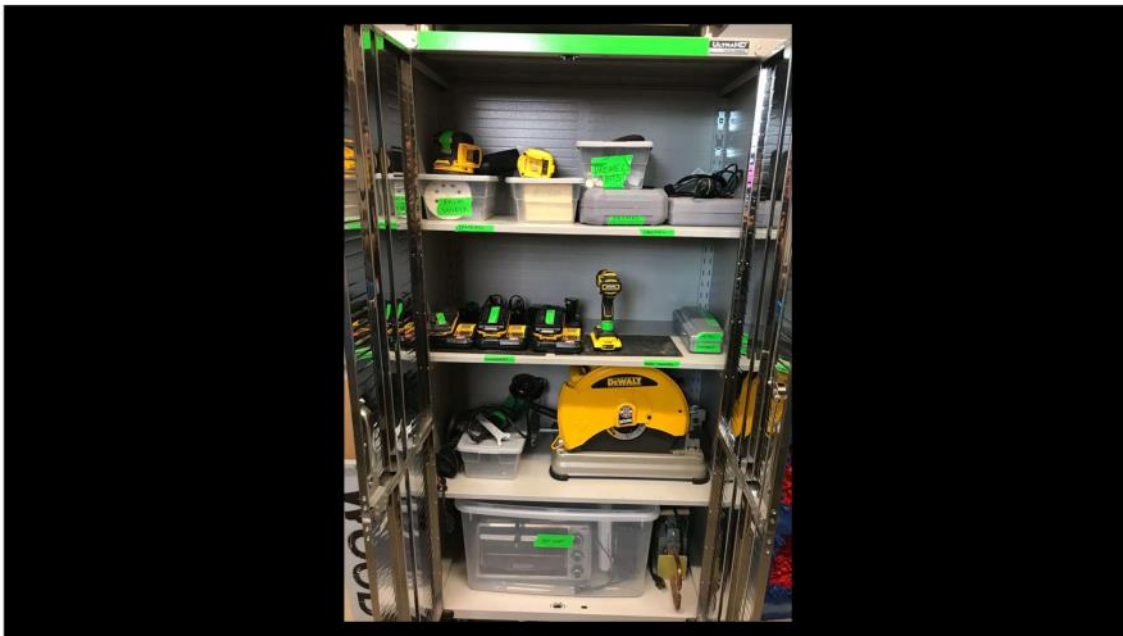
















[Home](#)
[Tools](#)
[Wood Shop](#)
[Sewing & Textiles](#)
[Electronics](#)
[Lasers!](#)
[3D Printers](#)
[CNC](#)
[BTU Lab Calendar](#)
[BTU Mischief Makers](#)
[Lab Rules & Policies](#)
[More](#)

RULES

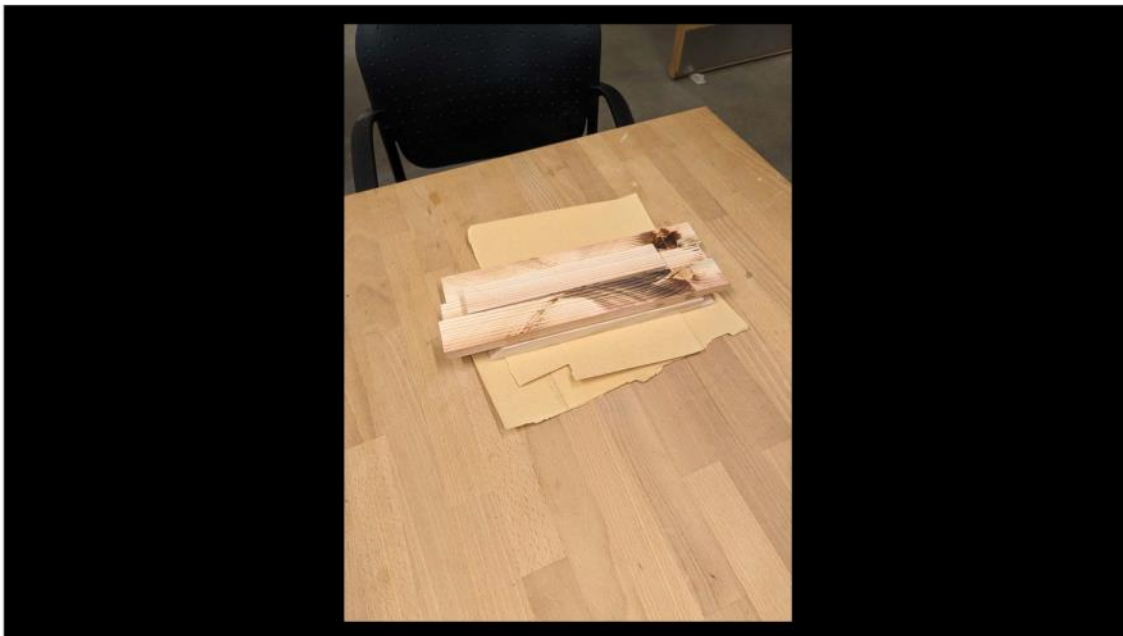
1. BE COOL*

* SOME ways to not be "COOL"

- Disrespect others, their space, or their work.
- NOT observing **safety** for you, others, and equipment.
- NOT report problems with **equipment**.
- Use slang speech OR pop culture as an excuse for denigrating people identifying with a race, age group, gender, sexual orientation, physical ability, etc.
- NOT report taking the last "_____".
- Remove **any** tools or materials from the lab without staff approval.
- Hot glue, cut, paint, whatever, directly on work surfaces.
- Leave **anything** on a common work area.
- NOT put things back where they belong.

- Ignore anyone not being cool.
- Leave scraps of material on a common work area.
- Leave scraps of material on the floor.
- Leave useless stuff in materials storage.
- Use equipment in a way other than intended.
- Use equipment you are not trained on/ approved to use.
- Leave **anything** on a common work area.
- NOT put things back where they belong.
- Anything else, not listed here, that negatively affects the BTU, ATLAS, CU, and EARTH community. Please, do not make us make a rule.

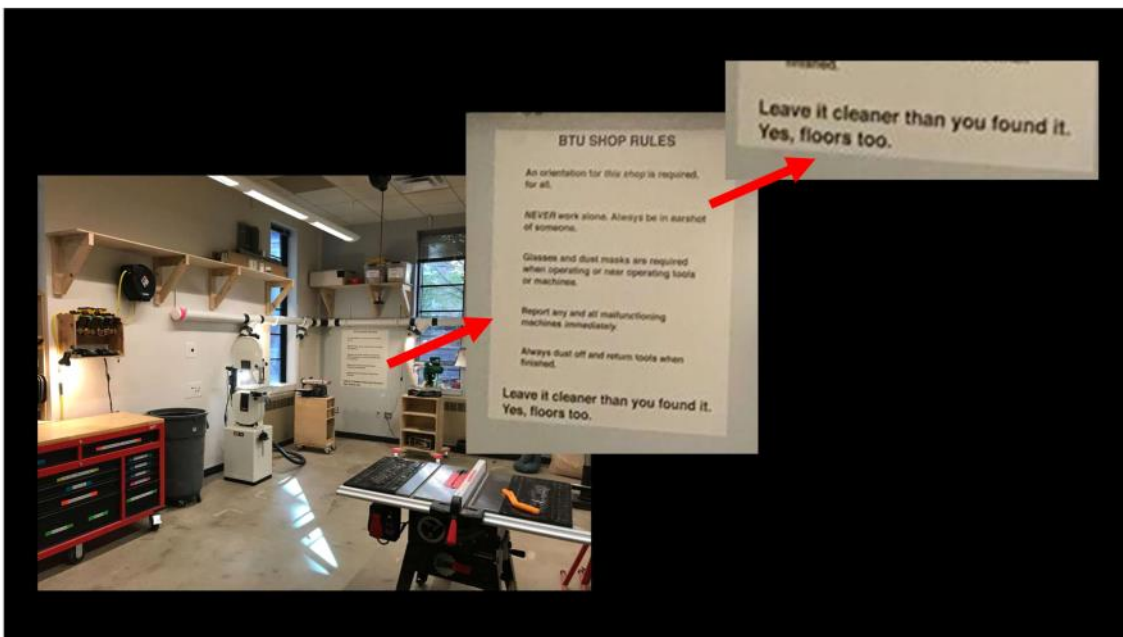














BTU Home