

A proposal for a Vocational Training Center for Aerospace, CNC Machining, Radio & Robotics in Columbia County; through a Public Private Partnership

Columbia County Maker Space



**Creating a Public Training Center
Focused on Technology**

Founding Sponsor



Columbia County Makerspace, Inc
240 NE Laguna Drive, Lake City Fl. 32055
Telephone: 561-389-1490
www.columbiacountymakerspace.org

Makerspace

A **Makerspace** is a community-operated, often "not for profit" 501(c)(3), **workspace where people with common interests**, such as computers, machining, technology, science, digital art, or electronic art, **can meet, socialize, and collaborate.**

In Other Words ...

A Community Electronics Resource Center

A place where anyone with a desire to “**Create**” can gain access to a wood shop, machine shop, electronics lab, computer graphics work stations, Computer Programming classes, 3-D printers, conference room. Tools and work spaces that promote Technology and trade skills.

Website: columbiacountymakerspace.org

Email: columbiacountymakerspace@outlook.com

What Will We Teach?

Aerospace

Drones

Job Skills

Robotics

WoodWorking

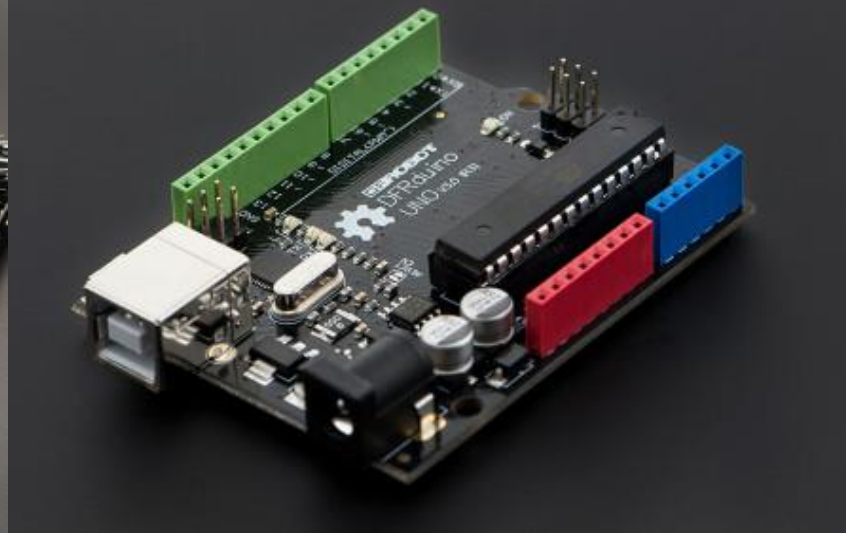
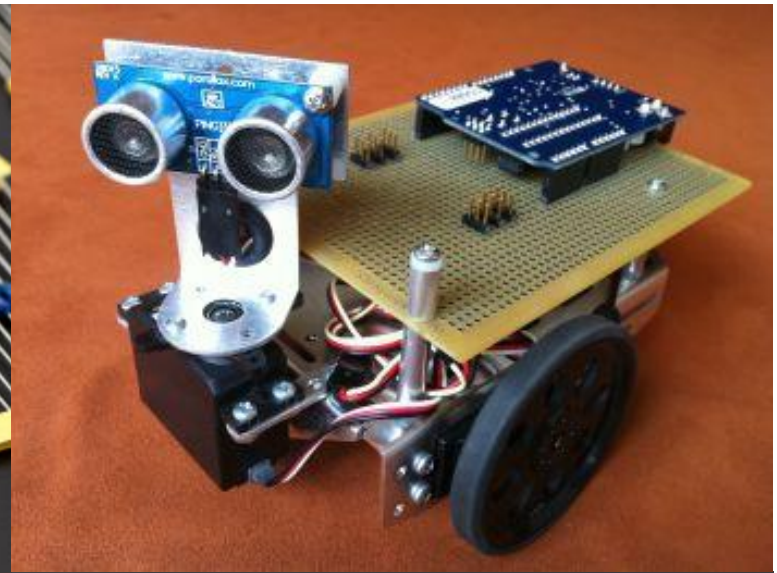
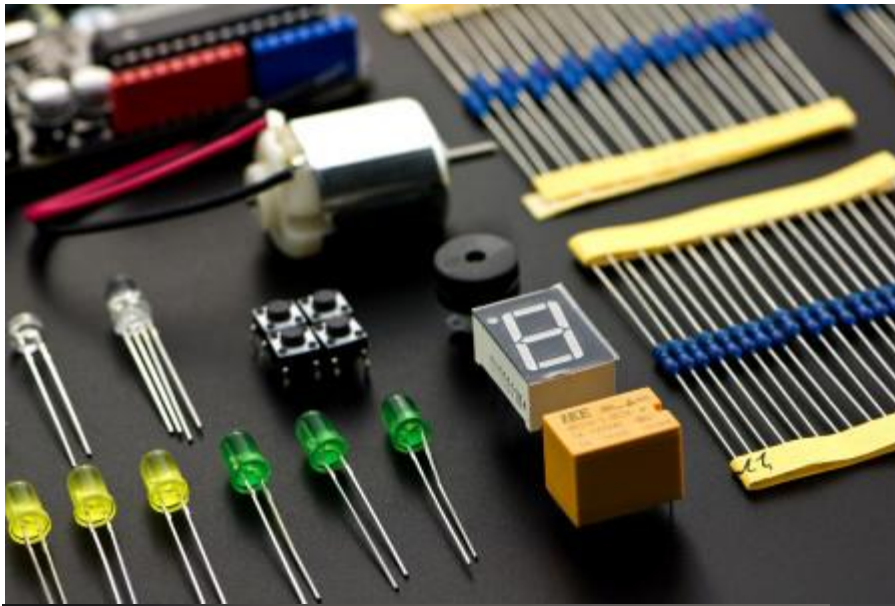
Coding

Radio

Welding

3D Modeling

Safety



And a Lot of Electronics Classes on topics like Arduino, Raspberry Pi, Flight Controllers and all of the cool accessories you can control with them over **IoT**.

Smart cities

- Water distribution
- Waste management



Energy engagement

- Grid automation
- Wireless grid communication



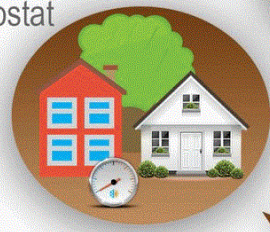
Wearables

- Smart watches
- Fitness and activity monitor



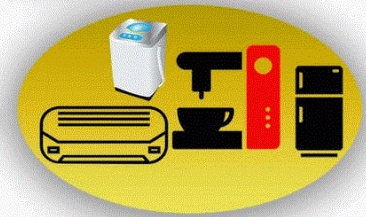
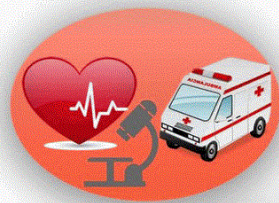
Smart homes

- Smart door lock
- Smart bulbs
- Smart thermostat



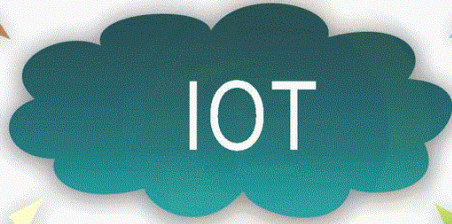
Health care

- Heart rate and blood pressure monitor



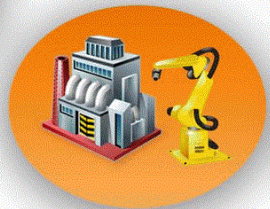
Home appliances

- Refrigerator
- Coffee maker
- Air conditioner
- Water heater



Transportation

- Traffic management
- IOT makes easy parking
- Vehicle location monitoring



Smart manufacturing

- Industrial communication
- Production flow monitoring
- Improve field service scheduling



Cars

- Automotive cars
- Engine management



Agriculture

- Smart farming
- Climate monitoring and forecasting
- Crop monitoring

Vocational Training & Benefits

- Creates Workforce Development Training Resource with Current Trade skills emphasized
- Draw technology minded people to visit, attend fairs, classes, lectures, etc. (Multi County range)
- Creates a Community Tech Center where positive role models will help mentor youth and adults. Training on current technologies.
- Dual enrollment with Colleges, technical Institutes means we can offer certifications and Pathways...
- “Do Good” Social engineering projects for the Community, like (<http://enablingthefuture.org/>)

Important to NOTE

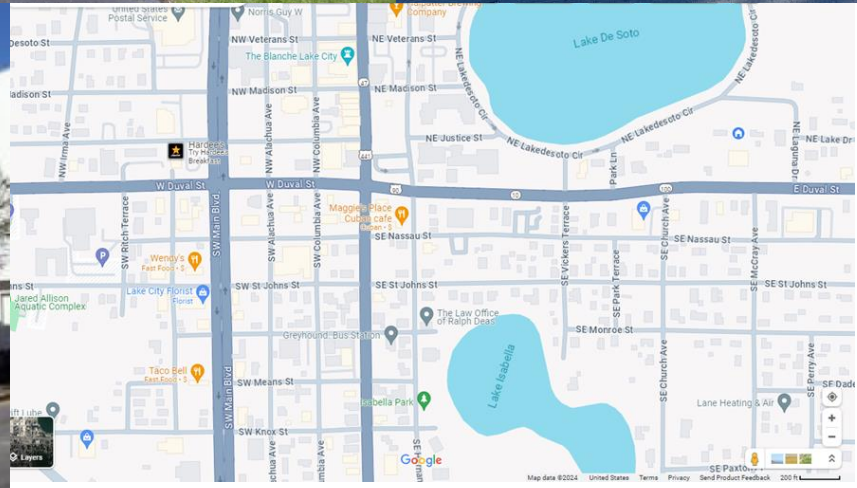
- This Public- Private business model will **require** at least **2 years** upfront of **Free Rent** from somewhere. (Gov't owned building? Donated space by a generous land owner? subsidized by government or philanthropic grants...?)
- After a couple of years, the membership subscription model with fees for classes, and use of facilities, should support the cost of continuing to rent or service a mortgage on the Building.

Finding the right location

- Finding a Location (Building with suitable parking)
- (a) Should it be inside City Limits? Near Industry, Central Business District or Revitalization?
- (b) Financed privately, or philanthropically? City or County Owned property? Leased?
- (c) Can the location grow into 10-20,000 s.f. or be coupled to another property?
- (d) Can the location eventually be **granted to or purchased outright by the Makerspace 501(c)(3)**
- Easy Access, safe neighborhood, good lighting.

What Kind of Building?

A Warehouse Building, Bank or Storefront, Freestanding Commercial?



Hosts, Campuses & Remote Locations

- *We won't keep all our eggs in one basket.*
- We plan to have a central facility for our offices and many of the advanced programs like Robotics and Aerospace.
- We may utilize other Host sites, campuses and auditoriums to teach programming classes and hold large meetings or functions.
- We may also meet at other locations when utilizing shortwave Radio or RC devices, etc.

What would an Ideal Location Look Like?

Near CBD, Safe
Secure, Split
the 11,000 s.f.
into County
Offices on West

We would use
East side for
computer labs,
Aerospace,
Advanced
Manufacturing,
Robotics, etc.

An Ideal Location
Might be the old
Lake City Reporter Building
at 180 East Duval Street



The East half of old LCR Building is large enough to house an Industrial Machine Shop, etc. Plus loading dock in rear, separate parking on East side makes the Makerspace a way to maximize the potential of this industrial Building.

What We Will Put Inside!



CNC (Computer Numerical Control)

- Automated control of machining tools (such as drills, lathes, mills, grinders, routers and 3D printers) by means of a computer.
- CNC Milling - Great with Metals
- CNC Routing - great with Wood



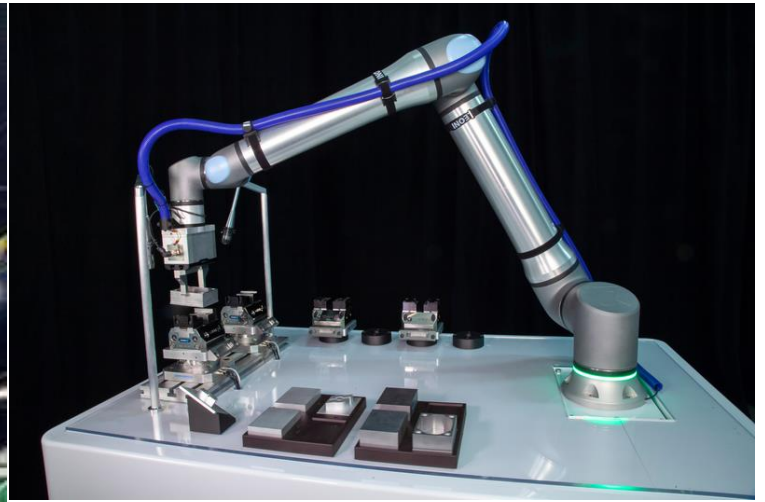
\$20K Each

\$15K

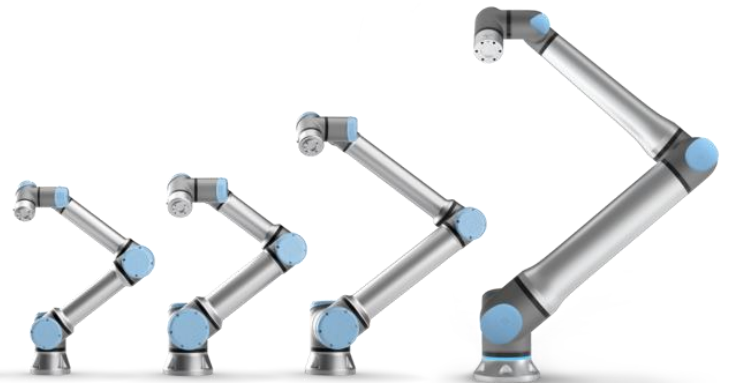


Laser cutter for cutting wood, metal, plastic sheets into custom designs

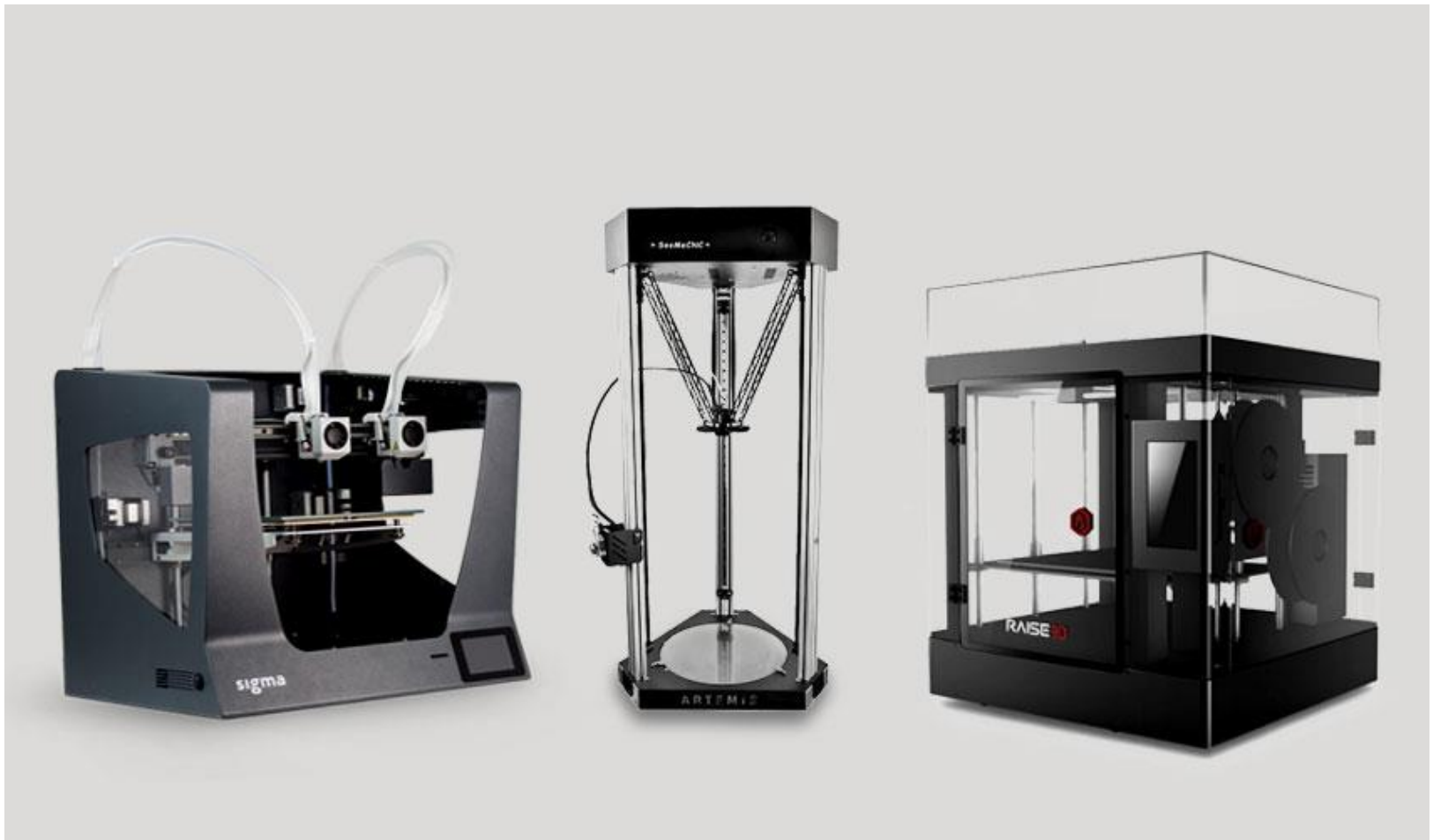




Robotic Arms range in cost from \$5- 50K plus accessories like grippers, welders, drills or riveters, etc.

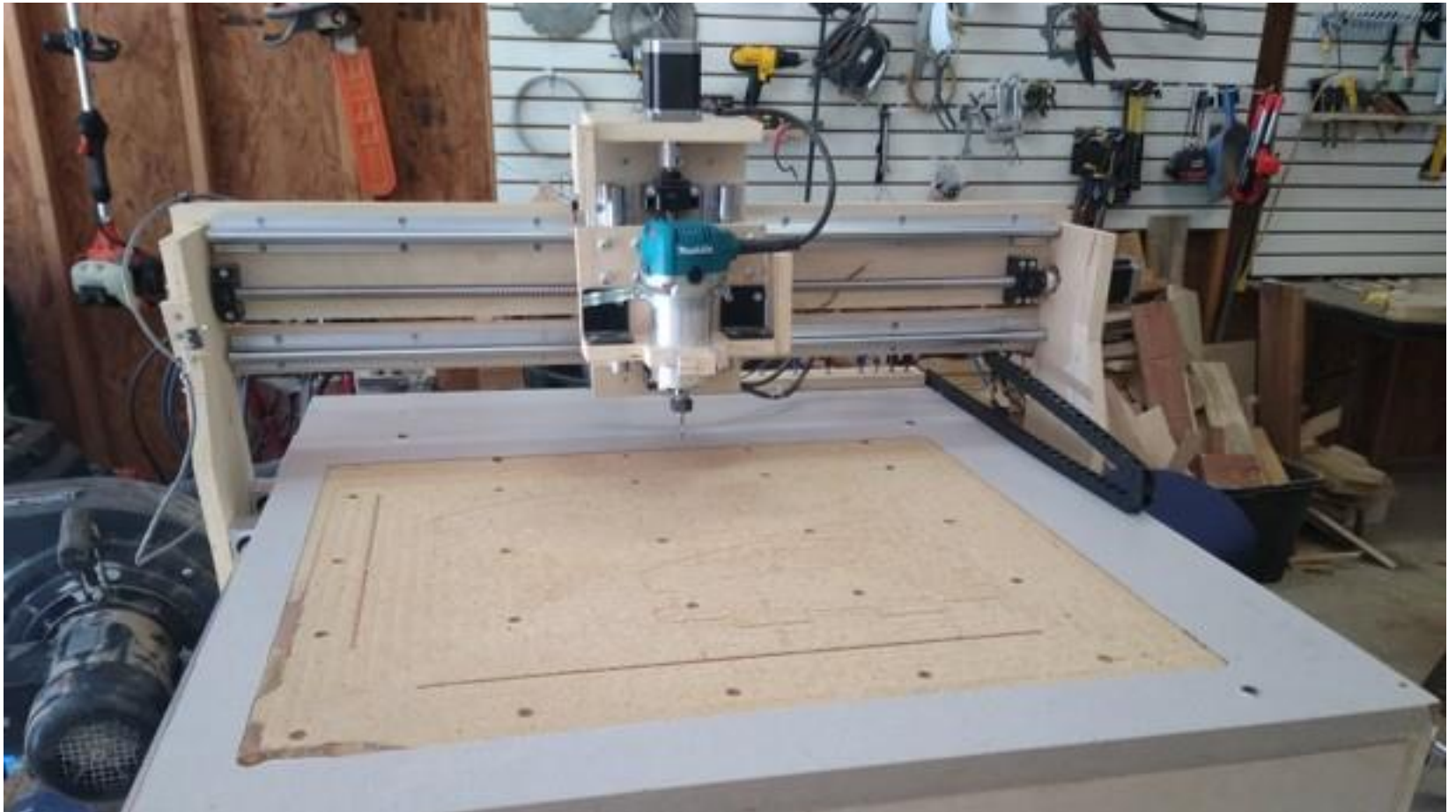


3D Printers \$500- \$5,000 ea



Self Taught & Opensource

Building some of our own equipment, by using opensource plans and technology will ensure that our members learn more and save \$\$\$





Radio Technology



- Learning Lab for Ham Radio and Amateur Radio use, fabrication and repair.
- FRC and Hand Held Radio Programming
- Learning lab for Radio Controls used on planes, drones, boats and buggies.
- Broadcast technology and FCC compliance
- Satellite and Cellular Radio Technology uses.

Computers & Graphic Workstations



How It First Gets Financed

- Seek Landlord for \$1/year, or one that will Donate rent to our Not-For-Profit in exchange for Tax deduction. **Later purchase or gift of the facility is desirable.** Otherwise, we will need a financial sponsor to rent a facility.
- Seek corporate grants, instructors and involvement, (Home Depot, Lowes, Walmart, Target, New Millenium, Manufactured Home Builders, FPL, and local Industries.)
- Seek Grants from Government and Private Foundations.
- Seek local philanthropy, both in the form of dollars, and in-kind services, like Electricians, Contractors, legal, accounting and marketing services, just to name a few.
- Seek Donations of building materials, office and warehouse furniture, industrial woodworking and metal working equipment, Welders, Radio Towers, Solar Power equipment, etc.
- Seek Money and resources, (Like Broadband access & Solar power), earmarked for education, targeted at rural communities or underserved communities, with programs aimed at open access to all. (Educational grants, private donations, scholarships, research partnerships, etc.)

Bottom Line = We need \$250K - \$500K Plus a Free Building to Start

Fees will generate funds for self sufficiency

- Membership Fees (e.g Monthly \$30 student, \$60 Adult, \$100 sponsoring member, etc.)
- Class fees (often reduced or free for members), Typically \$5 - \$25 per person + Materials
- Equipment rental fees (For qualified users), often \$80-\$100/ hour for industrial machines
- Special Event Fees or Camp fees for longer term classes (e.g. \$350 for an 8 week class ending with certification, that includes shop materials, equipment rent time, etc.)
- Facility Rental Fees for private Cubicles? (e.g \$75/month for a 5x10 secured area (Chain Link?))
- Instructor fees for one-on-one shop equipment instruction and certification. (e.g. \$250 for 8 hours of training on a laser cutting machine)

Community Outreach

- Local Radio station(s) will likely host a STEM radio show.
- Code Camps will draw corporate sponsors and tourism.
- Flea-Market events can be hosted like a Ham-Fest, by partnering with local Hams.
- Also partnering with Amateur Radio operators for Radio Certification, assembly of a radio tower, and a life safety network Ham Radio for use during emergencies would create a great Radio Learning Lab.
- Experimental Aircraft Association members could be great mentors to those wishing to learn to fly or repair drones or other aircraft.
- Private Schools and Homeschool parents can utilize the facility for STEM activities, studies and research.
- 4H and Scouting organizations also train on Technology, which our Makerspace would be ripe with options for collaboration with.
- Building a Solar Power Plant onsite will teach the basics of Solar, which can lead to employment and educational opportunities.

hi, tech.



meet pepper

join the movement

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Need a hand?

Robots for the real world

