

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

# Columbia County Maker Space



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

Founding Sponsor



Columbia County Makerspace, Inc  
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Telephone: 561-389-1490  
[www.columbiacountymakerspace.org](http://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](http://columbiacountymakerspace.org)**

**Email: [columbiacountymakerspace@outlook.com](mailto:columbiacountymakerspace@outlook.com)**

# What Will We Teach?

Aerospace

Drones

Job Skills

Robotics

WoodWorking

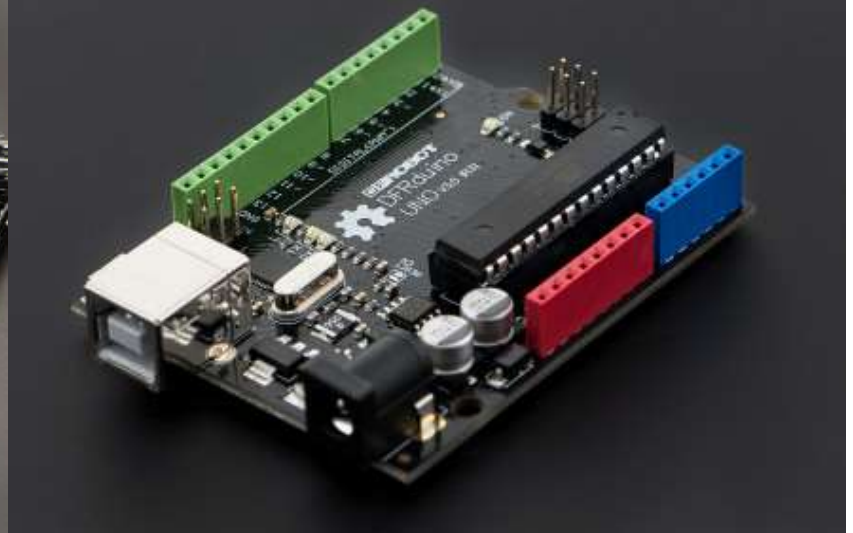
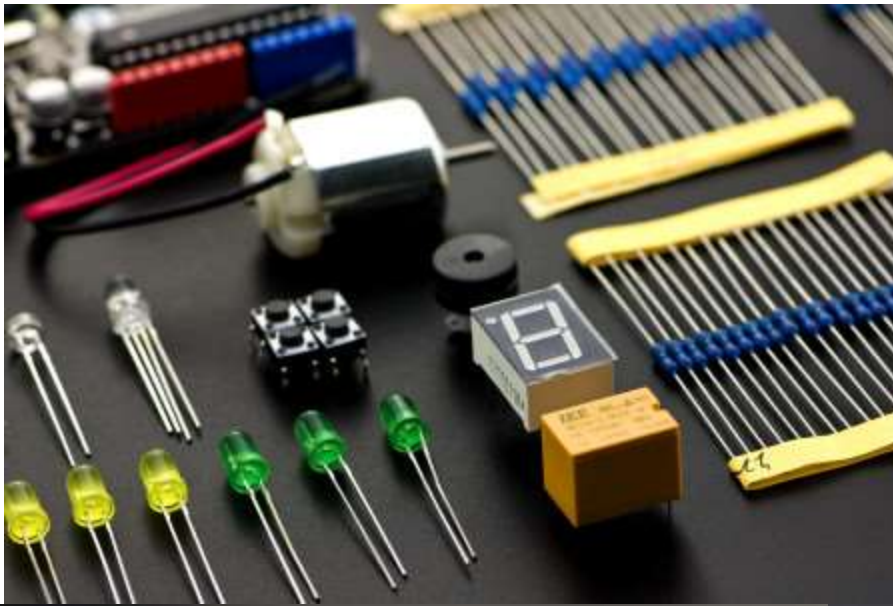
Coding

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, Single Family Home, 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 will utilize other Host sites, campuses and auditoriums to teach programming classes and hold large meetings or functions.
- We will also meet at other locations when utilizing shortwave Radio or RC devices, etc.

# What would an Ideal Location Look Like?



CBD Parking, Safe & Secure,  
3400s.f. for classes, computer  
labs etc.

An **Ideal Location** Might  
be the old Millenium Bank  
Building on Marion Avenue



The 1200 s.f. Building in back is large  
enough to house a woodworking shop,  
Machine Shop, etc. Plus added parking in  
rear.

# 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

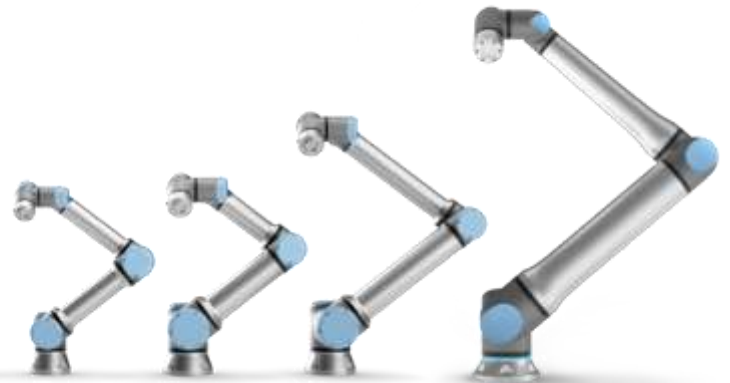


Laser cutter for cutting wood, metal, plastic sheets into custom designs





**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**

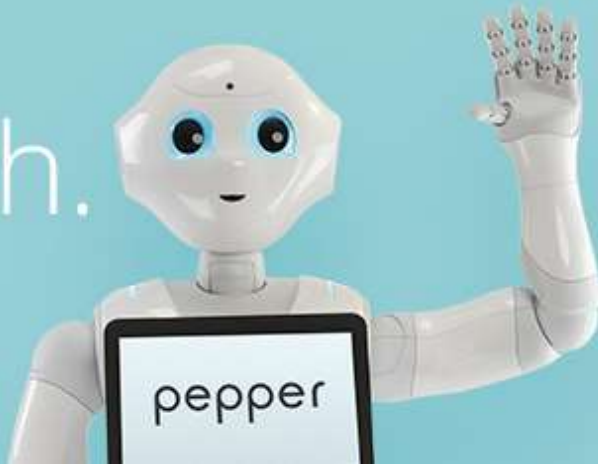
# **Fees will generate funds for self sufficiency**

- 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



TALK TO AN EXPERT

