

Pivot to the Third Industrial Revolution

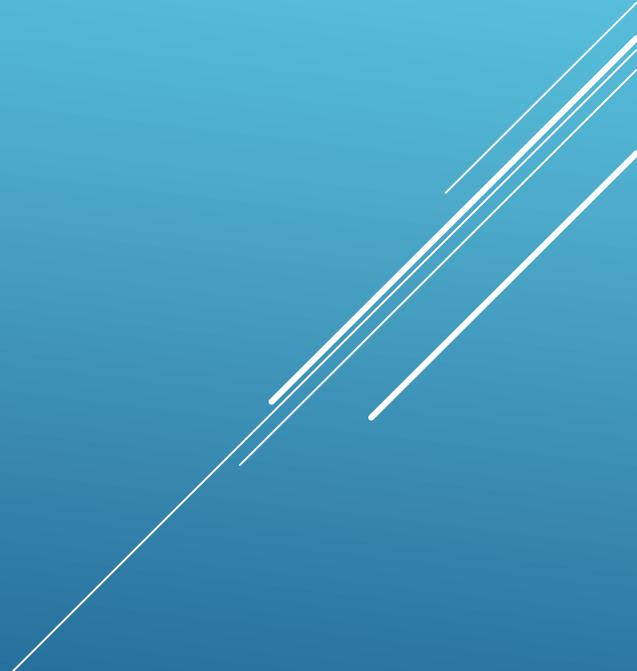
CREATING A MAKER
ECOSYSTEM IN YOUR CITY



Bernie Lynch
Strategic Development Solutions and Made Right Here

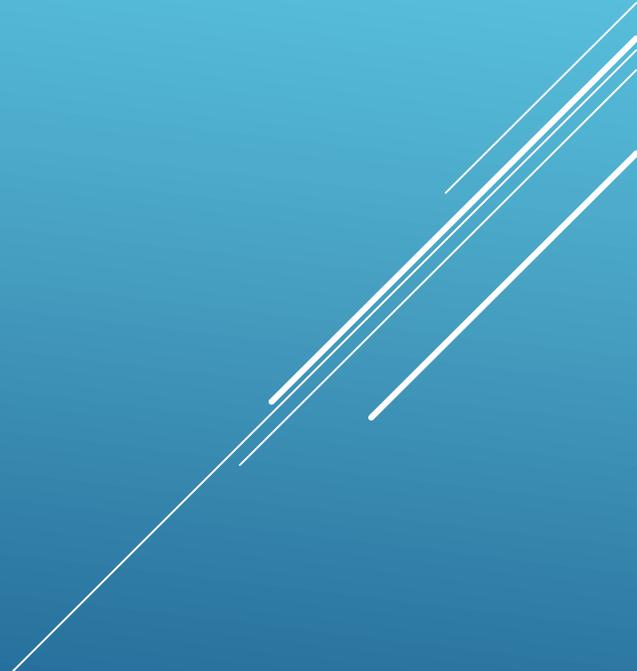
▶ Problem Statement:

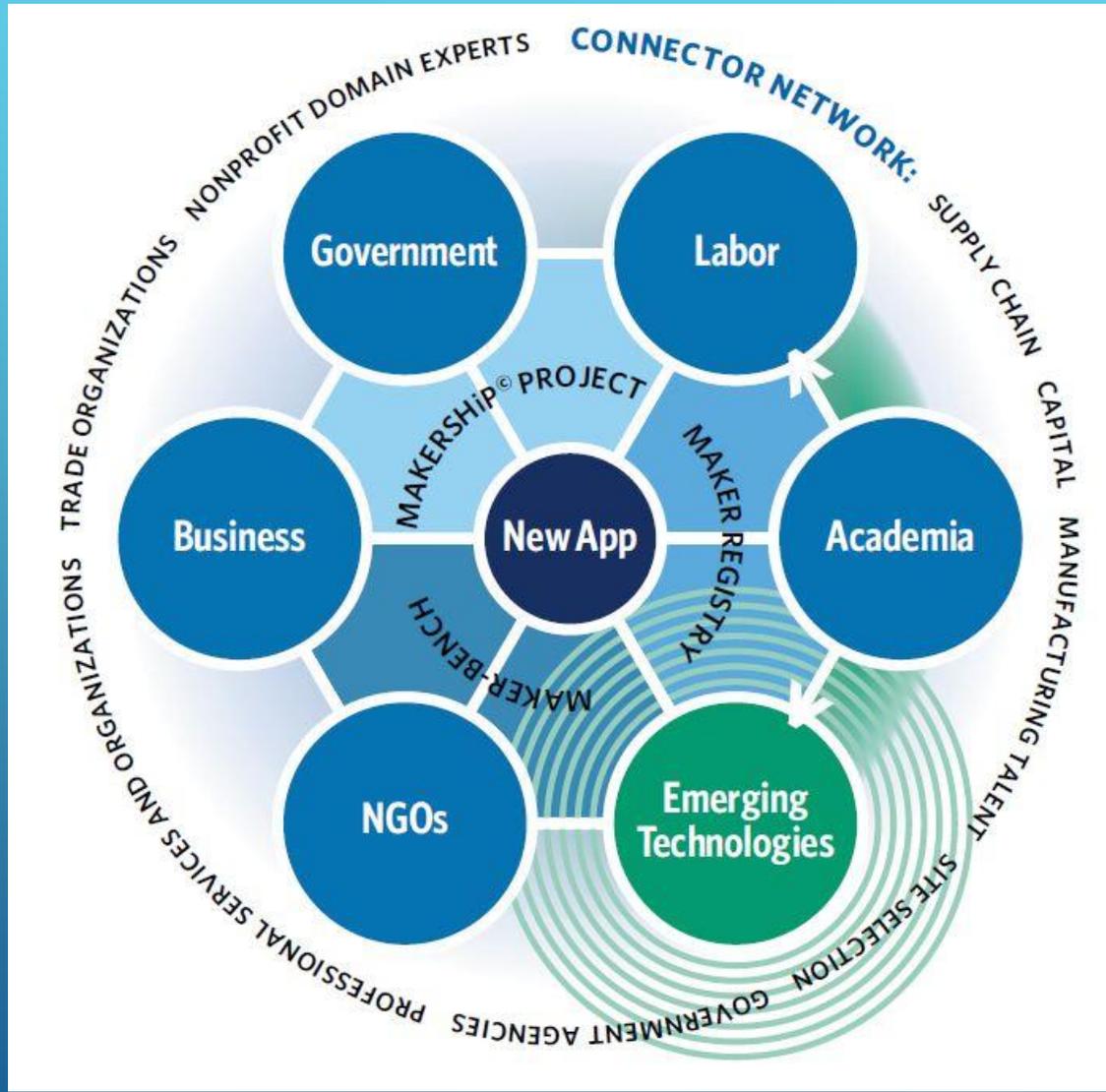
MADE IN CHINA

A decorative graphic consisting of several parallel white lines of varying lengths, slanted upwards from left to right, located in the bottom right corner of the slide.

DEVELOP A SYSTEMIC FRAMEWORK FOR START-UP
LOCAL AND DOMESTIC MANUFACTURING

Solution

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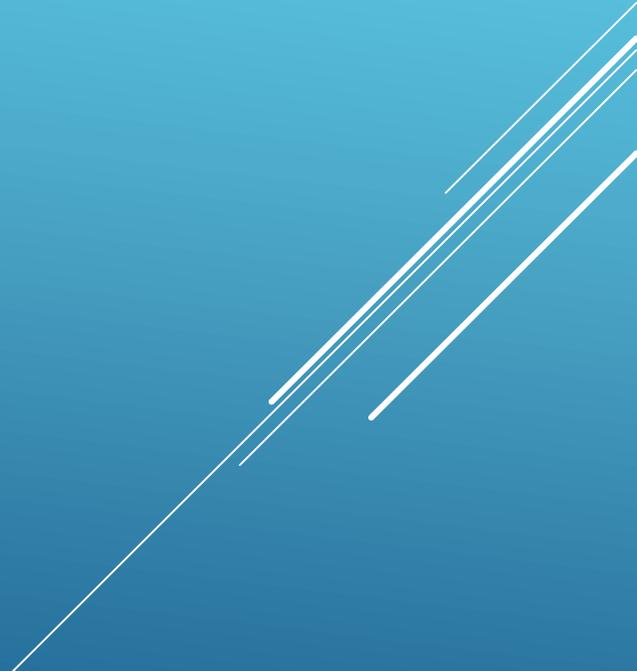
OUR SIX SECTOR
MODEL:

INVITE THE
VILLAGE

NEW
DISRUPTIONS
ARRIVING DAILY

- ▶ Intersect with the Maker Movement
- ▶ Operate in a Maker Space

OUR SECRET SAUCE

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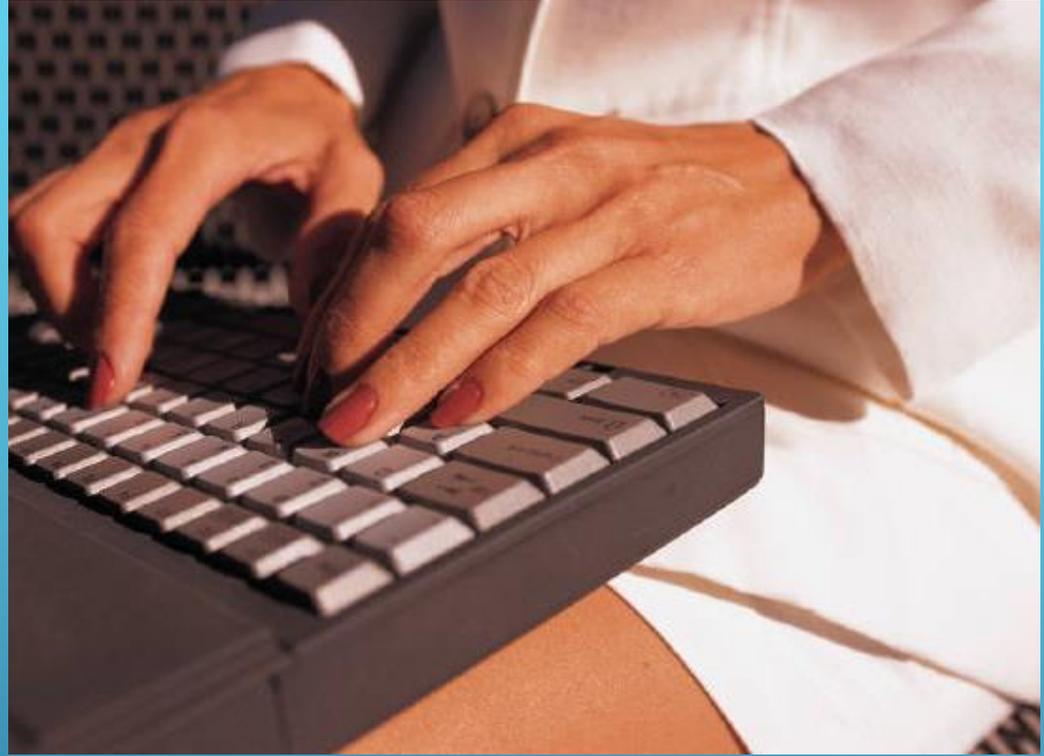
Hardware



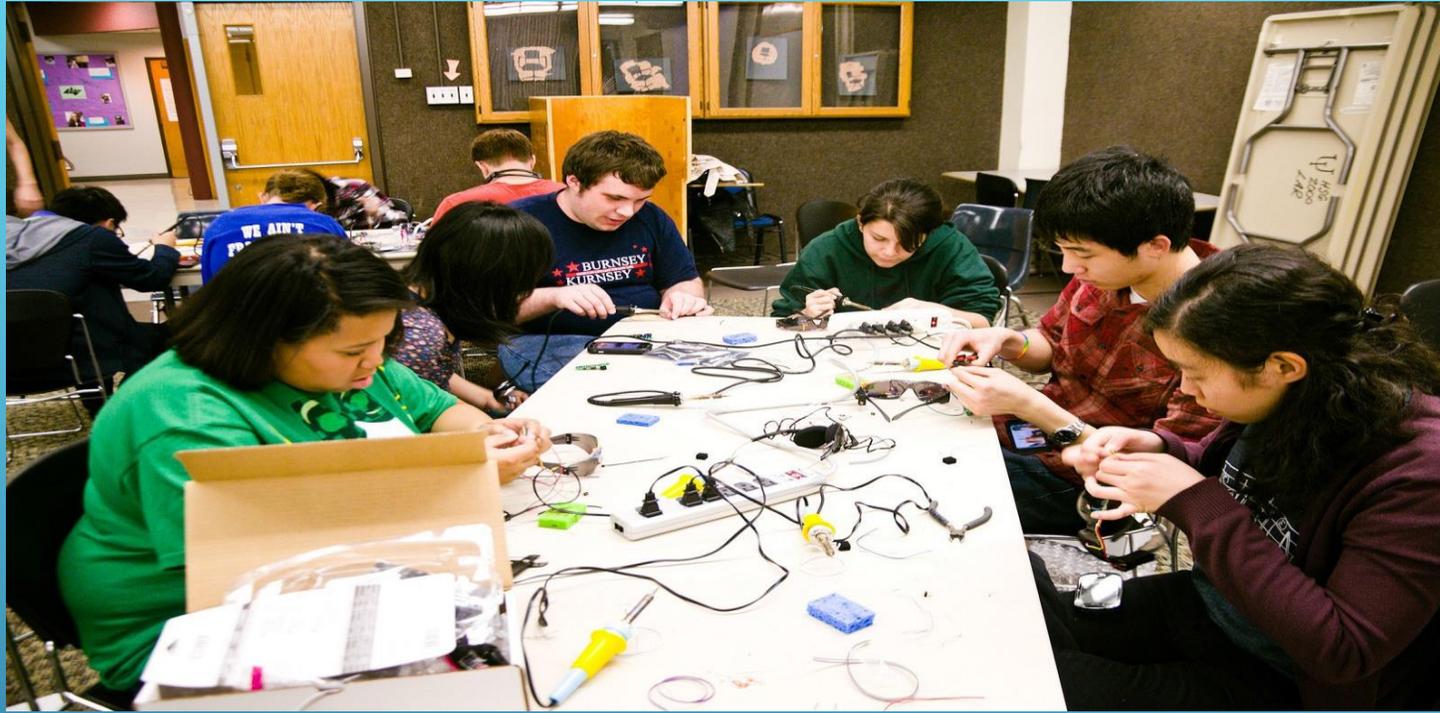
Software



TOOLS BOTH OLD AND NEW



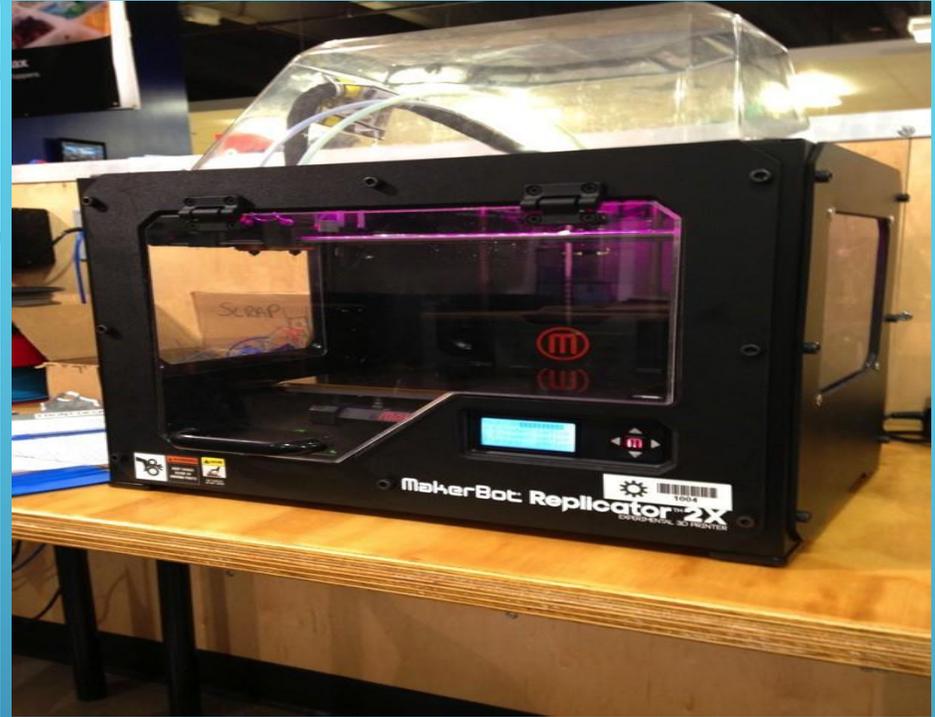
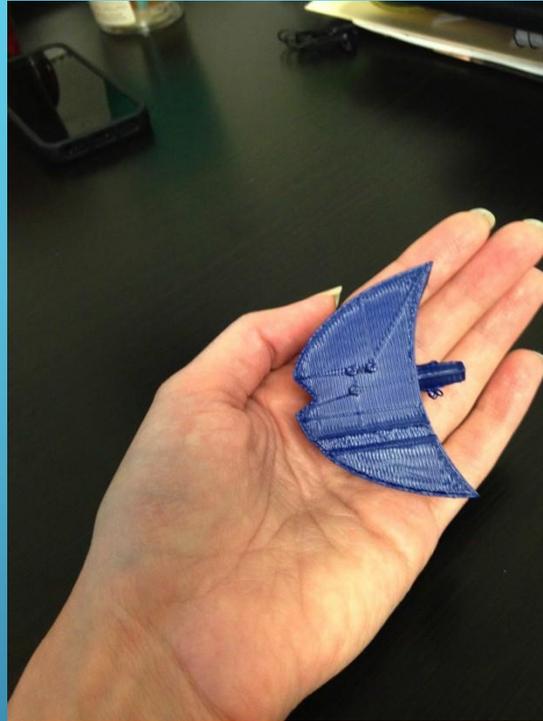
ANALOG AND DIGITAL



ELECTRONICS AND TEXTILES



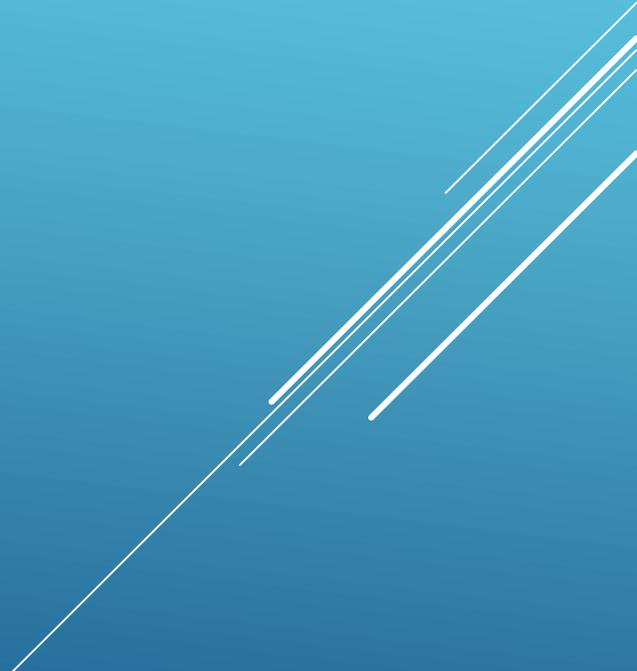
SOFTWARE TO WELDING



3D PRINTING AND CNC +/-

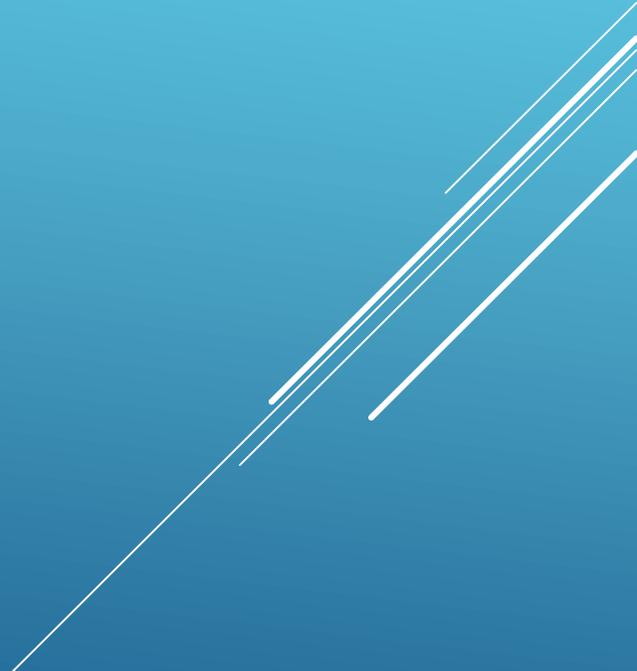
▶ MAKER SPACE IS THE HARDWARE

WE DEVELOPED THE NEW APP

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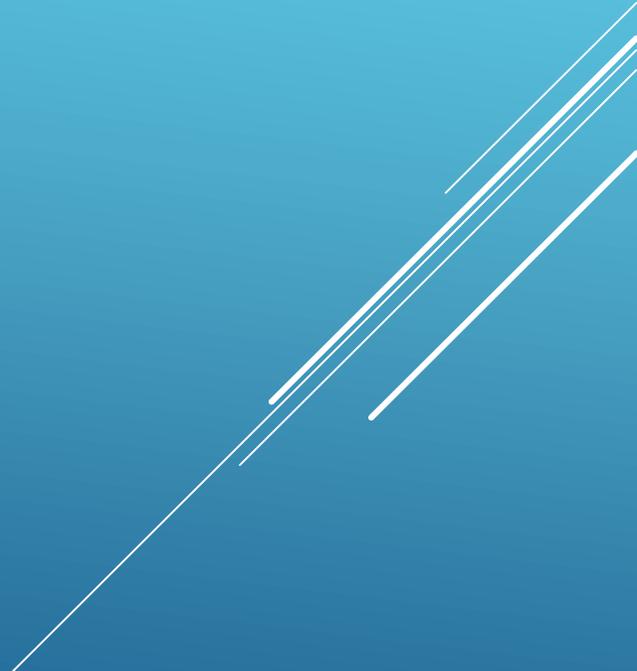
- ▶ START-UP PRODUCTION TRAINING
- ▶ START-UP PRODUCTION WORKER TRAINING: 1st 2nd 3rd hire
- ▶ US DOL REGISTERED APPRENTICESHIP: Maker Professional
- ▶ MAKER REGISTRY – www.MadeRightHere.me
- ▶ SOFTWARE FOR TRAINING – www.MadeRightHere.me

WE DEVELOPED THE OPERATING SYSTEM
FOR THE SYSTEMIC FRAMEWORK FOR
START-UP LOCAL AND DOMESTIC
MANUFACTURING



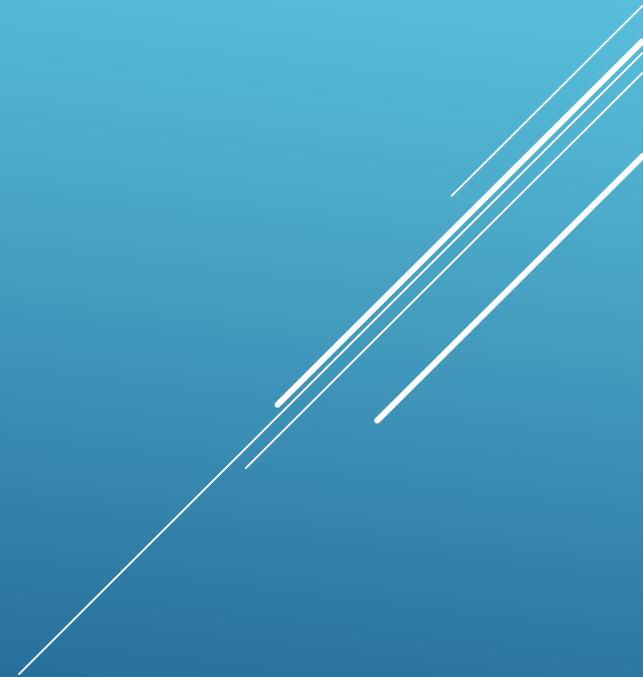
- ▶ PROTOCOL FOR THE MARKETPLACE – gap
Training, Funding, New Set of Questions
- ▶ BENCH OF WORKERS READY TO GO – TRAINED
- ▶ MATCHMAKING SYSTEM – Human and Virtual
- ▶ SPECIFICATION FOR MAKER SPACE Education, Workforce,
Economic Dev, Business Dev, Community Dev as intention

THE PARTS OF THE FRAMEWORK WE
DEVELOPED



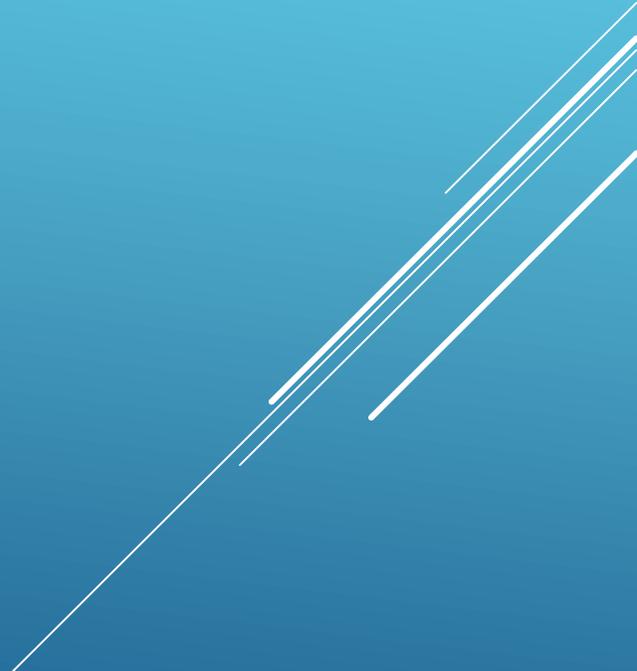
- ▶ Emerging Disruptive
- ▶ Industrial Revolution

MARKET



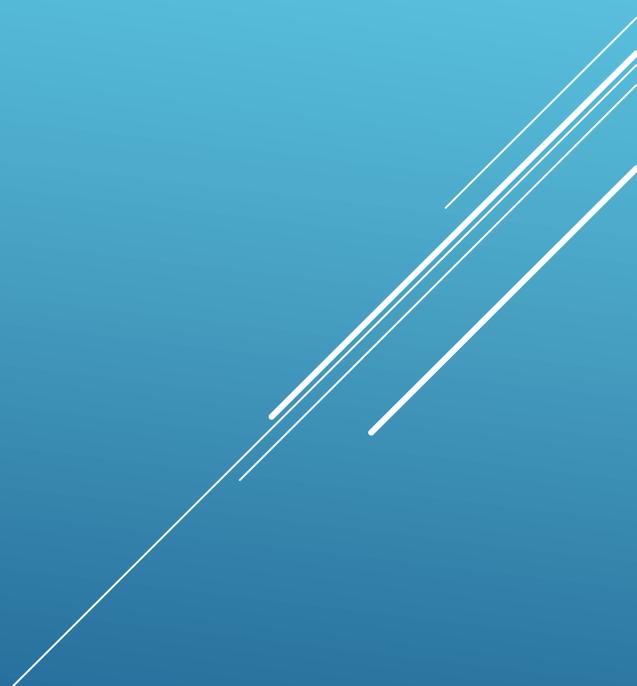
▶ \$57 Billion a Year by 2017*

MARKET

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- ▶ Small batch mass customization

MARKET



▶ Emerging – \$2000 Maker Space



DIGITAL MAKING

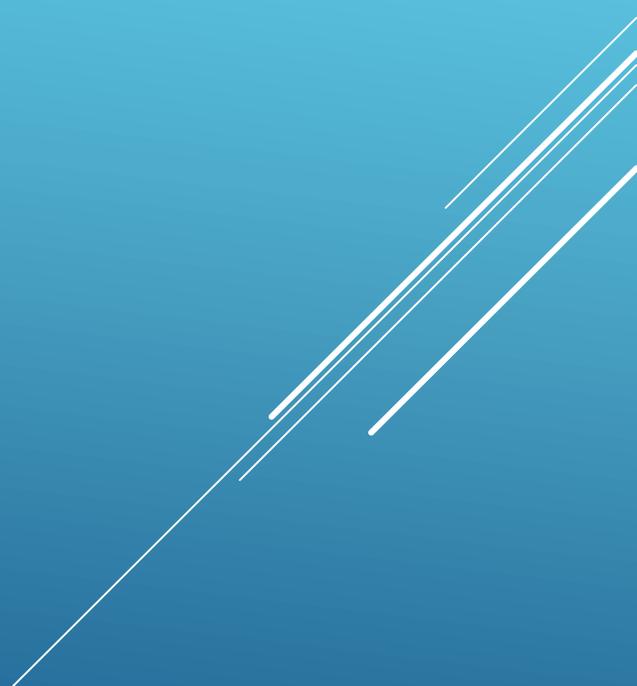


- ▶ It's a 3D Printer
- ▶ CNC Router
- ▶ Laser Etcher
- ▶ All for \$2000.
- ▶ Coming to a desktop near you.

THE DESKTOP MAKER SPACE

▶ Disruptive

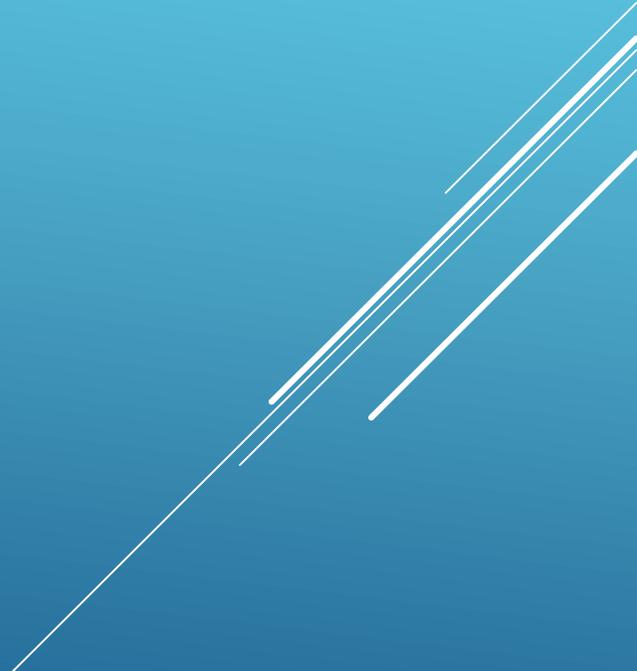
LIKE THE INTERNET WAS



▶ An Industrial Revolution



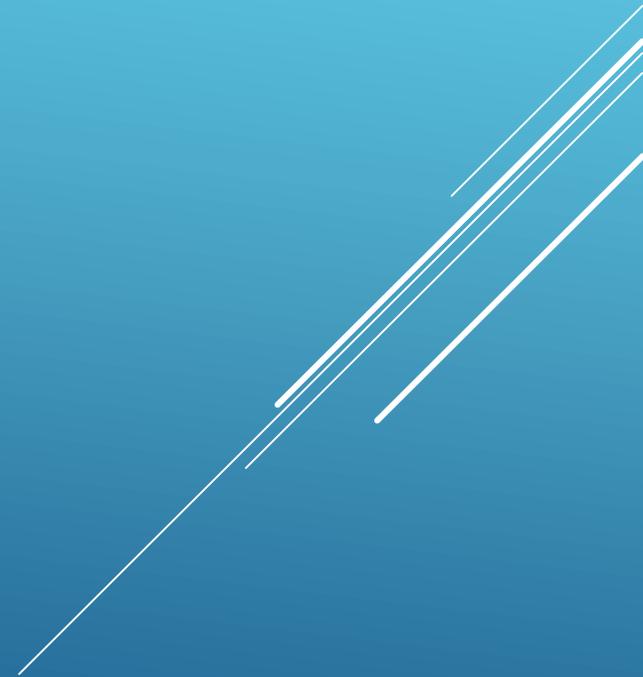
CHANGES MANY THINGS





NEW MATERIALS

For a new world



NEW WORK TOOLS

For new industries

STARTING YOUR OWN BUSINESS!

Be a 3D photographer and earn money with Shapify



S
1:20

M
1:15

L
1:12

Artec Group

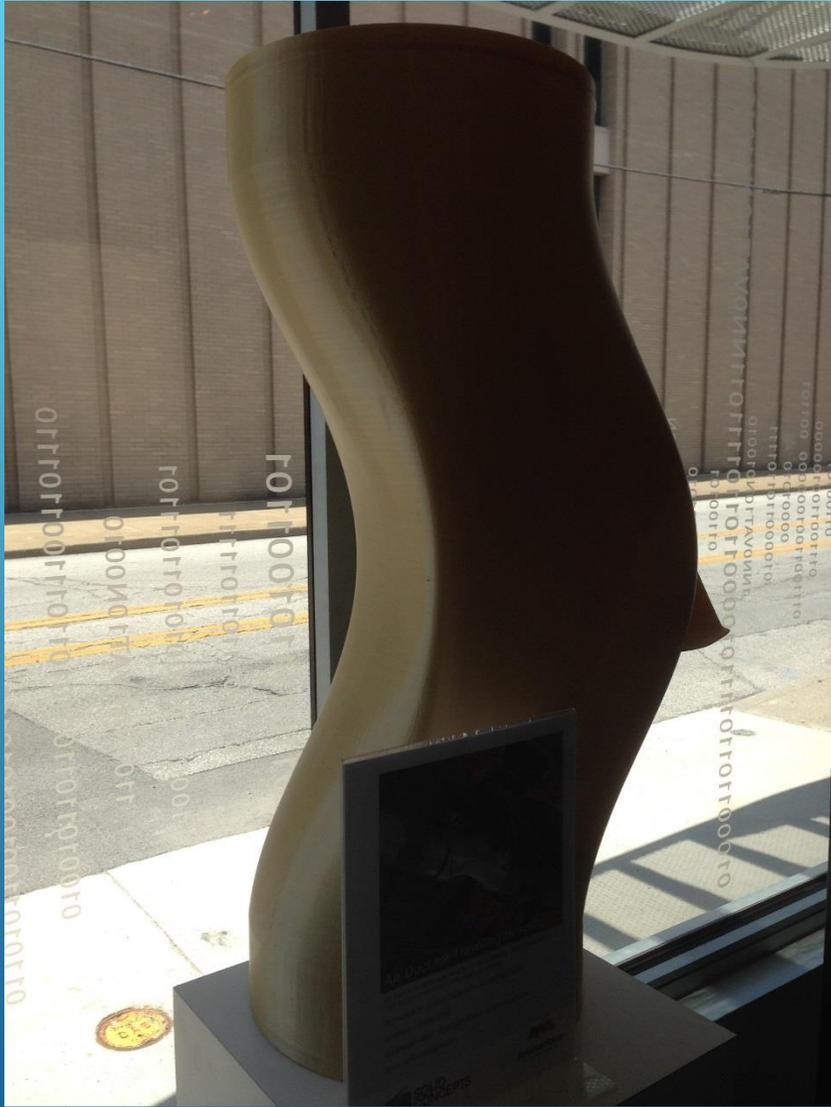
NEW TECHNOLOGY



OLD TECHNOLOGISTS

On board





NEW APPLICATIONS

Ductwork for an aircraft

Displayed at

America Makes in
Youngstown OH



NEW COMPANIES

FAB LAB

PLANNING GUIDE

*DDM - Direct Digital Manufacturing
with 3D Printers, Scanners, CNC Routers,
Plasma Cutters and Laser Engravers*



EQUIPMENT COMPANIES PREPARED



HEADLINES DAILY LEAD US HERE





ALCOA \$60M INVESTMENT

New 18,000 SF Additive Facility

<http://www.businessfinancenews.com/23905-alcoa-inc-why-the-company-is-entering-the-3d-printing-industry/>

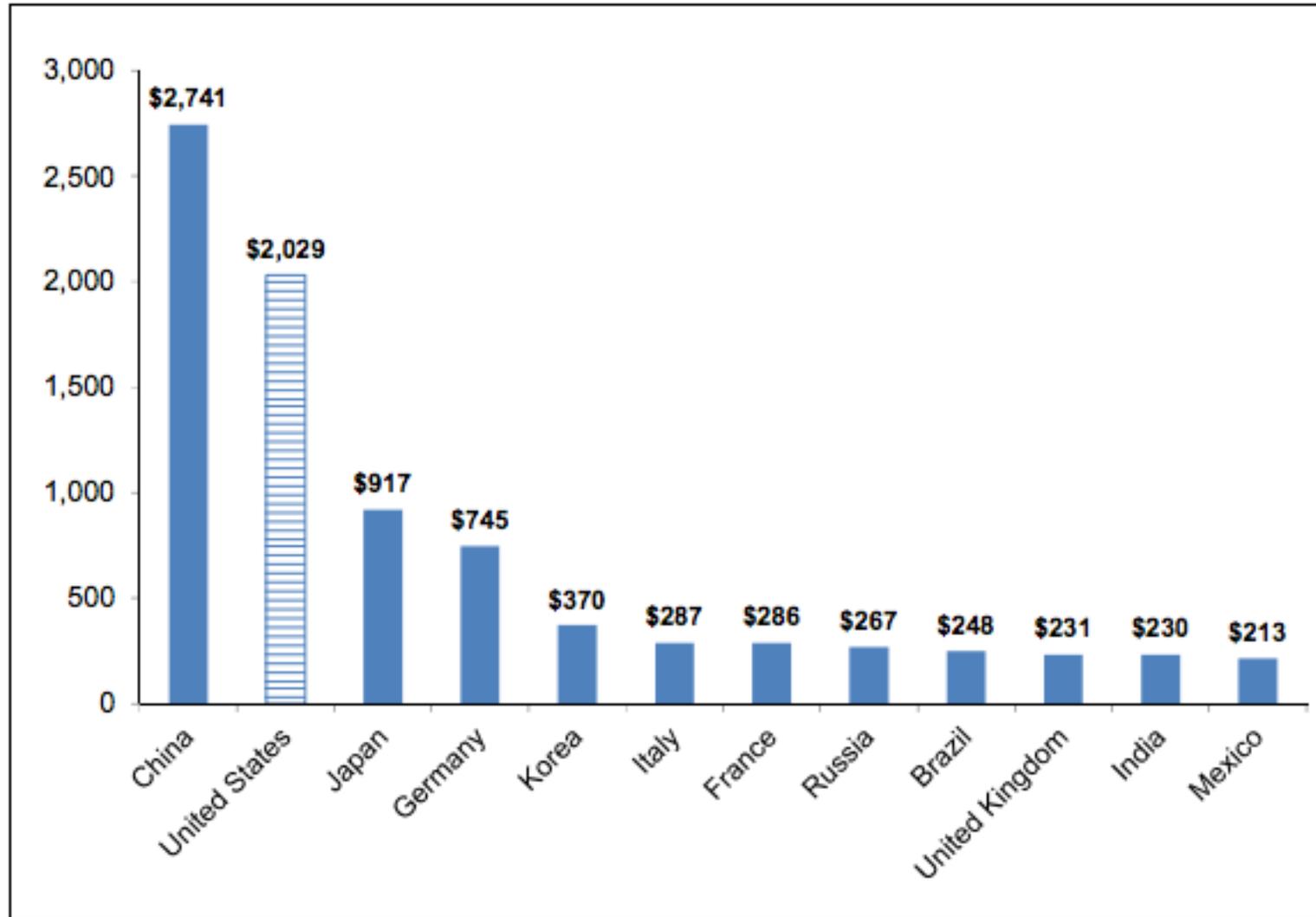
- ▶ Where will your city be in this move?



GLOBAL POSITIONING

Figure I. Leading Countries, Value Added in Manufacturing

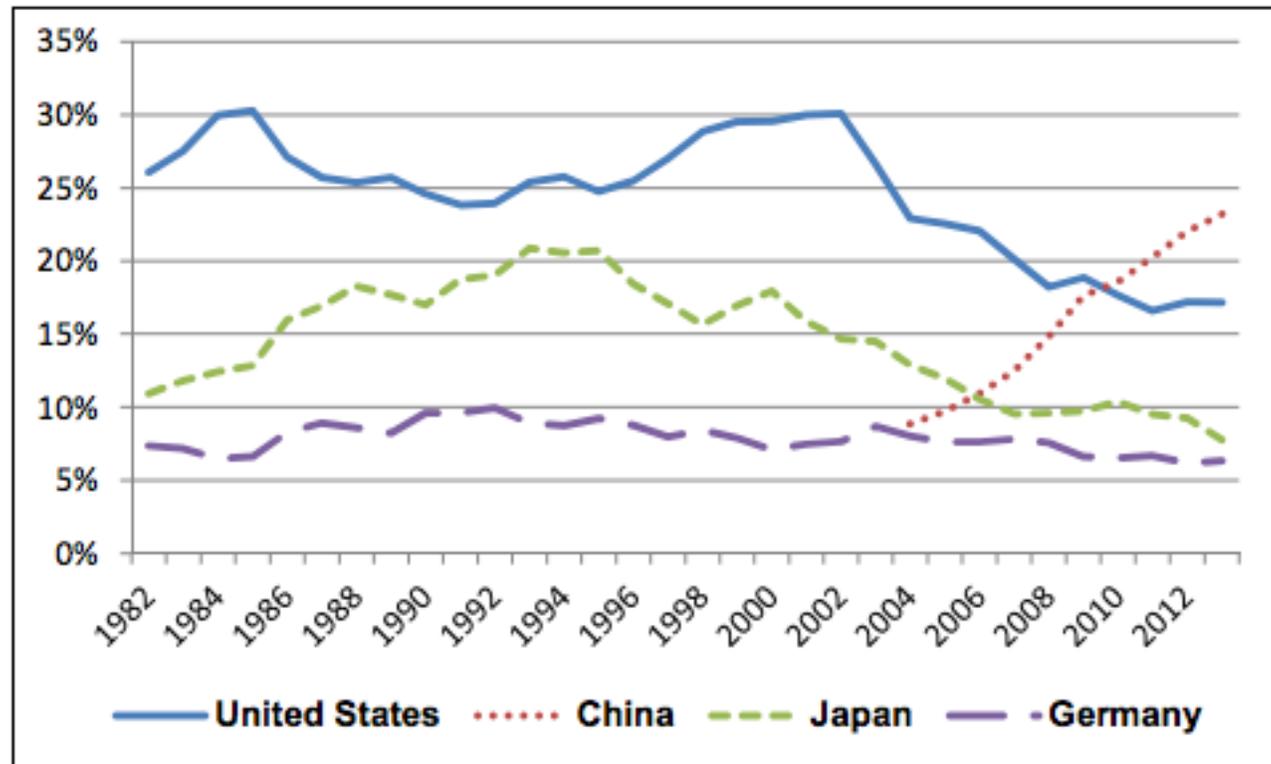
Billion dollars, 2013



Source: United Nations National Accounts Main Aggregates Database, value added by economic activity, at current prices—U.S. dollars.

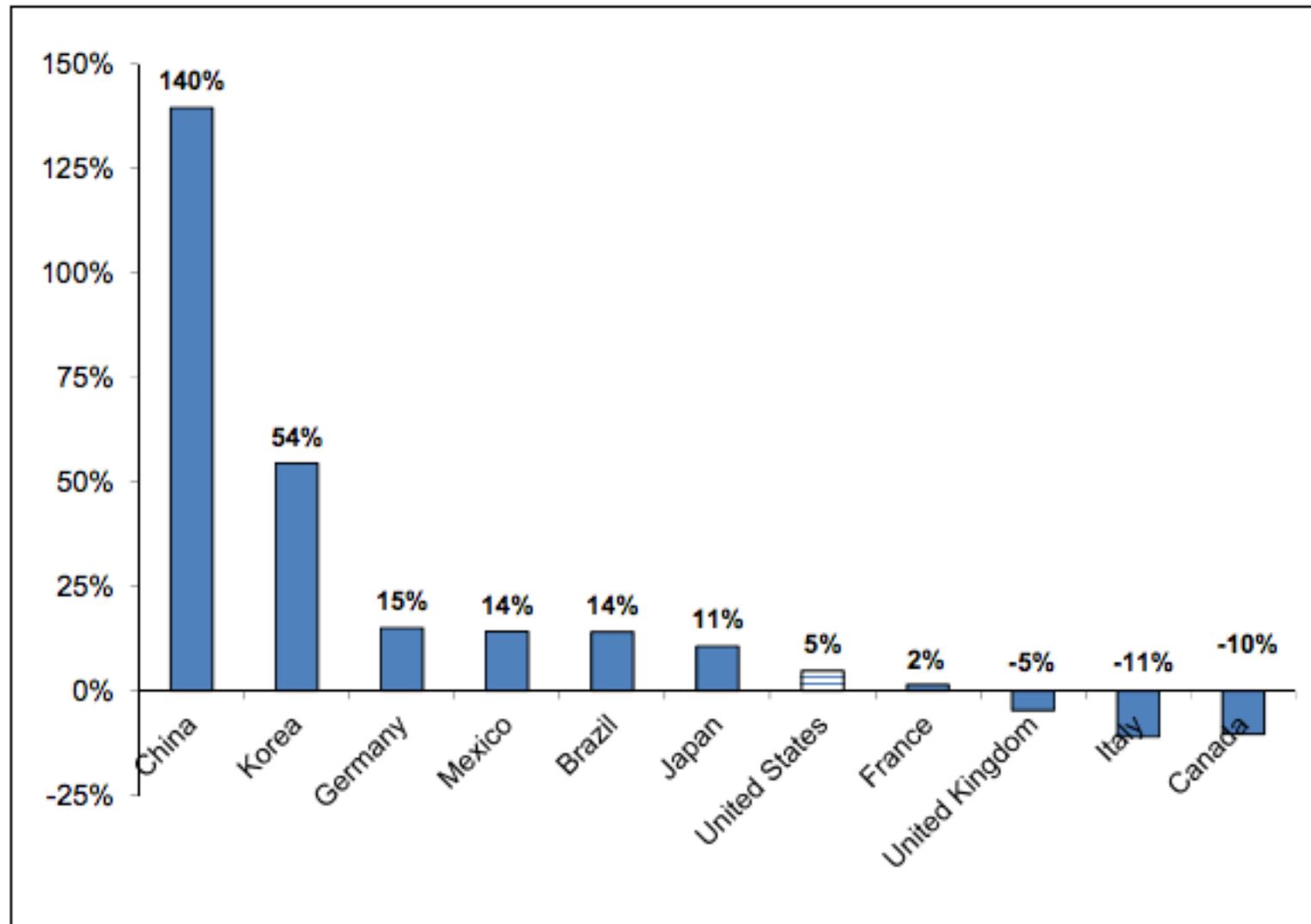
Source:
Congressional
Research
Service
U.S.
Manufacturing
in International
Perspective,
Marc Levinson,
March 17, 2015

Figure 2. Selected Countries' Shares of Manufacturing Value Added
Calculated in current U.S. dollars



Source: United Nations National Accounts Main Aggregates Database, value added by economic activity, at current prices—U.S. dollars.

Adjusted for inflation in each respective country



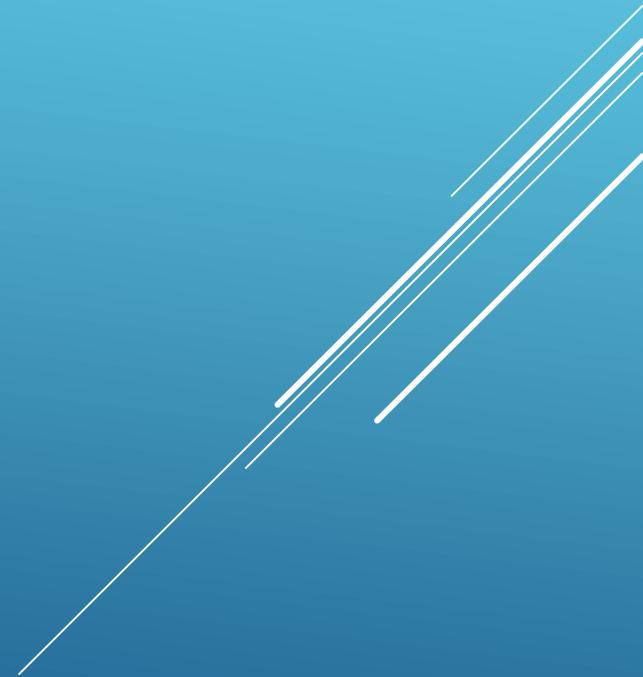
Source: <http://unstats.un.org/unsd/snaama/selbasicFast.asp>.

▶ New App For Making It In America

IF THIS IS THE DIRECTION, THEN WHAT
DID WE DO TO RESPOND?

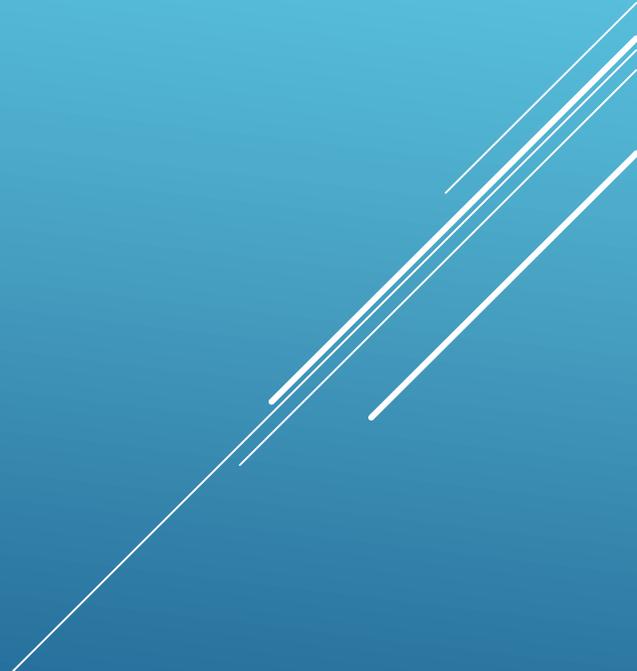
▶ Elements of Start-Up Systemic Framework

TEACH START-UPS ABOUT
PRODUCTION



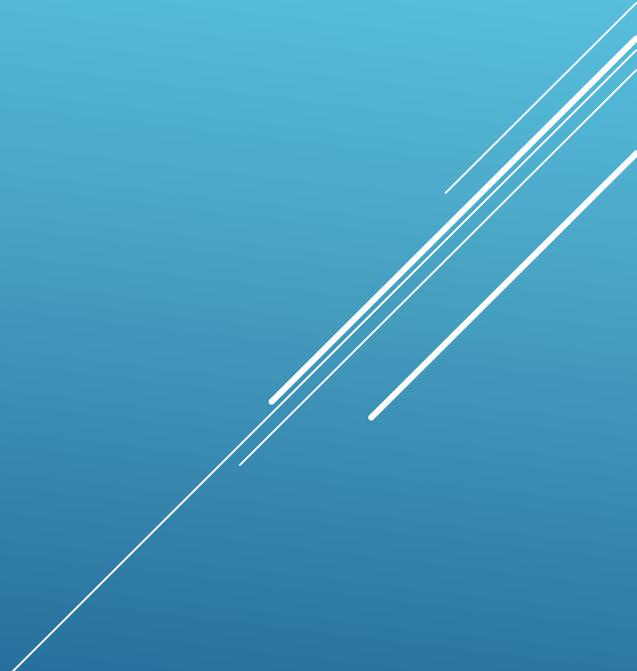
▶ Elements of Start-Up Systemic Framework

FIND FUNDING SOURCES FOR
PRODUCTION – NOT YOUR USUAL VC

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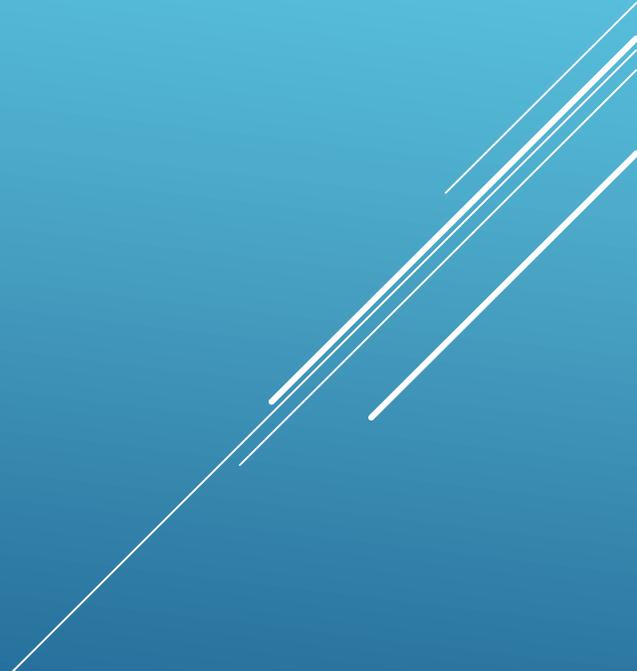
▶ Elements of Start-Up Systemic Framework

CONNECT START-UPS WITH BENCH / CM'S
WHO CAN DO PRODUCTION WORK

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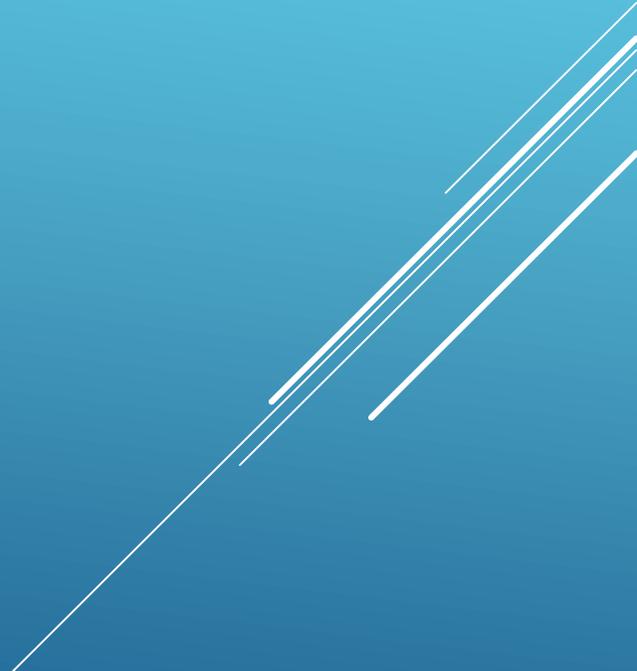
- ▶ Who can produce next generation products?
- ▶ How do you teach start-ups to produce their products?

CREATE THE MAKER PROFESSIONAL



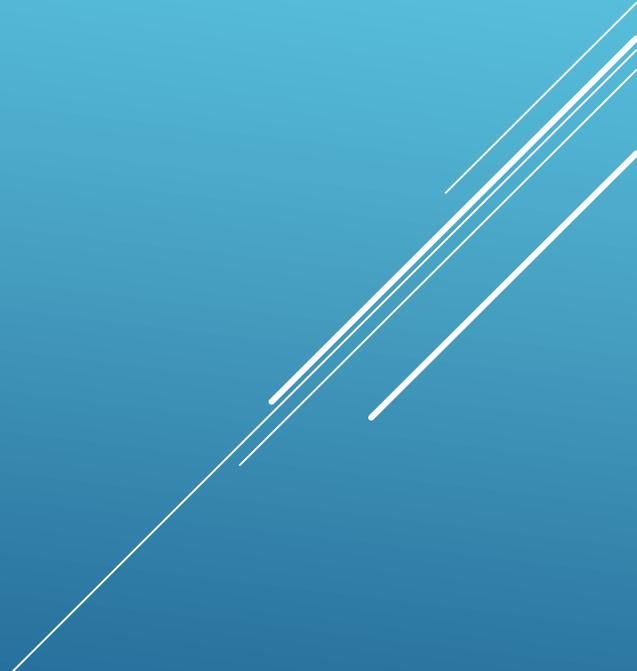
▶ What is the Maker Professional?

AN INDIVIDUAL WHO MAKES A LIVING
BY MAKING A PRODUCT

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▶ Applications of a *Maker Professional*

SELF, EMPLOYMENT OR CONTRACT

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► What is it?

100 POINTS OF COMPETENCY

REGISTERED APPRENTICESHIP WITH THE
U.S. DEPARTMENT OF LABOR

The United States Department of Labor

Office of Apprenticeship

Certificate of Registration of Apprenticeship Program

MADE RIGHT HERE

*Registered as part of the National Apprenticeship System
in accordance with the basic standards of apprenticeship
established by the Secretary of Labor*

November 6, 2014

Date

ZA004147787

Registration No.



[Signature]

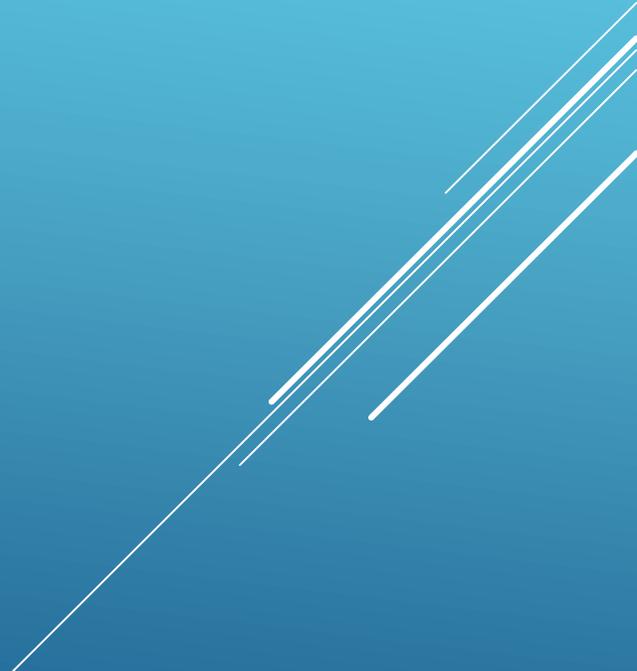
Secretary of Labor

[Signature]

Administrator, Office of Apprenticeship

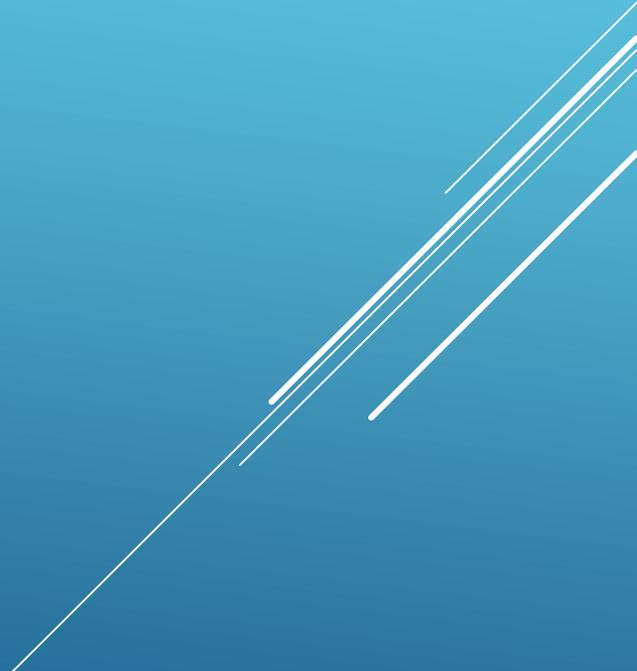
▶ Where do we deliver training?

IN A MAKER SPACE FOR INDIVIDUALS
AND START-UPS

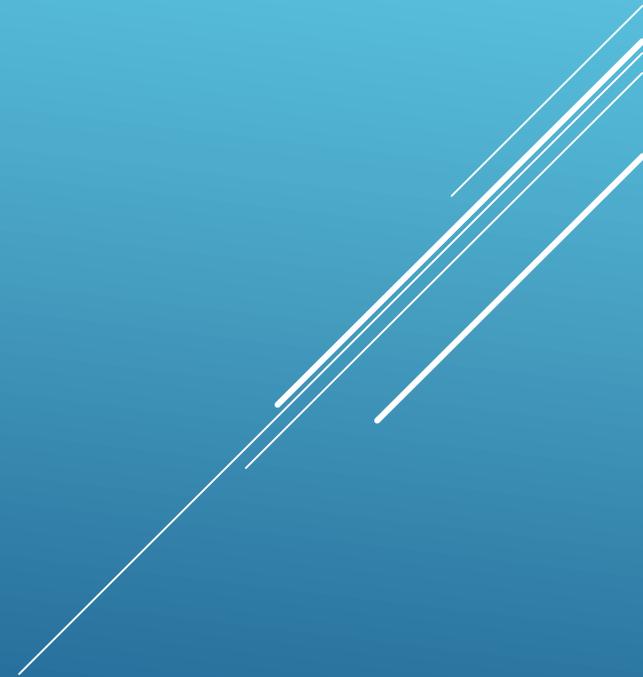
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▶ What is a Maker Space?

WHERE DIGITAL TOOLS CONGREGATE
AND TECH CREATIVITY OCCURS

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Maker Registry : Integration Tool





MADE RIGHT HERE

What are you making?

Tell us about your projects.

[CREATE A PROJECT SPACE](#)

What have you made?

Tell us about you.

[CREATE A PROFILE](#)

VISIT THE LINKS

[What's being made?](#)

See what's being made right here.

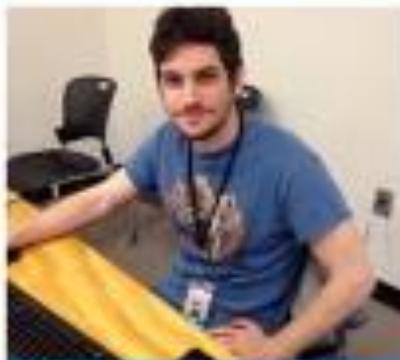


WHO WE ARE

Meet our Makers

See the individuals that make right here.

[CLICK HERE](#)



Ezra Juliar

📍 Pittsburgh, PA 15212, US



Johnny Naples

📍 Pittsburgh, PA 15212, US



Damone Wills

📍 Pittsburgh, PA 15210, US

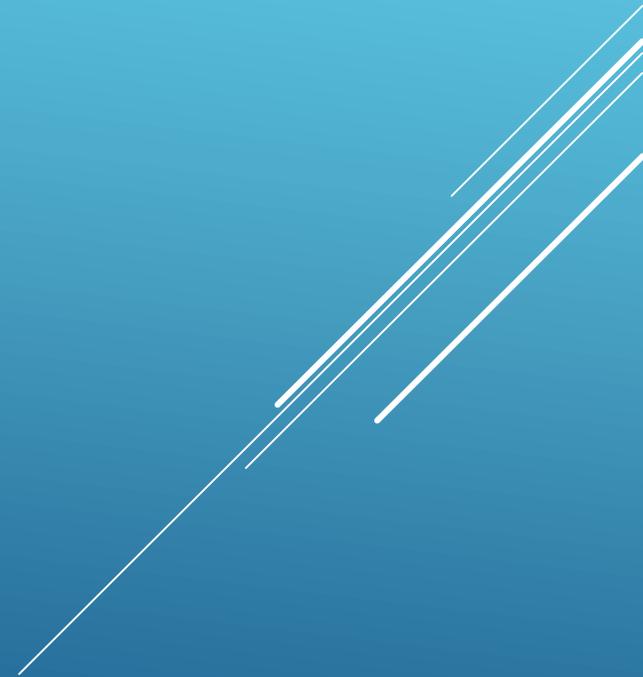


Dagan Bontrager

📍 Pittsburgh, PA 15206, US



Maker Portfolios





Cheryl Z Jernigan

ON THE BENCH

Pittsburgh, PA 15206, US

<http://maderighthere.me/by/cherylzjernigan>

- MESSAGE
- BOOKMARK
- CONNECT
- + ADD



EDIT PROFILE

MAKER STATS

Skills	3
Connections	0

CURRENTLY LOOKING FOR

- I'm available for hire
- I'm a student in a trade



SUMMARY

SKILLS	CREDENTIALS	EQUIPMENT	MATERIALS	PROCESS
3D Printing				
Laser Cutting				
3D Printer		1		
CNC Embroidery Machine				
Laser Cutter		1		
3D Printers				

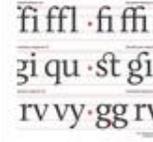


RECENT PROJECTS



[Cheryl Z Jernigan](#)

My first 3D printing project! This pendant was a great introducti...



[Sauer Project: M. A. K. E. R. letters](#)

Objective: To create 3D letters 12" high, showcasing our creativi...

CONNECTIONS



Johnny Naples

Building America

Pittsburgh, PA 15212, US

<http://maderighthere.me/by/19-johnny-naples>

[MESSAGE](#) [BOOKMARK](#)

MAKER STATS

Skills 7

Connections 0

CURRENTLY LOOKING FOR

- I'm in a union
- I'm a student in a trade

SUMMARY

I am a student, but I am also a teacher. I make some good things, and try to make good things happen. While others represent, I present my rep.

SKILLS	CREDENTIALS	EQUIPMENT	MATERIALS	PROCESS
Brazing				<input checked="" type="checkbox"/> 1
Soldering				<input checked="" type="checkbox"/> 1
Wiring				
Woodworking				
AutoCAD				<input checked="" type="checkbox"/> 1
TIG Welding				<input checked="" type="checkbox"/> 1
SMAW				
MIG Welding				<input checked="" type="checkbox"/> 1
metal				
Metalworking				<input checked="" type="checkbox"/> 1

RECENT PROJECTS

[Cafe Racer Cowl Seat](#)
 Aluminum seat/cowl/battery box combo, possibly a prototype for ...

CONNECTIONS

We're waiting for Johnny to connect with someone.



Michael Farmer

 ON THE BENCH

 Monroeville, PA 15146, US

<http://maderighthere.me/by/michaelfarmer>

 MESSAGE

 BOOKMARK

MAKER STATS

-  Skills 4

-  Connections 0

CURRENTLY LOOKING FOR

-  I'm available for hire

SUMMARY

SKILLS	CREDENTIALS	EQUIPMENT	MATERIALS	PROCESS
 Dynamical Systems  1				
 Mathematical Modelling  1				
 CAD  1				
 Parametric Modelling  1				

RECENT PROJECTS

Michael has no recent projects.

CONNECTIONS

We're waiting for Michael to connect with someone.



Ramone Patterson

 ON THE BENCH

 Pittsburgh, PA 15235, US

<http://maderighthere.me/by/141-ramone-patterson>

 MESSAGE  BOOKMARK

MAKER STATS

 Skills	7
<hr/>	
 Connections	12

CURRENTLY LOOKING FOR

-  I'm looking for something else
-  I'm available for hire

SUMMARY

mig welding tig welding stick welding

RECENT PROJECTS



Spartan Helmet



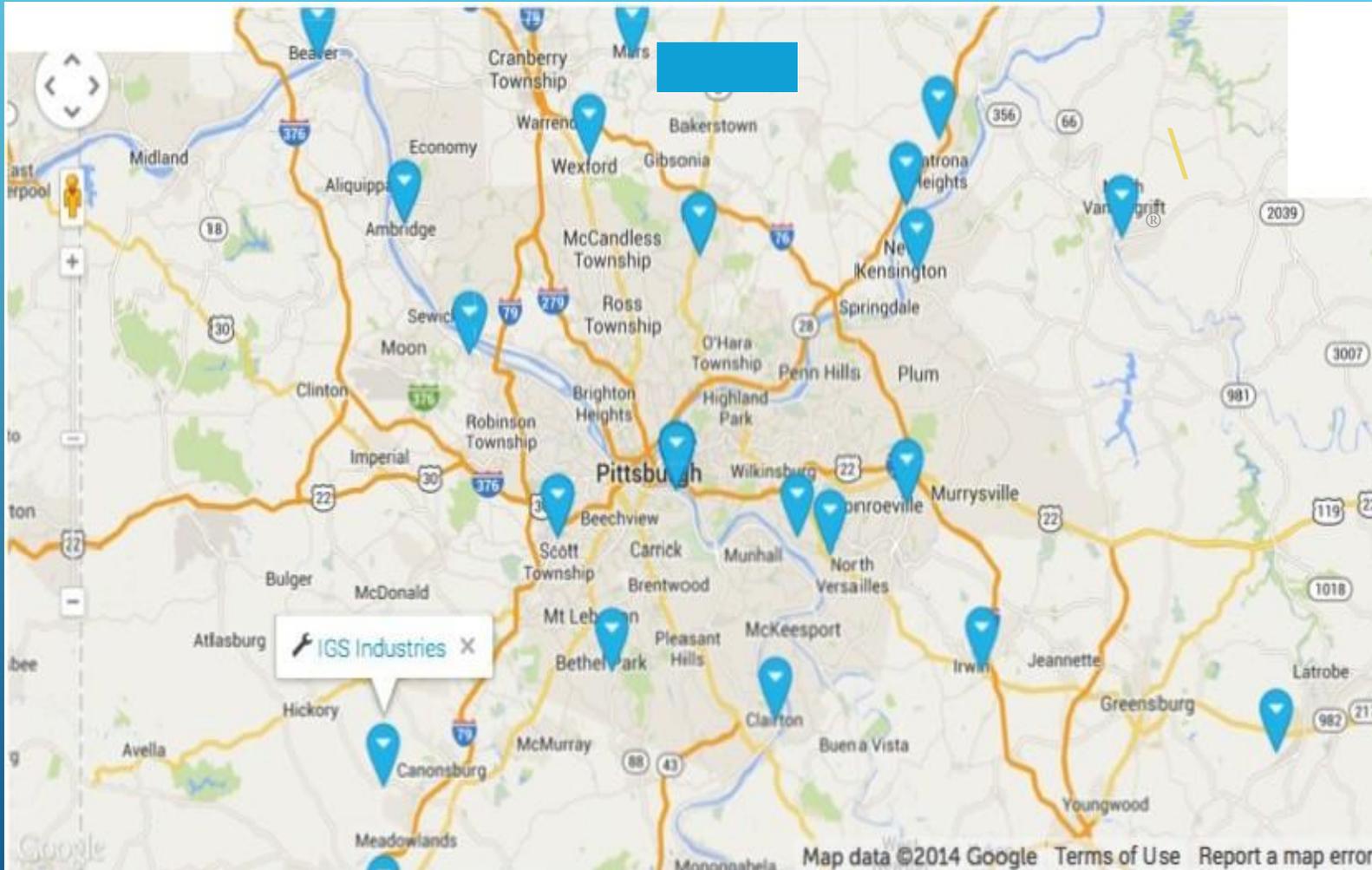
dumbbell rack

SKILLS CREDENTIALS EQUIPMENT MATERIALS PROCESS

 Certified Welder

Put Yourself on the Map

CREATE A PROFILE

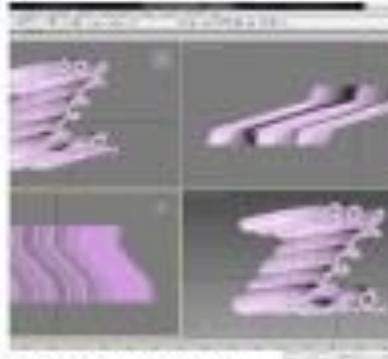


What's being made?

See what's being made right here.



Patio Side Table
Pittsburgh, PA 15208, US



Cheryl Z Jamigan
Pittsburgh, PA 15243, US



Laser Cut Book
Bethel Park, PA 15102, US



Tree Bookcase
Pittsburgh, PA 15232, US



Small group training



Builds the Maker Bench



ROBOTIC BOAT
PRODUCTION TRAINING

DOL Secretary Perez



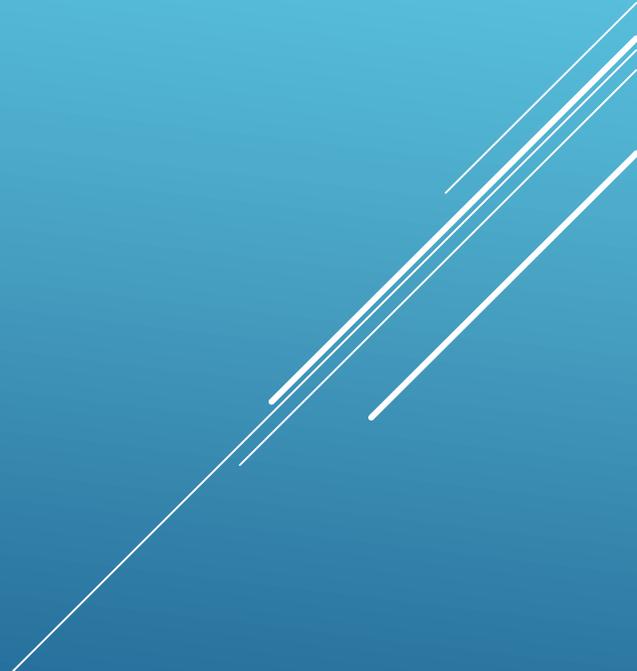
Training Group Project



JAMES SIMON BENCH PROJECT

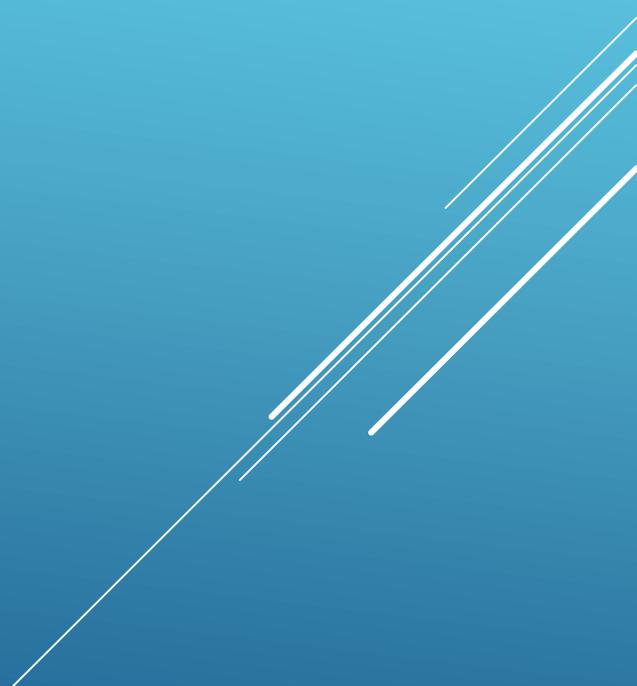
Maker Professional Program Administration

A National Platform

The background is a solid blue gradient. In the bottom right corner, there are several white, parallel diagonal lines of varying lengths and positions, creating a sense of motion or a modern design element.

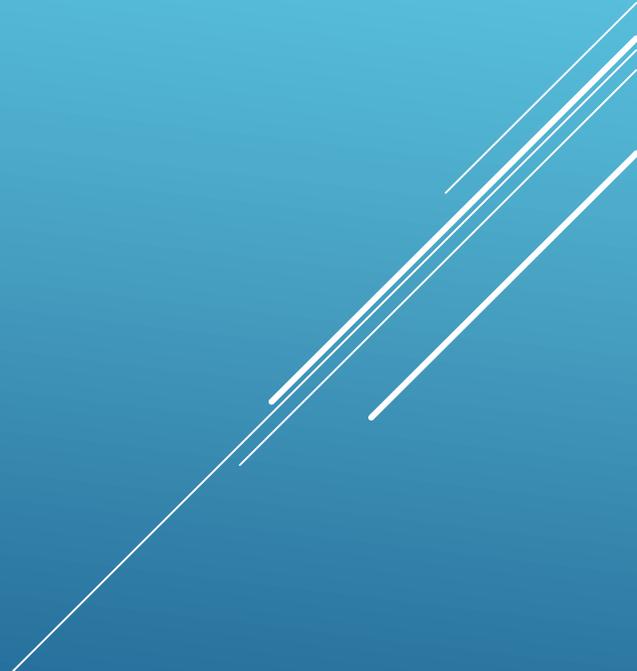
- ▶ Seattle
- ▶ Portland
- ▶ Sacramento
- ▶ San Francisco
- ▶ Oakland
- ▶ Burbank
- ▶ Chicago
- ▶ St. Louis
- ▶ San Antonio
- ▶ Atlanta
- ▶ Boston
- ▶ Tampa
- ▶ Gainesville
- ▶ Philadelphia
- ▶ Boston
- ▶ Tulsa
- ▶ Keene
- ▶ Dallas

U.S. MAKER PROFESSIONAL NETWORK MADE RIGHT HERE ALLIANCE





ACCELERATING PACE OF TECHNOLOGY
IN SHORTER TIME SPANS





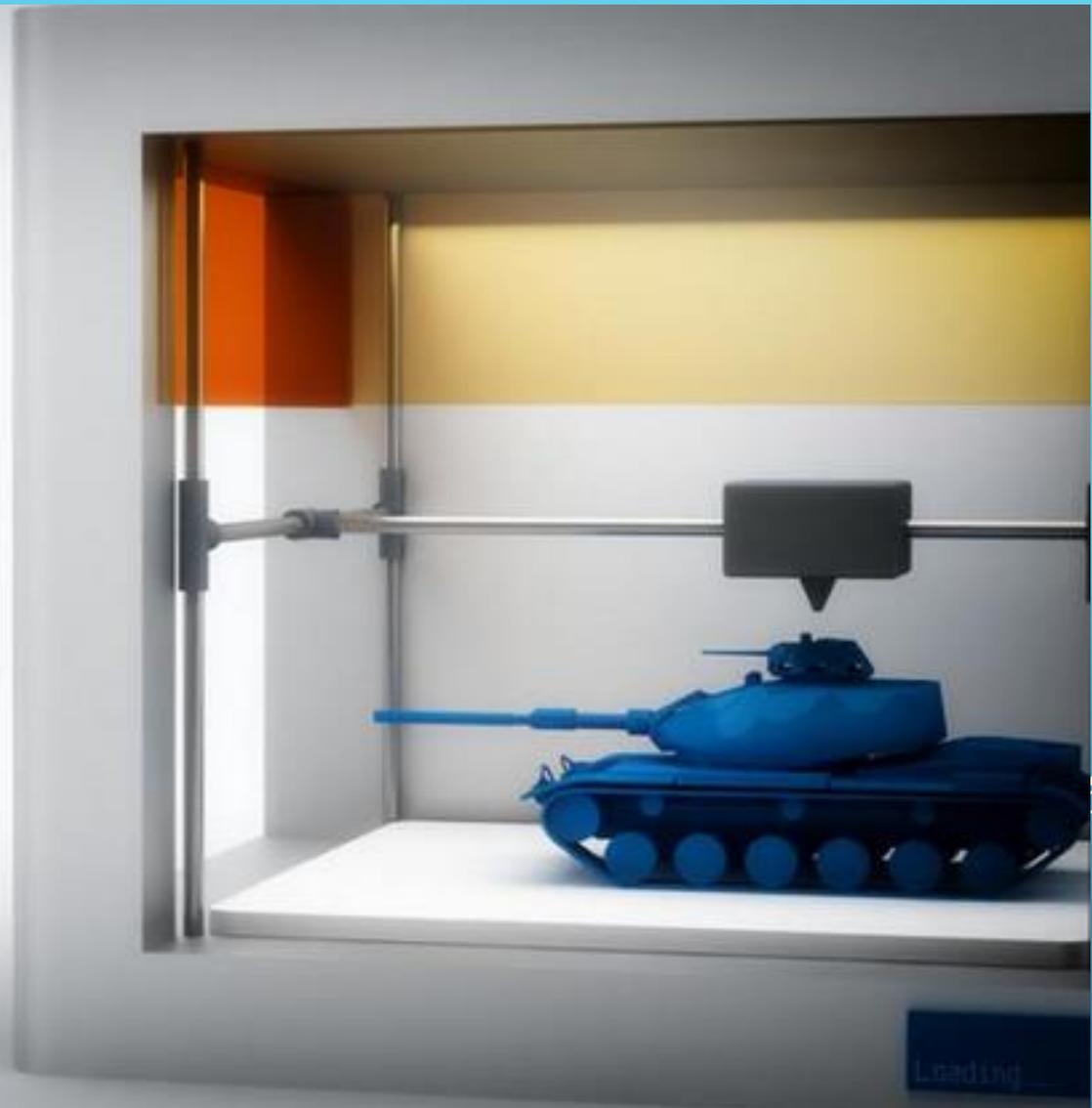
SEPT 17 2013 WHITE HOUSE OSTP OFFICE OF INNOVATION:
JAN 2014 STATE OF THE UNION MET WITH PRESIDENT DAY AFTER PGH
JUNE 17 2014 OBAMA VISIT PITTSBURGH – OUR SITE
JUNE 18 2014 WHITE HOUSE MAKER FAIRE



MAY 29 2015 DOL SECRETARY PEREZ VISIT TO CARNEGIE MELLON
JUNE 12 2015 WHITE HOUSE MAKER FAIRE
SEPT 8 2015 WHITE HOUSE APPRENTICE LEADERS ANNUAL MEETING
MAR 15 2016 DEPT OF COMMERCE DIALOG COMMENCES

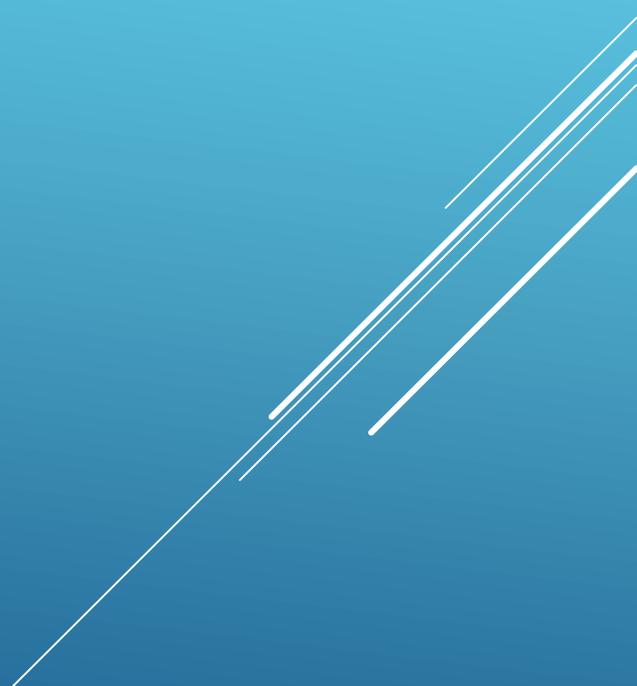


MANUFACTURING CENTER OF THE
FUTURE



Internet of Things
Big Data
Cloud Computing
Analog to Digital
Hardware, not Software
Democratization of Tools
Sharing Economy
DIY
Small Batch Mass Customization
Art & Craft with New Tools
Autonomous Robotics
Infrastructure Sensing Systems
Maker Movement and Crowd Sourcing
Democratization of Tools
Millions of Manufacturers
Distributed Systems and Power

THIRD INDUSTRIAL REVOLUTION



- ▶ Start-Up Bootcamp Formats (3)
- ▶ Maker Professional Apprenticeship
- ▶ Maker Professional Credential
- ▶ MadeRightHere.me Website
- ▶ Maker Bench
- ▶ Top Maker Professional Competition
- ▶ Production Training for Start-Ups (2)

- ▶ Workshops for organizing sectors
- ▶ Makership Project – In A Box Specs for You
- ▶ A National Network for Sharing
- ▶ Preparation, Planning, and Implementation Workshops and Materials

- ▶ A Community Based Maker Space Spec for all these Activities under one roof for a sustainability model.

WHAT WE CREATED

A Comprehensive Suite of Solutions
Early stage support structures

Education
Workforce Development
Economic Development
Business Development
Community Development





MADE RIGHT HERE MISSION

Compete globally
in the next industrial
revolution....

Not by competing
city to city but using
a Maker

shared economy
to propel us there.

- ▶ Join us to get involved in developing the systemic framework for local and domestic manufacturing.
- ▶ Understand the role you and your sector can play in the Third Industrial Revolution and
- ▶ make your pivot now!

WANT TO PIVOT?

Made Right Here

US Maker Professional Network

Made Right Here Alliance

A series of three parallel white lines of varying lengths, slanted upwards from left to right, located in the bottom right corner of the slide.

Thank you!

Bernie Lynch
Strategic Development Solutions
strategiclynch@gmail.com; 412-488-8040
1936 Fifth Ave. Pittsburgh PA 15219

