



Certification in Digital Fabrication, Making and Manufacturing
MAKE Santa Fe
Activity Report



2879 All Trades Road

Santa Fe, NM

505.819.3502

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Summary

This report summarizes progress on the City of Santa Fe/Make Santa Fe Professional Services Agreement “Certification in Digital Fabrication, Making and Manufacturing.”

What was intended to be a single certification program has grown into two different programs which complement each other, even while leveraging distinct networks and opportunities for impactful and ongoing workforce development efforts.

The **DigiFab Youth Lab** program is a twelve week course focused on building employment opportunities, entrepreneurship and skill development pathways, primarily for underserved youth.

The **Maker Professional Registered Apprenticeship** is a 12 week Federal Department of Labor Registered Apprenticeship program that establishes MAKE Santa Fe as one of only six entities in the nation capable of teaching this cutting edge advanced manufacturing skill set. The Department of Labor designation means that MAKE is able to apply for state and federal funds for providing training and that employers who send new hires and/or incumbent workers through the program are able to apply for funding to help cover the training cost.

Both programs are moving forward at MAKE Santa Fe with the pilot youth program coming to a close in mid-MAY of 2018 and the registered apprenticeship program beginning in summer of 2017 with the first cohort graduating in September.

Each of the programs has made progress in establishing relationships with area employers and workforce development service providers. The ongoing success of these programs will be ensured by an additional year of support from the City of Santa Fe and the city’s investment will be considerably leveraged and magnified.



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DigiFab Youth Lab

This program has been launched in partnership with Youthworks. All eight initial participants are still engaged in the program and attendance is high and consistent. A mid-point check in with Youthworks staff confirms the high level of enthusiasm for participation in the program and the increased confidence and enthusiasm for potential jobs and entrepreneurship.

The **DigiFab Youth Lab** achieves the following goals:

- Opens learning models for youth that have struggled with formal education or who were unable to complete high school for whatever reason.
- Demonstrates real life application of skills and associated opportunities
- Delivers a competency certification in advanced manufacturing and digital fabrication techniques
- Provides participants with a current resumé prepared with professional assistance and the confidence to go forward in the job market.
- Prepares “graduates” to enter the job market as new employees or informal apprentices (ie, via YouthWorks).
- Provides experience in working within a team and responding to management.
- Prepares “graduates” to pursue more rigorous skill development, such as a registered apprenticeship or community college or other continuing education.
- Provides participants with a portfolio of accomplished work and projects to assist in demonstrating their newly developed skills.

Activities since our initial report in the contract term have focused on:

1. **Partnership structure**
2. **Program outreach**
3. **Curriculum (content, faculty recruitment, employer identification)**



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Maker Professional Registered Apprenticeship

Following a competitive application process, MAKE Santa Fe was selected be one of 5 expansion locations in the nation for the **Maker Professional Department of Labor Registered Apprenticeship**. The program is extended via Pittsburgh-based Made Right Here, which developed the initial curriculum and the license and agreement with MAKE Santa Fe was formalized in February of 2017.

As an official provider of this registered apprenticeship, MSF is now able to train candidates for official DoL apprenticeship placement and to leverage state and federal funds toward that work. The agreement, which provides faculty as well as administrator training and an extensively developed curriculum, has also become a valued conceptual context for the current content and structure of the YouthWorks pilot program. The current Youthworks program has been designed to dovetail with this more extensive apprenticeship program.

The **Maker Professional program** achieves the following goals:

- Establishes legitimate manufacturing and advanced manufacturing apprenticeship in Northern New Mexico
- Provides skillsets to participants that may be used by a broad range of companies from cabinet and electro-mechanical shops to additive manufacturing (3D printing), CNC machining, factory automation--it works for traditional jobs that dominate the current market and future jobs offered by today and tomorrow's innovative startups.
- Includes development of design thinking skills.
- Provides over 200 hours of direct training.
- Commits participants to 2000 total hours of combined direct training and on-the-job-apprenticeship.
- Creates opportunities for area employers to customize the program to their needs and apply for financial compensation for training provided.
- Allows individuals, new hires or incumbent workers to participate.



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Activities since our initial report in the contract term have focused on:

1. **Being selected to execute the program**
2. **Completing licence agreement**
3. **Preparing for training**
4. **Engaging area employers**
5. **Engaging area service providers**
6. **Recruiting faculty and trainers**

Deliverables

MAKE Santa Fe has successfully achieved several milestones that demonstrate the desirability and viability of the programs being developed and implemented. Some milestones are directly related to contract deliverables and others are additional benefits leveraged at least in part because of City of Santa Fe Economic Development support.

Key Milestones achieved:

- Selected as provider of Maker Professional Registered Apprenticeship (one of 6 nationally)
- Successful pilot program for DigiFab Youth Lab
- MAKE Santa Fe apprenticeship program written into next service contract proposal by SER Jobs for Progress with agreed training costs
- MAKE Santa Fe youth program written into next service contract proposal by HELP New Mexico
- MAKE Santa Fe asked to consider representing apprenticeship on NALWDB
- Became founding member of Nation of Makers
- Invited to represent Santa Fe twice at The White House

Regarding MAKE Santa Fe's contract with City of Santa Fe Economic Development, the follow are specific deliverables tied to the contract, which apply to the DigiFab Youth Lab, the Maker Professional Registered Apprenticeship or to both programs.



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Create partnership structure and outreach plan: 100% Complete

The partnership structure identified and established for ensuring success of the DigiFab Youth Lab is:

	Core Partner	Additional Institutional Partners	Workforce training and funding partners	Local Employers Visited and engaged
MAKE Santa Fe	Youth Works	SFAI SFCC Po'eh Cultural Center Santa Fe Opera Homewise SNCC	NALWDB SER Jobs For Progress NM DWS HELP New Mexico City of Santa Fe	Prosser Forge O'Leary Built Hansen's Lumber Extraordinary Structures Liquid Light Glass Pending: Meow Wolf Pronto Graphics Arroyo Studios

This partnership matrix will continue to expand in the coming year and organically as the program gains traction.



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The partnership structure identified and established for ensuring success of the **Maker Professional Registered Apprenticeship** is:

	Core Partner	Additional Institutional Partners	Workforce training and funding partners	Local Employers Visited and engaged	Startup Resources Identified
MAKE Santa Fe	Made Right Here	SFCC LANL Community Partners	NALWDB SER Jobs For Progress NM DWS HELP New Mexico City of Santa Fe	Meow Wolf Extraordinary Structures Pronto Graphics LANL Santa Fe Studios Arroyo Studios	VAF MIX Santa Fe SFBI Creative Startups ABQID CNM

This partnership matrix continues to expand organically as the program gains traction. Our established partnership with NALWDB and SER will help to actively solicit new employers.

MAKE Santa Fe workforce training is written into the SER Jobs for Progress workforce training budget and plan for Fiscal Year 2017/2018.



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Specific Activities around partnership:

- Licensure agreement with Made Right Here to locally execute DOL registered Maker Professional apprenticeship program
- Made Right Here curriculum received **(sample attached as exhibit A)**
- Digifab Youth Lab curriculum created and iterated **(sample attached as exhibit B)**
- February meeting at Make Santa Fe—Participants included teams from Santa Fe Community College, the City of Santa Fe and Santa Fe Chamber of Commerce, state workforce development, and Los Alamos National Laboratory. (see exhibit c for roster attached of those invited)
- Meetings with Northern Area Local Workforce Development
- Met with Patrick Gannon of New Mexico Economic Development JTIP staff
- Meetings with Teresa Quintana of HELP New Mexico
- Meetings with Maggie Lujan of SER Jobs for Progress **(requested letter of support to SER attached as exhibit C)**
- Collaboration agreed with Santa Fe Art Institute re: June Design Workshop
- Collaboration with Young Opera Technicians complete
- Collaboration with Wise Fool pending
- Collaboration with Po'eh Center ongoing
- Collaboration with Homewise initiated
- Collaboration with Taos Church gift shop initiated
- Site visits to employers ongoing



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Outreach Plan: 100% Complete

The outreach plan developed by MAKE Santa Fe to create awareness and find participants is structured around four specific communication methods:

Internal Communications	Partner with agencies and organizations with extensive networks	Partner with agencies and organizations with strong youth networks	Broadcast message via local media and events
Newsletter Social Media Channels Website	NM DWS NALWDB SER HELP New Mexico Santa Fe Community Foundation LANL Community Partners Nation of Makers Made Right Here MIX Santa Fe AHA Festival Meow Wolf	Youthworks Po'eh Cultural Center Wise Fool SFAI Design Workshop Sustainable Native Communities Collaborative	SantaFe.com KBAC KSFR KVSF Santa Fe Reporter Santa Fe New Mexican Greenfire Times Silicone 66

SER + NALWDB offices across Northern New Mexico are particularly engaged in pairing companies and individuals with training opportunities and are looking forward to representing the Maker Professional apprenticeship program out of their offices.



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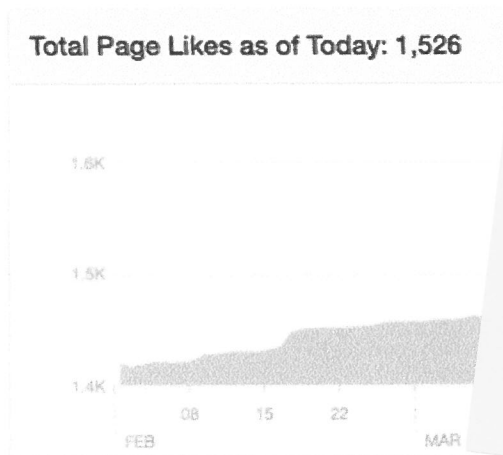
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Specific Activities around outreach:

- LOI with SFAI completed around use of facilities by SFAI residents (**attached as exhibit D**)
- Bolstered MAKE Santa Fe's social media presence (see below)
- Paid outreach contractor(s)
- February meeting at Make Santa Fe—Participants included teams from Santa Fe Community College, the City of Santa Fe and Santa Fe Chamber of Commerce, state workforce development, and Los Alamos National Laboratory. (**see exhibit E for roster attached of those invited**)
- Meetings with Northern Area Local Workforce Development
- Met with Patrick Gannon of New Mexico Economic Development JTIP staff
- Meetings with Teresa Quintana of HELP New Mexico
- Meetings with Maggie Lujan of SER Jobs for Progress
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Facebook Outreach improvement over



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Curriculum: 100% Complete

Curriculum development for the **DigiFab Youth Lab** has included content creation, identification and training of faculty and employer outreach.

Specific Activities around DigiFab Youth Lab curriculum:

- Faculty coordinator and guest speaker rosters
- Class schedule records
- Weekly lesson plans
- Coordinated field trips and visits to local employers

Regular Faculty

Randy Castillo

Randy has been identified for his enthusiasm for teaching and mentoring, his skill with the equipment and his considerable experience with youth education programs.

Andrew Woodard

Andrew is taking lead on education initiatives and training at MAKE Santa Fe. He the lead certification instructor for tools and technologies and will help to build out workforce training programs.

Curriculum development for the **Maker Professional Registered Apprenticeship** has focused on content, preparing for training and recruiting faculty and trainers.

Visiting Mentors

A partial list of visiting mentors includes:

Hubert Van Hecke, LANL measurements

James Thompson, LANL additive manufacturing

Kyle Pfister, Ninjas for Health

Zane Fischer, Extraordinary Structures

Joel Hobbie, Meow Wolf, fabrication and effects



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Employers Identified and Engaged:

Prosser Forge
O'Leary Built
Santa Fe Studios
Hansen's Lumber
Extraordinary Structures
Liquid Light Glass

Specific Activities around Maker Professional Registered Apprenticeship curriculum:

- Curriculum complete
- Admin support materials complete
- Faculty selected
- Training scheduled
- Stage 1 employers identified
- First cohort planned for summer 2017

Identified Faculty for Training to teach Maker Professional Registered Apprenticeship:	Employers Identified and Engaged around Maker Professional thus far:
Lucian Connoles Randy Castillo Zane Fischer Anaid Garcia Katrina Mendoza Ginger Richardson Stefan Schwab Andrew Woodard	Meow Wolf Extraordinary Structures Pronto Graphics LANL IATSE 480 Santa Fe Studios HocoFab Arroyo Studios

Randy J. Castillo
620 Alto St
Santa Fe, NM 87501
mediationmanrandy@gmail.com
(505) 720-5952 Cell

Experience

Teaching, mentoring, mediation

1996-2006: Master teacher, Extreme Youth, 6-8th grade, Legacy Church,
Albuquerque

Technical, fabrication and programming skills

Lifelong: Enduring commitment to making and maker culture. Products have
been sold as gifts through local retail and craft fairs. Current items with Indigo
Baby and Nadya's Salon, In negotiations with St. John's College to develop
products for college bookstore.

2006-2011: T-Mobile Tech Support Phone/Data Devices
Customer assistance for technical issues using online schematics

2001-2006: Rico Restoration
Bio-hazardous contamination remediation

Teambuilding, supervision and customer relations:

2012-present: Trader Joes
Various warehouse section leadership duties including data tracking and
trending, employee training

2013-2014 Keller Williams Realty
Licensed agent. Use of multiple data systems including notification and usage
tracking.

2001-2006: Citibank Cards
Customer service, live call assistance for new employees

Education

Certified mediator trained in general, workplace and divorce mediation through
Common Ground Mediation Services, Santa Fe NM

Victory Bible School of Ministry, Victory Love Fellowship, Albuquerque NM

1993-1994: University of New Mexico

Andrew Woodard

5B Dry Dock Place, Santa Fe, NM 87508

Phone: 505-490-0210 E-Mail: andrewjameswoodard@gmail.com

Selected Experience

Studio Manager, Box Studio LLC. Cerrillos, NM

2013 -Present

In my current employ I serve as a studio manager of operations. This job entails overseeing and performing tasks related to shipping and receiving artwork, ordering and maintaining supplies pertinent to repairing and creating sculpture, and serving as an art handler for purchasing clients. I also assist the owner in logistics and planning for his public art venture—Origami in the Garden, a national display of monumental sculptures that travels biannually. I manage one employee, yet oversee and maintain good working relationships from various subcontractors, vendors, and suppliers.

Contributing Faculty, Santa Fe University of Art and Design

2014-2015

I was responsible for teaching several courses in Materials and Processes, which included- wood, welding, model building, and clay modeling. We worked additively and subtractively, culminating in a final assignment that was collaborative.

General Manager, All Powder Coating, Santa Fe, NM

2011-2013

I oversaw the daily operations, upkeep, and improvements of a 25,000 sq. ft. fabrication shop/powder coating facility. In this role, I courted and contracted subcontractors, suppliers, and vendors for the purposes of capital improvements to an aging facility, periodic and emergency repairs and upkeep to machinery, as well as kept our supplies stocked to avoid work stoppages. I provided customer service for walk-in clients, handled all estimates and project management and tracking tasks for a small, yet busy shop. I hired and trained new employees in all tasks related to the powder coating industry. I vetted, oversaw and managed large commercial contracts such as Los Alamos National Laboratory, and Caterpillar, where it was necessary to create documentation systems, adopt protocols and standards, and execute trainings to fulfill certification standards for being a preferred vendor of Caterpillar.

Teacher in Residence, St. Louis Artworks

2011

I created a six-week curriculum for 30 high school aged students that met Missouri state education standards. This assisted me in working with 30 at-risk students in project-based assignments that strove to expose them to business skills, design principles, and metal fabrication skills. The resultant product of my residency was a series of publicly installed bike racks made of recycled materials.

Teaching Assistant, Washington University in St. Louis, MO

2010-2011

In this role, I assisted in daily classroom activities, lectures, and critiques—where I drafted course materials for 3d design classes, proposed and executed a series of workshops on mold making, and oversaw work-study students. I also assisted in maintaining proper/safe shop protocols. Ultimately, I co-taught a public art seminar class, which resulted in the commissioning of several student-produced sculptures.

Fabricator, Prescott Studio, Santa Fe, NM

2008-2010

I was involved in the fabrication of large-scale steel sculptures using blueprints and shop drawings. I followed, and helped implement new quality control standards. This position gave me a chance to learn and utilize new skills in steel fabrication, problem solving, and craftsmanship.

Co-Owner, Project Manager, Cromwell and Sons, Baltimore, MD

2004-2008

I was in charge of scheduling and making first contact with potential clients, upon which I would perform an initial consultation of services to be rendered. After which, I would be responsible for drafting an estimate. Once estimate was approved, I was in charge of organizing the bids and eventual work of various subcontractors, as well as the timely delivery of supplies to multiple jobsites. I set up timely inspections, and maintained payment schedules based on our draws. I provided weekly updates to our diverse clientel, and strove to either deliver my services on time, or draft a written contingency plan for unforeseen circumstances.

Education

Fine Woodworking Certificate Training, Santa Fe Community College

Ongoing

Master of Fine Art, Interdisciplinary Studies, Washington University of St. Louis

2012

Bachelor of Fine Art, Photography, Maryland Institute of Art

2004