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MANUFACTURING COORDINATION:

The Importance of Collaboration for High Skill
Manufacturing Training on Chicago's West Side

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DOMINICAN UNIVERSITY
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The Graduate School of Social Work is centered in the Sinsinawa Dominican tradition, which is committed to truth and compassionate service. We prepare professional social workers for globally-focused, family-centered practice to advocate for human rights, and social and economic justice for all persons including socially excluded populations that promotes human and community well-being. The West Side Collaborative seeks to build sustainable and appropriate partnerships between agencies, organizations and communities on Chicago's west side that contribute to equitable community development and social change.

About Austin Coming Together

Austin Coming Together (ACT) is a nonprofit whose mission is to increase the collective impact of its member organizations on education and economic development outcomes for the Austin community. ACT's work is centered on building community capacity for collaborative action by Developing Shared Leadership, Creating Systems of Accountability, Planning and Implementing Improvement Strategies, & Engaging the Community. There are currently four areas of focus: Early Childhood, Youth, Workforce, and the Built Environment.

INTRODUCTION

This paper presents the findings of research conducted over the spring and summer of 2014 on the availability of and resident participation in advanced manufacturing workforce training on Chicago's west side. Providers of training programs were surveyed regarding the nature of their programs as well as historical and current information on capacity, enrollment, completion and job placement. While not all providers serving the west side participated in the survey, the information collected on five significant programs provides a useful perspective on the current state of advanced manufacturing training on Chicago's west side. Based on the information collected, three key observations can be made: first, despite the demonstrable success of currently available programs, seats in these programs are going unfilled; second, very little is known about the needs of employers who hire (or could hire) graduates of these programs; and finally, efforts to expand and promote advanced manufacturing training and employment on the west side are hampered by a lack of communication and transparency across training providers in the area.

This investigation into the landscape of advanced manufacturing training was initiated by the Austin Workforce Collaborative (AWC) and conducted in partnership with researchers from the graduate schools of business and social work at Dominican University. AWC was initiated in 2012 by Austin Coming Together (ACT), a community development organization committed to increasing collective impact in the Austin community on Chicago's west side. The purpose of the Workforce Collaborative is to create pathways to living wage careers for unemployed and under-employed residents of Austin. The collaborative aims to bring together social service providers and job training agencies working in Austin. The operating hypothesis of AWC's effort is that greater collaboration will increase the number of Austin residents who enroll in job-training programs that will prepare them for living-wage jobs in the manufacturing sector. This hypothesis is supported by both the academic and practice research literature (Asslid, et.al., 2002; Martinson, 1999; Pindus, et.al, 2000) ; in this project, AWC partnered with researchers from Dominican University to empirically investigate the need for and effectiveness of increased collaboration in AWC's service area.

Austin Workforce Collaborative

Members of the Austin Workforce Collaborative include Manufacturing Renaissance, Jane Addams Resource Corporation, Erie Neighborhood House, Westside Health Authority, Safer Foundation, and Prevail. In addition, several other organizations working in the neighborhood participate in some (but not all) activities of the Collaborative. These organizations include New Moms Inc., Living Word Christian Center's Re-Entry Services, The Peace Corner, BUILD Inc., Bethel New Life, Greater West Town Project, Instituto del Progreso Latino, Literacy Works, Workforce.io, Haymarket Center, Chicago Urban League, and the Garfield Workforce Center.

Full participation in the collaborative entails commitment to the following:

- Promote and support the vision, purpose, and values of the Austin Workforce Collaborative;
- Attend monthly working meetings for reporting and strategic planning purposes;

- Work within the organization and ACT to build a stronger referral network with AWC members;
- Share information on a quarterly basis regarding the eligibility requirements for the organization's workforce-related programming and registration/orientation dates; and/or support services;
- Share data related to program and/or support services outcomes.

AWC has identified three targeted outcomes for their work:

- Increased enrollment in job training programs,
- Increased number of Austin residents with credentials qualifying them for manufacturing jobs, and
- Increased manufacturing job placements for west side residents.

ACT and members of AWC believe that there is substantial demand for workers from employers in the high skilled manufacturing sector in the greater Chicago area. Linking the west side's unemployed and underemployed workers to this sector through skills training should enable more residents to secure stable, living wage employment, thereby contributing to sustainable economic development in the Austin community. This study aims to substantiate several of the assumptions underlying this assertion.

Targeted Community

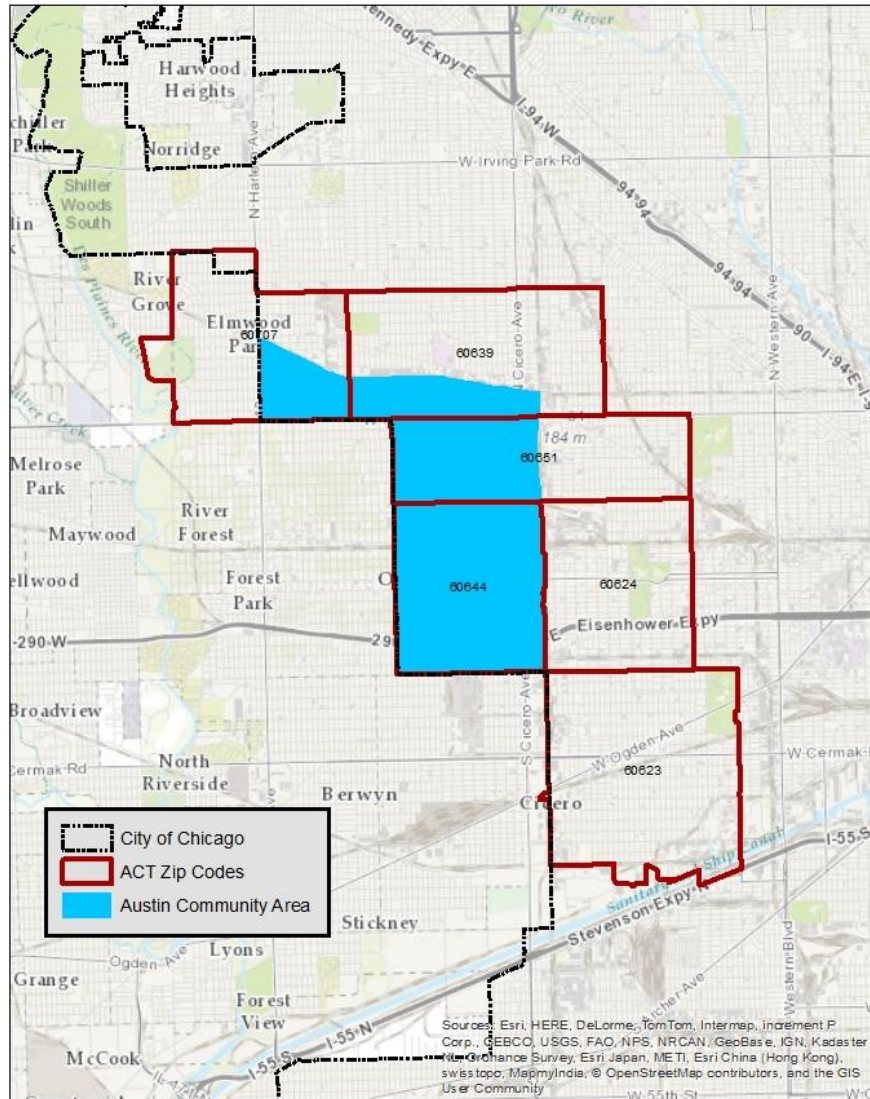
AWC targets a large geographic area on Chicago's west side, including the neighborhoods of Austin, East Garfield Park, West Garfield Park, and West Humboldt Park, as illustrated in Figure 1, below.

Assumptions of Project

There are three major assumptions that guide the high-skill manufacturing project of AWC. First, the project assumes a large population of unemployed and underemployed workers residing in the Collaborative's service area. A first goal is to connect these workers to the training programs that are available within reasonable travel distance of the Austin community, identifying (and hopefully removing) barriers to participation. Barriers to participation include a skills gap (usually measured through a basic skills test like the TABE¹), an information gap (where qualified participants are unaware of programs or the opportunities that these programs afford), a combination of these, or something more challenging to measure, such as perceptions of work in the manufacturing sector, motivation, or culture. AWC seeks first to answer the question of why an unemployed neighborhood resident might *not* enroll in a training program, and second to alleviate barriers for those who would be likely to benefit from the programs. Does the resident lack the minimum skills required for entry to the training program? Is the

¹ The TABE, or Test of Adult Basic Education, is a widely available test used to assess the basic skills and knowledge of adult learners.

Figure 1: ACT Service Area



resident simply not aware of the program? In cases where the resident is both qualified for and aware of the available training programs, what might prevent enrollment? Section 2 of this paper further details the extent of unemployment and underemployment in the target neighborhoods, and Section 3 offers a preliminary assessment of the most common barriers faced by residents who are candidates for training programs.

Second, AWC is aware of several advanced manufacturing training programs that serve west side communities. Gathering a relatively complete understanding of the capacity, completion, and placement rates for these programs is a major goal of this research project. The effectiveness of AWC's collaborative work is largely dependent on the participation and communication of the training providers serving the target communities. The programs available to west side residents include the following:

1. Bethel New Life offers a Computer Numerical Control (CNC) certification program as part of their Advanced Manufacturing Training program. The 14 week, 168 hour program serves adults who are able to demonstrate 9th grade level mathematics and reading skills, and has preferential selection for west side residents.² Although Bethel New Life did not participate in the survey research for this project, publicly available information about their program is included in Section 3.
2. Richard J. Daley College (one of the City Colleges of Chicago) also offers training in CNC, along with a basic certificate in Welding and several other areas of manufacturing³. Daley College's programs are tuition-based, and students earn college credit for their completion. Partial details of Daley College's programs were provided via the research survey for this project; these details are included in Section 3, along with publicly available information.
3. The Greater West Town Training Project provides a training program in woodworking and solid-surface manufacturing. While not directly comparable to the CNC and welding programs offered by other training programs, the Greater West Town program provides some similar credentials, and is included here for that reason. However, Greater West Town did not participate in the survey research for this project.
4. Jane Addams Resource Corporation (JARC) offers two programs that serve the neighborhood. The first is a 20 week, 500 hour program in CNC where participants are trained to set up, operate, and program machine tools. The second is a 14 week, 350 hour welding program in which participants learn the fundamentals of Gas Metal Arc Welding. Both programs serve adults and are free to participants meeting certain eligibility criteria.⁴ Details of both programs are included in the research summary in Section 3 of this paper, as JARC was able to participate fully in the survey for both programs.
5. Manufacturing Renaissance (MR) also offers two programs that serve the neighborhood. MR's Manufacturing Connect program serves high school students who attend Austin Polytechnical Academy, and prepares student participants for careers and/or further education in manufacturing, engineering, and related fields⁵. Due to its focus on youth training, this program does not necessarily aim to place its graduates immediately into manufacturing jobs, as graduates are also encouraged to pursue further education. In addition, MR has a CNC training program for adults through the Austin Manufacturing Training Center⁶. Details of both programs are included in the research summary in Section 3 of this paper, as MR was able to participate fully in the survey for both programs.

² <http://www.bethelnewlife.org/our-investments/community-economic-development/advanced-manufacturing-program/>

³ <http://www.ccc.edu/colleges/daley/departments/pages/manufacturing--technology.aspx>

⁴ <http://www.jane-addams.org/jarc-programs/sectoral-job-training/>

⁵ <http://www.mfgren.org/signature-programs/austin-polytech-career-program/>

⁶ <http://www.clcr.org/signature-programs/austin-manufacturing-training-center/>

The third key component of the Workforce Collaborative project is the assertion that there are living-wage jobs available in the manufacturing sector in the Chicago area, and that these jobs will be accessible to west side residents who complete the manufacturing training programs outlined in Section 3. While by some estimates there are as many as 20,000 unfilled jobs in manufacturing in the Chicago area, and recent research has shown improvements in the manufacturing sector in Chicago (Wial, 2013), there is little concrete information available about how many jobs are available to west side residents who complete the training programs, and what types of barriers graduates face in terms of transportation, family obligations, and other opportunity cost related challenges. Section 4 of this paper provides a sketch of the Chicago manufacturing sector as it is currently understood. It is clear though, that the success of the AWC project is dependent on the development of deeper knowledge of the demand for workers in the Chicagoland manufacturing sector.

UNEMPLOYMENT IN THE AUSTIN NEIGHBORHOOD

Considering the role of and need for workforce training on Chicago's west side in general, and in the Austin neighborhood specifically, raises two key questions about the neighborhood⁷. First, what is the extent of unemployment and underemployment in the neighborhood? Second, what is the educational background of neighborhood residents, especially the unemployed? This second question is a useful guide to the job or training-readiness of unemployed and underemployed residents.

Population and Demographic Characteristics

The Austin community area is made up of 24 census tracts. The 2010 US Census found a total population of 98,514. The demographic characteristics of Austin residents are outlined in Table 1, below. The neighborhood is predominantly black (85.9% of residents) and over 1/4 (27.4%) of neighborhood residents are children. The poverty rate for the neighborhood is 30.6%⁸.

Table 1: Demographic Characteristics of Neighborhood Residents

Race		Age (Percentages out of total population)	
Black	85.9%	Children (0-17)	27.4%
White	7.6%	Adults (18 and over)	72.6%
Other	6.5%	Seniors (65 and over)	10.8%

⁷ For the duration of this paper, analysis will focus on the Austin neighborhood specifically.

⁸ Source: ACS 2008-2012

Unemployment and Labor Force Participation

Of Austin's total population, 43,335 are included in the labor force (either working or looking for a job). The unemployment rate⁹ for the neighborhood as a whole is 22.6 percent, or 9,821 unemployed neighborhood residents who in many cases could be candidates for the workforce training programs described in the next section. This estimate likely understates the extent of the unemployment in the neighborhood, since it includes only residents actively seeking work, and does not include discouraged workers or others not currently in the labor force who may also benefit from training and job placement assistance.

Education attainment for adults (aged 25 and over) in the Austin neighborhood is summarized in Table 2, below. Nearly a quarter (24.3%) of neighborhood residents have not completed high school and less than half (40.5%) have education beyond high school.

Table 2: Educational Attainment Rates in Austin	
<i>Percent of adults (25+) completing ...¹⁰</i>	
Less than high school	24.3
High school graduates	35.2
Some college	29.4
Bachelor's degree or higher	11.1

In addition, there is evidence that there is significant need for living wage jobs for employed workers. Of neighborhood residents considered to be employed (that is, working in any job, regardless of full-time/part-time status and job quality), an estimated 4,165 out of 33,554 workers, 12.4% of workers, have household incomes below the poverty line. Further, an estimated 1,665 workers who worked full-time, year round, live in households with incomes below the poverty line. This information about impoverished workers in the Austin community strongly suggests a need for access to better, higher quality jobs.

Overall, the census data for the Austin neighborhood suggests that there may be a need for career focused training programs such as the advanced manufacturing training programs discussed in this paper; across the neighborhood the unemployment rate is high relative to national averages. While the estimated unemployment rate nationally in the United States in 2012 ranged from 7.9 to 8.2 percent¹¹, the estimated unemployment rate in the Austin neighborhood was over 22 percent. In addition, nearly one in four adults in the neighborhood has not finished high school. Taken together, these statistics suggest a need for a short-duration strategy to prepare Austin residents for living wage jobs, along with the need for placement into these jobs.

⁹ Calculated as the percentage of the labor force not working, but actively seeking a job.

¹⁰ Source: ACS 2008-2012, Employment Status in Last 12 Months table

¹¹ Source: Bureau of Labor Statistics

MANUFACTURING TRAINING PROGRAMS SERVING THE TARGET NEIGHBORHOODS

ACT is building a database system that contains information about program sizes, seats available, enrollment, and placement. The findings of this policy brief draw exclusively on this data collected through an online survey completed by the training providers identified above.

Survey Methodology/Program Capacity

The survey was conducted with 5 advanced manufacturing programs in 3 agencies serving the Austin community. AWC and ACT have identified 7 programs in 5 agencies that serve the community. In our initial recruitment attempts, 3 of the 5 agencies agreed to participate in the survey, one refused, and one did not return our recruitment calls or emails. Table 3 indicates the capacity (in terms of the number of seats available for each program).

Table 3: Program Capacity					
	MRAP ¹²	MRMT ¹³	JAWFT ¹⁴	JACNC ¹⁵	DaleyMTP ¹⁶
2011	175	10	n/a	30	n/a
2012	175	18	15	35	n/a
2013	150	19	37	35	100
2014	150	24	55	35	144

The information about program capacity from the agencies that participated in the survey, together with the difficulty in obtaining full participation from all service providers, leads to the first finding of this study:

Finding #1: There is a significant undersupply of high skill manufacturing training programs serving the Austin community.

In the current year (2014) there are 408 seats available in high skill manufacturing programs that have a commitment to serve the Austin community. This study has not captured data for the whole universe of training programs that Austin residents could reasonably access. Rather, the 408 seats documented here represent organizations that have committed to implementing the kinds of best practices (collaborations, integrated service, etc.) that provide the greatest chances for successful training and job placement experiences for participants. Given the significant

¹² MRAP= Manufacturing Renaissance Austin Polytech Program

¹³ MRMT= Manufacturing Renaissance Manufacturing Training Program

¹⁴ JAWFT= Jane Addams Welding Program

¹⁵ JACNC= Jane Addams CNC Program

¹⁶ DaleyMTP= Daley College Manufacturing Training Program

numbers of underemployed and unemployed residents of the Austin community noted above, this number is low.

In order to estimate the undersupply of seats in high skill manufacturing programs serving the Austin community, an estimate of “potential demand” for high skill manufacturing training programs in Austin was generated using publically available data sets. According to US Census data¹⁷, 11.8% of Austin residents currently work in manufacturing.

Following this trend, it is reasonable to assume that 11.8% of currently unemployed residents would go into manufacturing upon obtaining employment. Using this 11.8% as a way of estimating the number of potential trainees as a portion of neighborhood residents who are unemployed, underemployed, or out of the labor force yields an estimated 4,374 residents who might be candidates for advanced manufacturing training (see Table 3). Based on an estimated 9,821 unemployed residents, this suggests that approximately 1,159 residents could benefit from employment in manufacturing. Based on the estimated 4,165 employed residents living in households with income below the poverty line, an additional 492 residents are potential candidates for the training. Finally, of the 23,083 adults of working age in Austin who are classified as “out of the labor force” in the Census, 2,723 could potentially benefit from this kind of training as well.

Table 3: Potential Demand for Manufacturing Training

	Austin Residents	Potential Manufacturing Workers (11.8% of total)
Unemployed	9,821	1,159
Underemployed	4,165	492
Out of Labor Force / Discouraged Workers	23,083	2,723
Total	37,069	4,374

While these measures are crude, this preliminary analysis demonstrates that the supply of high skill manufacturing training programs serving the Austin community does not match the potential demand for them.

¹⁷ Source: US Census Local Employment and Hiring Dynamics Survey

Budget/Costs Per Participant

Table 4 provides information about budgets and costs per participant gathered in the survey.

Table 4: Program Budgets and Costs per Participant				
Agency Name	Program	Annual Budget	Cost Per Participant	Cost to Participant
Manufacturing Renaissance	Manufacturing Connect	\$400,000	\$2,400	0
Richard J. Daley College	Manufacturing Technology Program	n/a	\$89.00/credit hour	\$89.00/ credit hour
Jane Addams Resource Corporation	CNC Fast Track	\$367,882	\$10,510	0
Manufacturing Renaissance	Austin Manufacturing Training Center	\$182,463	\$8,000	\$200 refundable deposit
Jane Addams Resource Corporation	Welding Fast Track	\$520,934	\$9,471	0

The training programs that responded have relatively small budgets (with the possible exception of the Daley College program). These numbers do not take into account a 2014 grant received by Manufacturing Renaissance, but taken as a whole, this study finds that there is less than 2 million dollars per year being spent on advanced manufacturing training programs that have committed to serve Austin residents through the AWC.

Recruitment

Respondents provided a variety of responses to the question of how they recruited participants. All programs reported that participants came to the program through word of mouth, and four of the five respondents reported that they recruited participants through walk-ins, referrals from other agencies, and targeted event recruitment. Three of the five programs responded that they recruited participants through referrals from employment service agencies, and targeted but unspecified recruitment in certain communities and educational institutions. Further in-depth study is required to better understand the dynamics of recruitment and how the strategies employed by programs lead to the current demographic mix of participants.

Program Data

Table 5 shows reported counts of participants starting each program, how many completed the program, and how many were placed in jobs through the program. There is a wide disparity in

these numbers between programs. This is at least partially a function of the differing models and target populations. In particular, Manufacturing Renaissance's Austin Poly-Tech program (MRAP) should be expected to have lower job placement numbers, given how it functions as part of a high school-based program. Because participants are high school students, job placement is only one of several possible desirable outcomes (also including college, additional vocational training, etc.) for participants in this program. Three of the programs have rolling admissions policies, 2 operate under fixed cohort models, and 3 are full-time programs.

Surprisingly, as of 2013, the latest year for which complete data is available, these programs were operating at 57.5% capacity: of 341 seats available in 2013 in these programs, only 196 were filled. According to respondents, only one program (the smallest) was at capacity.

This leads to a second finding:

Finding #2: Despite significant potential demand for training, there is a challenge filling program seats. This challenge is most profound for programs based in education institutions.

Table 5: Program Starts, Completions and Job Placements

		2010	2011	2012	2013	2014
MRAP	Started	n/a	91	58	30	44
	Completed	n/a	40	58	25	36
	Job Placement	n/a	2	15	5	n/a
MRMT	Started	n/a	10	18	19	n/a
	Completed	n/a	n/a	7	12	n/a
	Job Placement	n/a	n/a	4	12	n/a
JAWFT	Started	n/a	n/a	17	33	n/a
	Completed	n/a	n/a	14	27	n/a
	Job Placement	n/a	n/a	14	24	n/a
JACNC	Started	30	33	34	34	n/a
	Completed	27	30	33	27	n/a
	Job Placement	23	29	31	26	n/a
DaleyMTP	Started	n/a	n/a	n/a	80	120
	Completed	n/a	n/a	n/a	n/a	n/a
	Job Placement	n/a	n/a	n/a	n/a	n/a

Respondents were asked why they believed that individual participants were unable to pass through certain stages. First, respondents were asked why they believe individuals do not finish the program. They answered:

Reasons for Not Finishing Program:

- Family Obligations (3)
- Immediate Employment Opportunity (3)
- Differing Expectations (2)
 - Do not like program, not what was expected, program was too difficult
- Terminated for attendance issues (2)

The two most common reasons given relate to economic opportunity and the challenging opportunity costs facing participants of limited means. Those who do not complete the programs are often pulled away by immediate needs or obligations, versus dissatisfaction with the programs themselves.

Secondly, respondents were asked why they thought participants might remain unemployed after completing the program.

Reasons for Not Securing any Job:

- Did not look for a job (2)
- Busy with family or other responsibilities (2)
- Soft Skills (non-technical employment related skills or attitudes) (1)
- Mental/emotional difficulties (1)

It is unclear if respondents considered the categories exclusive (that is “did not look for a job” is a different non-overlapping category from “busy with family or other responsibilities”), but it is interesting that soft skills, family or other responsibilities, and mental/emotional difficulties all point to non-technical reason for not securing a job.

Finally, respondents commented on why certain individuals did not obtain a job using the skills they had learned in the program; in other words, after completion, this group secured a job, but not in the manufacturing sector.

Reasons for Not Securing an Advanced Manufacturing Job:

- Did not want to work in manufacturing, (2)
- Needed a job right away (2)
- Unable to find a job in manufacturing (1)
- Transportation difficulties (1)

Notably, being unable to find a job in manufacturing was not one of the top barriers to employment. Rather, other challenges, most significantly the need to go to work immediately, led program participants to other industries. This result provides preliminary evidence that labor demand in manufacturing is strong (jobs are available) but that program participants face numerous challenges that prevent them from pursuing these jobs.

While it is important not to overstate the incidence of voluntary abandonment of the programs or the likelihood of those who complete programs not securing jobs or jobs in advanced manufacturing, respondents did indicate that they faced challenges in retaining participants. A

third finding flows from the repeated invocation by respondents of barriers related to the challenges of deferred employment facing presumably low-income participants.

Finding #3: There remain barriers to program completion and the ability of participants to fully take advantage of their newly acquired skills due to the challenges of deferring employment and income.

Table 6 shows the services that respondents claim participants receive. The top three employment-related services (case manager/counselor, job coach, and job-readiness training) are accessed by more than three-quarters of participants in three of the five programs studied. As the services become less directly connected to the central task of employment and job training, fewer participants access them, either through agency programs or through referrals. It is unclear whether or not this is because there is limited demand for these auxiliary programs or because agencies simply cannot provide them while maintaining high quality training programs. The cells in Table 6 indicate the percent of respondents (at the program level) who replied that their participants access a given service. For example, 20% of respondents (1/5) said that between one and 25 percent of participants meet with a case manager/counselor, 60% (3/5) indicated that between 76 and 100 percent meet with a case manager/counselor, and 20% (1/5) did not know what percent of participants meet with a case manager/counselor.

	0%	1-25%	26-50%	51-75%	76-100%	DNK/NA
Participants meet with case manager/counselor		20%			60%	20%
Participants meet with job coach		20%	20%		60%	
Participants receive job-readiness training			40%		60%	
Participants receive transportation	20%				40%	40%
Participants receive housing assistance	20%	20%				60%
Participants receive substance abuse referrals	20%	20%				60%
Participants receive child care assistance	20%	20%				60%

The jobs that participants secure tend to be higher quality jobs in terms of wages and benefits than the wages and benefits of the average Austin resident. Programs that tracked program graduates' wages consistently reported wages in the \$10-\$20 range and significant benefits. Those that tracked 90-day employment numbers also showed a high level of job retention at this milestone. Program providers also stress the potential for relatively frequent wage increases in

advanced manufacturing jobs. While jobs start in the \$10-20 range, this hourly wage will quickly increase for a successful employee.

Finding #4: There is good evidence that program graduates secure *high quality* jobs.

All of the programs studied have basic academic qualifications required for admission. Listed below are the academic requirements reported by the various programs.

Academic Requirements:

- Enrolled in high school (for MR youth program)
- GED, Reading 99 (Compass System¹⁸)
- 9.0 grade reading and math
- 8.5 TABE (Test of Basic Adult Education) score
- 8 TABE score, or 8th Grade completion

While these requirements seem easily attainable by most adults, anecdotal evidence from ACT staff and others working in the Austin community indicates that these are challenging standards for many of the community's unemployed and underemployed residents to achieve. In response to this concern, three of the five programs have bridge programs as part of their agencies' service menu and three of the five programs also indicate that insufficient academic qualifications (along with drug tests and income/asset tests) are key reasons for potential participants to be turned away. Bridge programs provide participants with supportive services, academic skill improvement in writing, math, and reading, and help in test preparation. This leads to a fifth finding:

Finding #5: Integrated bridge programs are important to ensure maximum participation in advanced manufacturing training.

Part of the identified challenge facing participants who need bridge programs or other supportive services is that agencies are not completely transparent in their programs, requirements, and outcomes. The challenges involved in soliciting participation in this study from workforce development agencies, as well as some of the comments made by agencies that decided not to participate, indicate a lack of commitment to transparency and collaboration on the part of multiple organizations and providers. This lack of transparency likely has significant consequences for providers seeking to increase their impact and for participants attempting to understand their options and what they need to do to accomplish their goals. This leads to our sixth finding:

Finding #6: There is a need for greater transparency across the system of workforce development providers and associated social service providers

¹⁸ This is an online preparation and testing system for the GED.

MANUFACTURING JOBS IN THE CHICAGO AREA

Surprisingly little concrete information is available about manufacturing workforce demand in the Chicago area. In an April 2014 press release¹⁹ from the City of Chicago, Chicago Federation of Labor President Jorge Ramirez suggested that there were, at that time, 20,000 vacant manufacturing jobs in the Chicago area, and that this number is expected to increase as baby boomers currently holding manufacturing jobs retire.

The February 2013 report *Locating Chicago Manufacturing* (Wial 2013) suggests that in 2011 manufacturing jobs made up 9.5 percent of all jobs in Chicago (411,000 manufacturing jobs), down from 12.9 percent of jobs in 2001. About 47 percent of the regions manufacturing jobs are located in Cook County, with 16 percent within the Chicago city limits and an additional 31 percent in suburban Cook County. The average salary for manufacturing jobs in Chicago in 2011 was \$67,168, about 16 percent above the average for all jobs in the region.

As discussed in Section 3, the advanced manufacturing training programs targeted by the Austin Workforce Collaborative train workers specifically for careers in high skill manufacturing. It is not clear from available studies how many people in the Chicago area are currently employed in these specific manufacturing sectors, or what additional demand for workers may exist in these sectors.

A 2013 report from the Chicago Metropolitan Planning Agency (CMAP) argues that Chicago's comparative advantage is not in low-skill but in advanced manufacturing, but also concedes that there is limited agreement in the literature even on what constitutes advanced manufacturing. This report predicts an increase of 500 jobs in welding in the coming decade, as welders are expected to be in high demand, and describes welding as a pathway to a high paying high skilled career (CMAP, 83).

While there is a good deal of information available suggesting that the manufacturing sector in Chicago is strong and improving, it is unclear whether this general strength and recovery translates directly into opportunity for graduates of the training programs serving Austin. There is also a dearth of information on what the workforce needs are for employers in and around Austin and Chicago's west side, which leads to our seventh and final finding:

Finding #7: It is essential to better understand employer needs in high skill manufacturing to ensure participants continue to be trained for high quality jobs in growing sectors.

¹⁹ http://www.cityofchicago.org/city/en/depts/mayor/press_room/press_releases/2014/apr/mayor-emanuel-announces-austin-polytechnical-academy-receives--2.html (Accessed July 10, 2014.)

CONCLUSIONS and POLICY IMPLICATIONS

This project touches on a number of critically important policy questions. The idea that a “skills gap” is responsible for keeping unemployed and underemployed workers out of living wage manufacturing jobs is quite prevalent in current economic development policy discussions. This skills gap is given as a justification for independent or publicly funded job training programs. This study provides limited evidence that job training programs lead to long-run improvements in employment for participants.

This study suggests that the high skill manufacturing programs surveyed provide the opportunity for almost all participants to secure higher quality (in terms of wages and benefits) employment than the average Austin resident. Somewhat paradoxically, there is an undersupply of seats (relative to potential demand) in high skill manufacturing training programs serving Austin and the west side, and there remain challenges to filling available seats with Austin residents. Some of those barriers are related to supportive services, some are related to transparency and collaboration across the system, and some are related to a lack of targeted recruitment of Austin residents to these programs. Finally, there is a significant need to better understand the nature of the manufacturing sector to ensure that participants are receiving the proper training in order to become qualified for the jobs that are available.

This study underscores the need for increased collaboration between high skill manufacturing training programs that achieve better transparency across the system and better understanding of the paths to the high quality jobs that come as a result of this training for almost all program participants to date.

Supporting Materials (Bibliography)

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