

**SkillUp**  
WASHINGTON

# Manufacturing Employer Survey

MARCH 2016

**MANUFACTURING  
ADVANCEMENT  
PATHWAYS PROJECT**





This report was commissioned by SkillUp Washington, the workforce education funders' collaborative at the Seattle Foundation. For more information about SkillUp, please visit [www.skillupwa.org](http://www.skillupwa.org).

Many thanks to the Boeing Company for supporting the Manufacturing Advancement Pathways Project, which catalyzed the employer outreach and engagement summarized in this report.

Thanks also to our various MAPP college and community partners for sharing your employer contacts and engagement activities, which helped frame this report, including:

- South Seattle College, Georgetown campus
- North Seattle College
- Everett Community College
- Shoreline Community College
- Renton Technical College
- Seattle Jobs Initiative
- Apprenticeship and Non-Traditional Employment for Women
- Pacific Associates

We would like to especially thank Dan Bernard and Pacific Associates for your tireless outreach to employers and encouraging them to complete this survey. This report could not have been completed without you.

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“In our area, we are getting more and more manufacturers starting businesses and growing their current ones – boats, airplane parts, health products, fishing poles, food products. There will continue to be a need for welders, CNC machinists, assembly workers, packers. I would LOVE to see these respectable jobs more valued in the public’s eye - they are great jobs that open lots of doors and change lots of lives.”

– Manufacturing Employer

# MANUFACTURING ADVANCEMENT PATHWAYS PROJECT (MAPP)

## EMPLOYER SURVEY

### I. Background

SkillUp Washington, a workforce funding collaborative, received a three year grant from the Boeing Company in 2012 to increase the connectedness and capacity of the Manufacturing Advancement Pathways Project (MAPP) at four community and technical colleges in the Puget Sound region. Three years later in November 2015, the Boeing Company awarded SkillUp an additional one-year grant to enhance the career pathway efforts of job seekers and entry-level workers who have low basic skills in the advanced manufacturing and aerospace industries.

The MAPP partners, which include college and workforce development organizations, have met regularly over the past five years. SkillUp Washington has convened and staffed this work. During this time MAPP partners have taken many bold and innovative actions to align their resources, and increase their understanding of where and how the manufacturing career pathway could be strengthened to meet the current and emerging needs of employers. For example, to more fully understand and streamline employer engagement efforts they developed a master list showing how and where employers were involved in manufacturing career pathways. Each of the MAPP college partners (South Seattle College, Shoreline College, Renton Technical College, and Everett Community College) provided data about the role(s) of employers in their manufacturing career pathway work. As part of their next step capacity building efforts the MAPP partners decided to survey a subgroup of employers whom they felt could provide more in depth information. The balance of this report focuses on the survey purpose, methods, results and implications.

## 2. Survey Purpose and Methods

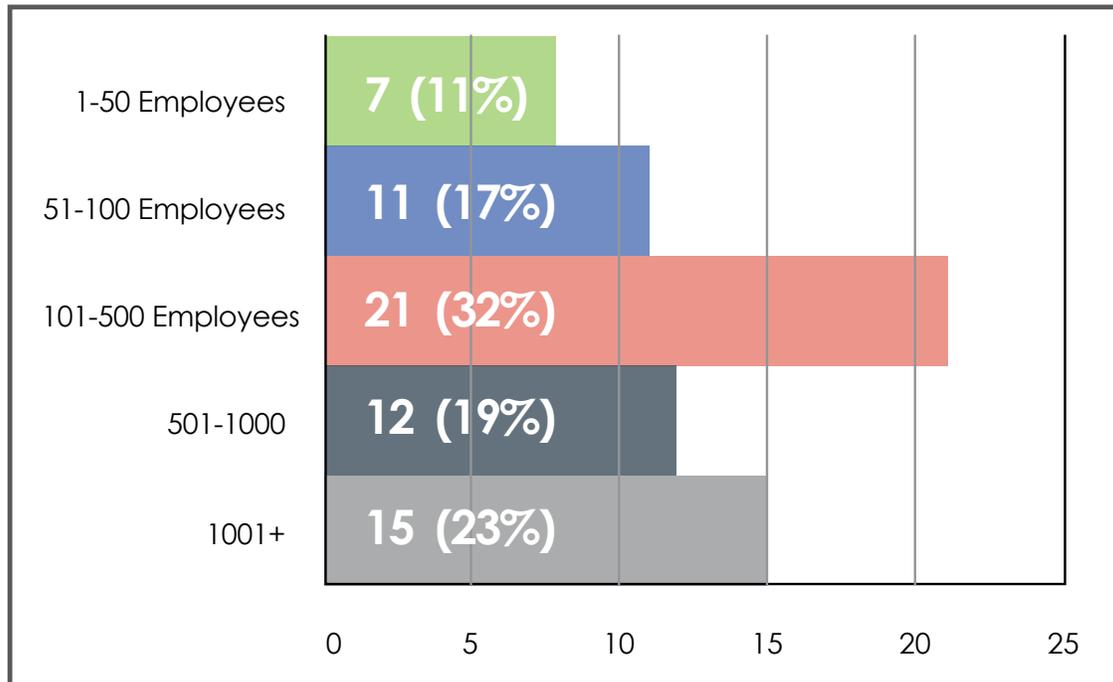
The purpose of the MAPP Employer Survey was to use information provided by manufacturing employers to strengthen the talent pipeline to high demand entry and mid-level manufacturing jobs. The employer survey respondents were identified by MAPP partners. Surveys garnered information about:

- Employer Hiring Needs, Sources and Priorities;
- Employer Perceptions of Community and Technical College Graduate Preparedness for Work;
- Employer Recommendations for Improving Student Preparedness
- Employer Feedback about Workforce Retention Obstacles, Advancement Requirements and Opportunities; and
- Employer Partnerships with Community and Technical colleges

Pacific Associates, a MAPP member, under contract with SkillUp Washington, distributed the MAPP Employer Survey and collected results. As a contractor to the Seattle-King Workforce Development Council, responsible for managing employer partnerships in the area of manufacturing, Pacific Associates has a deep knowledge of the needs of manufacturing employers. Survey results were summarized in this report by Business, Government Community Connections, under contract with SkillUp Washington.

Sixty-six employers completed the 19 question on line survey tool. The majority (68%) of survey respondents were human services staff or managers. Another 18% identified themselves as recruiters. Examples of other respondent job titles included Company Owners, Talent Acquisition Managers, General Managers, Machining Specialists, Client Relations Managers, Senior Staff Analyst, Strategic Account Directors and Operations Managers. The number of employees in the 66 companies differed.

### 3. Number of Employees in Surveyed Companies



## SURVEY RESULTS

### 3.1 Employer Hiring Needs, Sources, and Priorities Employer Entry and Mid-level Hiring Needs

Employers self-identified a wide range of entry and mid-level positions as priority hiring areas for the next 12 months. Most anticipated positions were in the entry-level with fewer in the mid-range. Projections varied widely across employers. The highest demand areas were assembly workers and entry-level production with total need across the employer respondents projected at over 1,000 workers for each of these job categories. The table below presents the projections shared by employers. The numbers should be viewed cautiously, as they are estimates and could include be inflated as one company was a staffing agency.

## EMPLOYER HIRING PROJECTIONS

| ENTRY AND MID-LEVEL POSITIONS NEED              | NEED FOR NEXT 12 MONTHS     |
|---|-----------------------------|
| Assembly<br>(warehouse, mechanical, electronic) | 1,198 positions anticipated |
| Entry-level Production                          | 1,130 positions anticipated |
| Quality Control and Inspectors                  | 426 positions anticipated   |
| Machinist (1, 2, tool-builders)                 | 383 positions anticipated   |
| CNC Machinist                                   | 247 positions anticipated   |
| Welding (Gas Tungsten and Arc, TIG)             | 195 positions anticipated   |
| Engineer (project and production)               | 168 positions anticipated   |
| Carpenter Apprentices                           | 100 positions anticipated   |
| Customer Service Representatives                | 80 positions anticipated    |
| Truck Drivers and Relief Drivers                | 80 positions anticipated    |
| Buyers  | 41 positions anticipated    |
| Engineer (mechanical)                           | 40 positions anticipated    |
| Material Handlers                               | 35 positions anticipated    |
| Machine Maintenance Technicians                 | 17 positions anticipated    |

## Changes in Industry that will Affect Company Hiring and Growth Needs

Employers reported in order of frequency, highest to lowest, that:

- new technology will require new training (49%)
- pending retirements will result in turnover (48%)
- regulatory environmental changes (11%); and
- new technology will result in layoffs (6%)

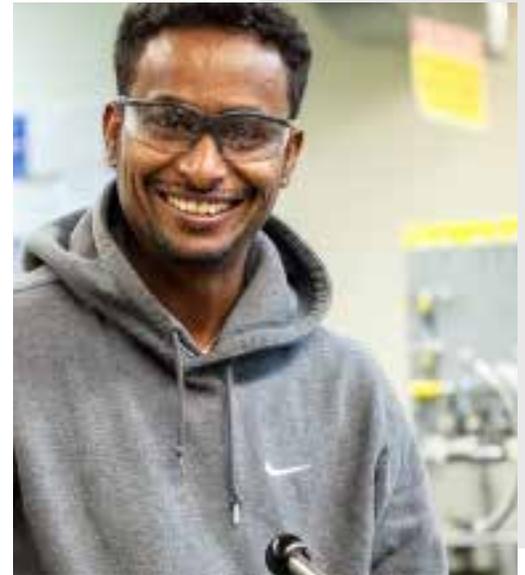
Staffing agencies noted that they had to be responsive to all of the above issues. One employer said, “No one change will drive us out, but as a manufacturer in this area each regulatory change makes it more difficult to compete with foreign companies. Eventually, it just won’t make sense to operate here anymore.”

Employer situations varied and shed light on the intricacies of the labor market. For instance, the aviation cycle was cited as a factor, as were changes posed by quotas on fishing fleets. More than one employer identified the need to increase the value of manufacturing jobs in the public’s eyes. Many employers anticipated growth.

## Employer Hiring Sources

The main hiring and recruitment sources employers used to find applicants in order of frequency include:

- internal human resources departments (81%)
- staffing agencies, company website postings (70%)
- WorkSource (70%)
- online web services (66%)
- community technical colleges (55%)
- staffing agencies/recruiters (47%)
- community-based organizations/nonprofits (22%)
- 4 year universities (19%)
- high schools/high school skill centers (12%)



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We have grown tremendously in the past few years and anticipate the same moving forward... We are in a high growth mode so right now are planning ahead and hiring people well in advance of our demands. We expect the growth to continue for the next several years (and beyond)... Expanding business does not have the incoming staff of the caliber we need.

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Craigslist, veteran resources and LinkedIn were also cited in narrative responses. Most of the companies (72%) did not use software screening tools to identify promising applicants.

### Employer Hiring Priorities

Most companies (62%) do not prioritize special populations; 37% prioritized veterans; 23% women and 6% young adults. One employer reported that staff attended military job fairs. Another indicated that his company prioritized hiring individuals with disabilities. One wrote, “We look to hire a diverse population of people”. Another said, “We have recruiting programs to encourage vets and women. We are very active in assuring a diverse applicant pool.” One employer pointed out that: “Those from protected classes are reviewed in the same matter as other candidates.” Another responded. “We follow state and federal laws.”

## 3.2 Employer Challenges Filling Jobs

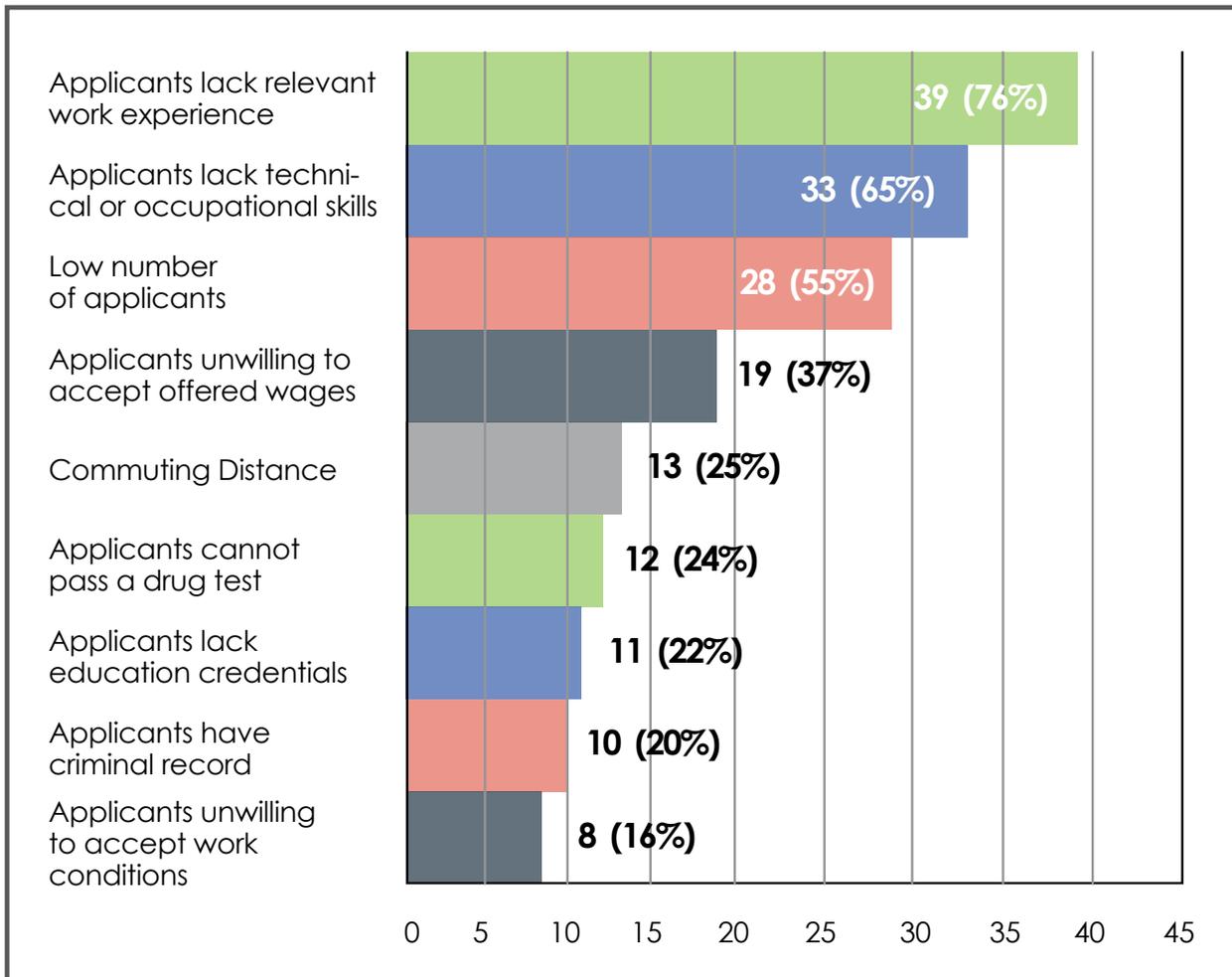
### Reasons Employers Have Difficulty Filling Jobs

Almost three fourths (74%) of companies had difficulty hiring for certain positions. Factors cited included spotty work histories, lack of technical and poor interviewing skills, unrealistic job expectations, resistance to working in drug-free workplace requirements, and shortage of candidates due to low unemployment.

One employer wrote, “There are a number of entry level manufacturing jobs that can certainly lead to other higher paying jobs, yet too many are unwilling to start at the bottom, and want to start higher right away. The “soft skills” of showing up on time and being teachable and patient are too often missing. Also, there are a growing number of people who think that because marijuana is now legal, they are quite upset when they don’t pass a drug test and can’t work in manufacturing. They do not know that employers are in their legal rights to expect a “drug free” workplace.” Another reported, “Applicants lack soft skills needed to succeed in this workplace, applicants with credentials can’t demonstrate basic skill levels needed to perform the work.”

The table below shows the reasons employers cited for experiencing hiring difficulties, in order of frequency, highest to lowest.

## REASON FOR HIRING DIFFICULTY



### 3.3 Employer Perceptions of College and Technical College Graduate Preparedness for Work

The recommendations in the six areas below are direct quotes from employers.

The numbers of employers who rated one or more of the 11 college programs were too low to draw conclusions about individual college programs. The overall preparedness ratings across the 11 programs are very positive for 57% of the graduates. A breakdown of responses on the five point scale revealed that employers thought that:

- 3% of graduates were not at all prepared
- 3% of graduates were not very prepared
- 36% of graduates were somewhat prepared
- 45% of graduates were very well prepared
- 12% of graduates were extremely well prepared

### 3.4 Employer Recommendations for Improving Student Preparedness

- Job Search Preparation: Give a lot of attention to resume building and interviewing... Work on setting realistic pay expectations... Applicants ask for high wages with only their course completion as a reference... They should have resumes...Promote professional dress and speech... Tell students to show up on time, treat others with respect, not be rude to the front desk person and expect that to be okay with the recruiter, dress neatly, have a thorough understanding of a “drug free” workforce and associated safety hazards...remind students about the importance of recommendations from previous employees
- Job Guidance: Emphasize attendance, being on time, following instructions, communication, workplace culture...Offer social skills training, including how to interact with other employers...Inform students to be eager to start from ground zero and work your way up... Offer more training on soft skills... Emphasize the importance of top performance even in low skill, lower paying jobs, and point out that these jobs can lead to higher pay.
- Integrate hands on experience: Encourage students to engage in part-time jobs that are training-related when they are in school... Incorporate on the job, real world experience as part of the course...Do internship as part of their education.
- Expand awareness of training and employment opportunities: Remind students that CNC and Aviation are not the only jobs out there. Advise that they learn basic manufacturing skills and methodologies.

- Focus on specific skills/training: Offer more hands-on work; and understanding of work instructions and blueprint reading...Teach more GTAW welding classes...Provide strong precision measuring and math skill training...Offer manual (not just CNC) training... Offer more inspection skill training.
- Communication: Promote better networking between colleges and employers... Continue to partner with companies.

### 3.5 Employer feedback about workforce retention obstacles, advancement requirements and opportunities

#### MAIN REASONS EMPLOYEES DON'T REMAIN IN POSITIONS FOR THREE MONTHS

Employers shared their feedback about why employees don't remain in their positions for at least three months. The chart below shows poor attendance, deciding the job is not right for them, and poor interpersonal skills were the top three reasons for not remaining in jobs.

#### Employers wrote:

- Our positions are 12 hours long, many think they can handle this but find it too demanding
- Applicants do not have a clear picture about what work is like because we do not allow plant tours

#### They reported that some workers have:

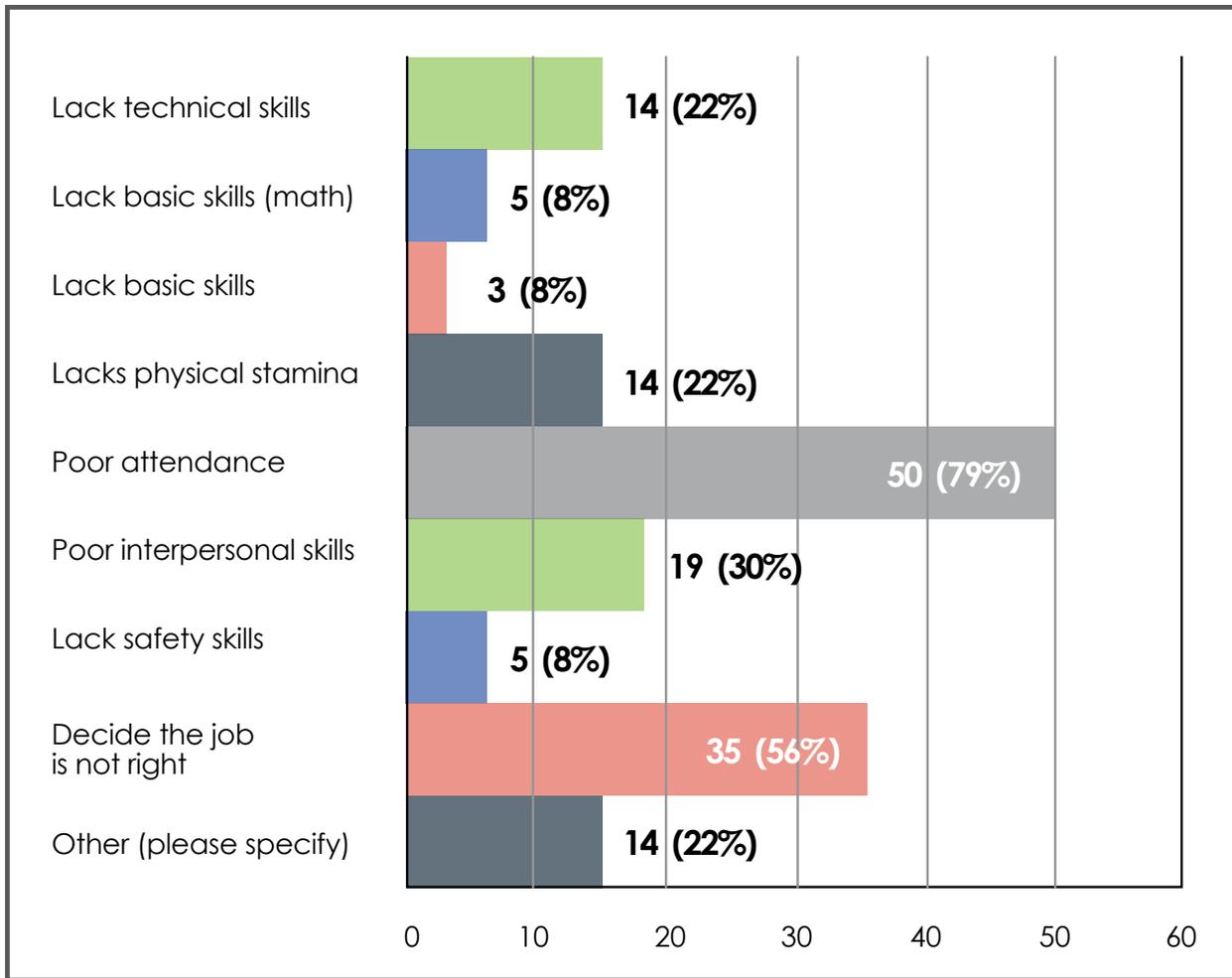
- A lack of understanding of the benefits of a “stepping stone” type job and the fact that the skills and recommendations gained by giving any job their best effort cannot be underestimated
- No real world experience, and don't seem to understand the importance of being on time every day, a problem which is most prevalent in the 18 to 30 age group
- A work ethic or personality that is not a good fit
- A lack of understanding that their performance relates to the profit/loss of their employer

#### HOW WORKERS ADVANCE FROM ENTRY TO MIDDLE WAGE JOBS IN COMPANIES

Employer advancement systems differed; 24% of key respondents offered registered apprenticeships, 62% offered tuition assistance and 31% did not offer either of these opportunities.

#### Employers explained:

- We use a pay system, performance system with identified skills at every level.
- All promotion opportunities are posted internally and employees are encouraged to apply if they meet the minimum requirements.
- For most positions it is a matter of time. You can't move up until you've been exposed to your area more and have increased your skill set in that area.



- At many companies getting promotions required proof of skills. They get signed off on skills, promotion to management is competitive.
- Workers are assessed by the department head to have the potential for increased responsibility, and then are expected to work well, once provided with this opportunity.
- In apprenticeship it is a progressive every 6 months. As a machinist it is self-motivation. If you excel, then you advance if you show competency by meeting the job description requirements.

Employers reported that a person is most likely to advance from entry to middle level jobs within their company if they:

- Demonstrate an above average work ethic
- Have good motivation and attendance
- Show that they can quickly learn, and have a higher than average skill set
- Explore any and all positions that interest them, including spending time job shadowing or cross training

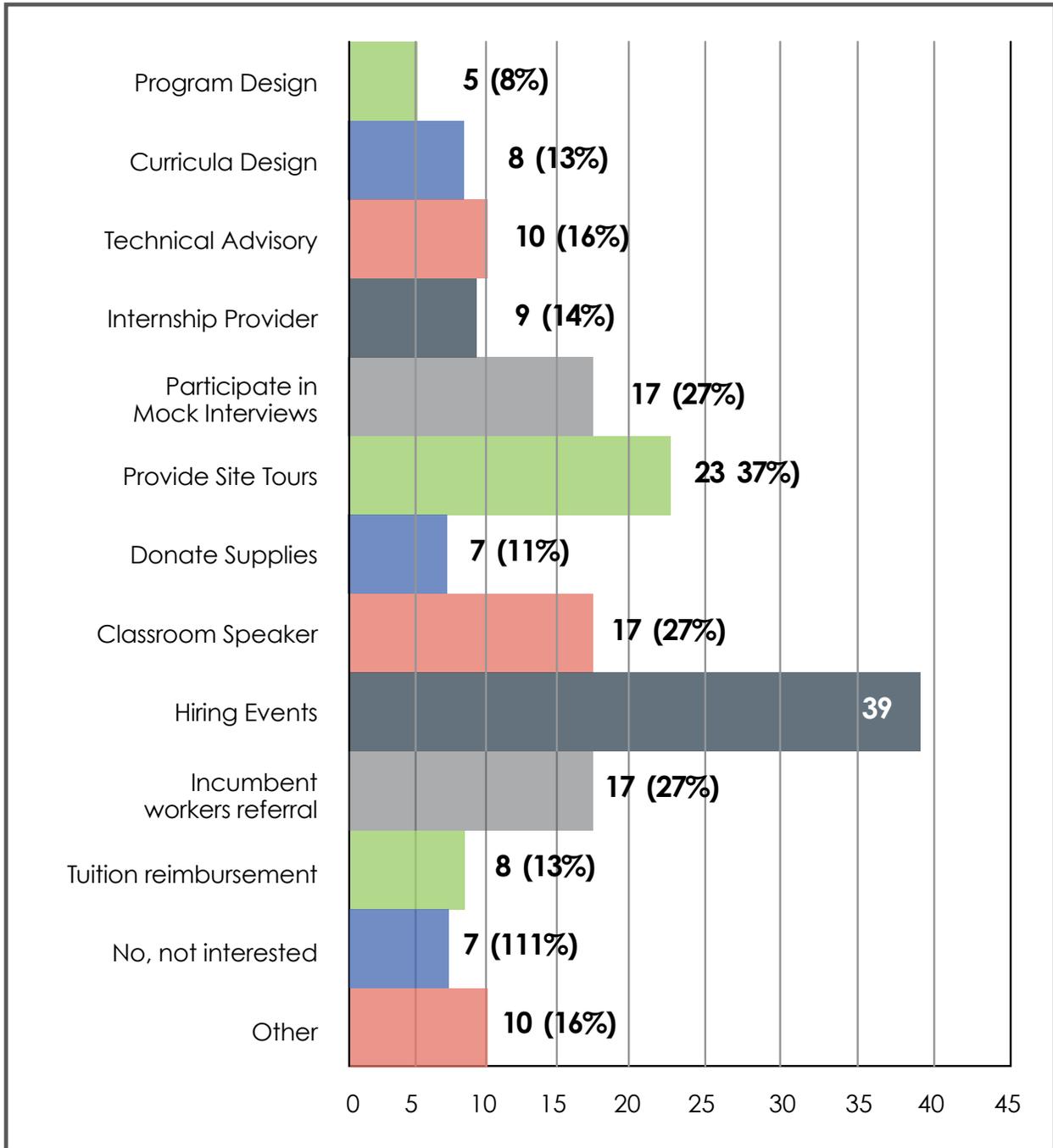
- Show time and skill improvement in day to day tasks, are willing to try new things
- Ask for continued opportunity to grow
- Have a great attitude and ability to be cross-trained
- Take direction well, including criticism
- Demonstrate willingness to work overtime
- Have a college degree
- Are considered an employee in good standing
- Show a commitment to efficiency and quality
- Participate in lean events to understand improvement

### **OPPORTUNITIES FOR ADVANCEMENT WITHIN AND ACROSS CATEGORIES**

Most employees said there are advancement opportunities within and across categories, though some reported it is more common to advance in the same category or department. Advancement examples follow:

- Assemblers have opportunities to be promoted from a lead to supervisor and some move to other areas, including shipping and inventory.
- Assembler positions lead to technician and engineering jobs and sometimes engineers become directors and program managers.
- Generally, within occupational categories employees will begin learning advanced skills and move into skilled machine operator positions in the same area where they started their work as an unskilled machine operator.
- Machinists advance to manufacturing engineers.
- Entry level manufacturing jobs open the door for more responsibility, supervisory positions, and jobs using different lines or working in other areas.
- Oftentimes operators in manufacturing shops advance to lead of a work cell within the shop.
- Trailer-packers sometimes pursue employment as machine operators.
- People may start in a shift that may not be ideal, such as night or swing shifts, but as time goes on with proven work history, and then later advance into a job where they have a greater opportunity for work-life balance.
- With any job (welders, CNC, basic assembly) the better a person does that job and the more dependable they show themselves to be, the more the company will want to hold onto them and make sure they are happy.
- Production workers can move from line staff positions to a supervisor and “on up”.

## EMPLOYER INVOLVEMENT IN WITH COMMUNITY AND TECHNICAL COLLEGE TRAINING



## 3.6 Employer Partnerships with Community and Technical Colleges

### How employers currently partner with community and technical college training programs

As the bar chart below shows, employers partnered with community and technical college training programs in many different ways. Almost half (48%) participated in hiring events, including job fairs; 40% provided site tours; 23% participated in mock interviews and 23% provided internships. Over a fourth however, do not partner in any of these ways (27%).

### Employer interest in partnering with community and technical college training programs

The most frequently mentioned ways that employers were interested in partnering with community and technical colleges included: hiring events (62%); site tours (37%); classroom speakers (27%); and mock interviews. Sixteen (16%) are not interested in partnering. This number is lower than the 27% who currently do not partner in any of the ways identified on the bar chart below. The data suggests that there is an opportunity to engage new employers in partnerships and build on existing partnerships.

## 4. Recommendations

The survey results suggest that the manufacturing talent pipeline capacity building efforts need to include:

### Timely collection and use of employer feedback

Mechanisms for systematically garnering feedback from employers need to be put in place, focusing foremost on those who hire graduates of college and training programs. The methodology and system for routinely doing so is not in place. This information could help inform and improve curricula design and employer engagement efforts. Perhaps conversations with known employers could be initiated to start this process, while a more sustainable and comprehensive solution is being forged.

## **Long term Effects of Programs on Employment and Next Steps Education**

The routine and longer term collection of data that could be attributed in part to student engagement in training programs is a priority, drawing upon approaches utilized by the Seattle-King Workforce Development Council and the Education Research and Data Center (ERDC). This effort could promote strategies which extend the time frame and scope to include long term engagement of participants in next step education and employment than is currently tracked. This information could be very informative for understanding career trajectories and for marketing. Strategies to assess the level of interest and costs to do so would be a fundamental first step to effectively drive this effort.

## **Positive branding and promotion of manufacturing careers**

Jobs in manufacturing are not widely or effectively promoted to job seekers and community based organizations. Beginning in the K-12 system and beyond, educators, career advisors, outreach specialists, employer and industry partners need to take a more active role in sharing information that introduces the “new world” of manufacturing and the breadth of job opportunities.

## **Integration of employer job preparedness and career advancement recommendations from this report into manufacturing training curricula**

Employers who responded to this survey shared their candid observations and advice about how to promote the job preparedness and career advancement outcomes of students. This information would be good to share with manufacturing navigators as well as navigators from different sectors, as many of the employer recommendations have broad application to other industries.

## **Increased outreach to engage employers in community and technical college training programs**

A methodology for determining which manufacturing employers are/are not engaged in hiring community and technical colleges needs to be in place. Searches of employer openings, perhaps using Burning Glass, reviews of WorkSource hot lists, feedback from the Manufacturing Industrial Council or other manufacturing-affiliated groups and students could be conducted to determine which employers are most likely to have job openings appropriate for graduates. Ideally these searches would be conducted at prescribed times with cross sector partners to ensure that the process is transparent, rigorous and shared. Personalized outreach to these employers could be beneficial to graduates and college and training programs.

## ATTACHMENT A

# MAPP EMPLOYER SURVEY RESPONDENTS

Aero Controls, Inc.  
Aero-Plastics  
Aerojet Rocketdyne  
AIM Aerospace  
AMT  
ASKO Processing, Inc.  
Astronics AES  
ATM Precision Measuring  
B/E Aerospace, Inc.  
Boeing  
Cablecraft Motion Controls  
Continental Mills  
Crane Aerospace (America) & Electronics  
Diversified Industrial Services  
Electroimpact  
Elisson Technologies Northwest  
Esterline/Korry Electronics  
Exotic Metals Forming Company, LLC  
Exotic Tool Welding, Inc.  
Fluid Motion, LLC  
Flow International Corporation  
Franz Bakery  
GM Nameplate  
Heatcon  
Hexcel  
IDL Precision Machining  
Janicki Industries  
Jemco Components & Fabrication, Inc.  
Jorgensen Forge  
Kelly Services  
King Machine  
Link Staffing Services Machinists, Inc.

Madden Industrial Craftsmen  
National Products/RM Mounts  
Nucor Steel  
Oberto Brands  
Orion Industries  
J.D. Ott Company, Inc.  
Out of the Box Manufacturing  
PACCAR Parts  
PCC Aero  
Physio Control  
Pioneer Human Services  
Precor  
Rainier Industries, Ltd.  
Red Dot Corporation  
Romac Industries, Inc.  
Senior Aerospace Absolute Mfg.  
Senior Aerospace AMT  
Service Linen Supply  
Spectralux  
Terex AWP  
Terra Staffing  
ThyssenKrupp Aerospace  
Toray Composites (America) Inc.  
Tradesmen International  
Trojan Lithograph Corp.  
UniSea, Inc.  
University Swaging  
US Seafoods  
West Sound Workforce  
Vigor  
Zetec

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