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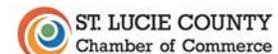
Treasure Coast Skills Gap Study



The St. Lucie EDC gathered together a group of business and educational leaders to assess the challenges and uncover solutions that will begin to tackle the current skill gap in the region. This report focuses on skills gap recommendations for three industries – Health Care, Manufacturing and Trades

Patricia K. Gehant
Gehant & Associates
2/7/2017

TREASURE COAST SKILLS GAP STUDY



INDUSTRY + INNOVATION + LIFESTYLE



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The Skills Gap Study was conducted by Gehant & Associates, a workforce consultancy assessing the connections between business and education, identifying career pathways and barriers for talent entering the workforce.

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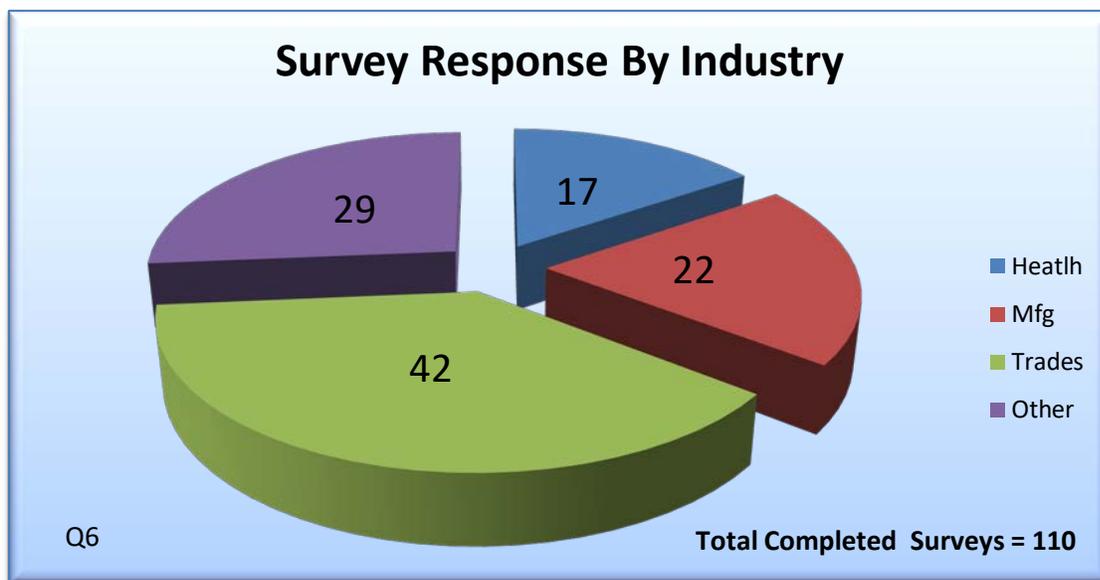
Executive Summary

Overview

Defining the skills gaps within a community is a challenging and necessary task to identify solutions to reverse the trends. Communities are undertaking comparable efforts across the country and across the I-4 Corridor. The St. Lucie EDC gathered together a group of business and educational leaders to assess the challenges and uncover solutions that will begin to tackle the current skill gap in the region. The skills gap issue is international in scope, but must be addressed with locally developed solutions and actions

This report focuses on three industries – Health Care, Manufacturing and Trades. Information gathered for this report included interviews, an online survey, and focus groups. Confidential interviews with 13 business and educational leaders were held to frame the survey questions and assist in clarifying issues presented to the focus groups.

Figure 1 Survey Responses by Industry



The report outlines a strategy for building a Dynamic Educational and Training Framework based on the input from community leaders participating in the Skills Gap Study. The Framework proposes the use of credit and non-credit skills training strategies, integrated with a process for the continuous identification of industry specific skills, which has roots in the efforts introduced by local business and educational groups previously undertaken prior to the report. The recommendations outlined in this report focus on expanding existing partnerships and communication between education and business, expand the modalities for developing skills training, marketing and leadership strategies to broaden the regional talent pool.

Communication and Partnerships

Business must begin to articulate the needed skill and associated career options to both the prospective labor force and educational institutions. Education’s role is to prepare students with a range of skills and

knowledge to enhance their future success. Education alone cannot be responsible for providing all aspects of workforce learning. The expansion of connections between education and business will provide a natural path to build a dynamic education and training framework to address the skills gap identified in the region. Active discussion of workforce skills between education and business can result in the development of strategies to create a steady flow of talent into the workforce. The new efforts will result in the creation of a *Dynamic Education & Training Framework* with a *Middle Ground* where education and business jointly own the results and can rapidly deploy new programs, policies and practices to increase the flow of talent to the workforce.

Figure 2 Dynamic Education & Training Framework



expansion of capacity for training workers in the high demand jobs outlined in this report. The expansion of the IRSC Industrial Technology Center is an example of an opportunity for business to share training content and resources with education. Companies reported conducting internal training to augment skills learned in the classroom. The same business curriculum can be incorporated in the classrooms and delivered by subject matter experts and experienced workers currently in the workforce. Examples of curriculum that can be shared include, a hospital providing critical care training content as part of an existing nursing curriculum; manufacturing to share current industry practices on lean manufacturing, welding or wind turbine technology.

*The new efforts will result in the creation of a **Dynamic Education & Training Framework** with a **Middle Ground** where education and business jointly own the results and can rapidly deploy new programs, policies and practices...*

Skills and Modality

The study findings discuss specific soft skills needed by new hires; the technical skills vary by industry. Motivation, problem solving, time management, critical thinking, and oral communication were the top five soft skills or traits most desired by business.



The building of an integrated and Dynamic Education & Training Framework integrating Workforce Training and Academic programs offers opportunities to identify learning strategies that can accelerate the inclusion of new skills training into the existing educational structure to augment the student learning. The traditional academic classroom model is not always the best experience for introducing the newest industry skills. Today there are numerous options for delivering content – classroom, online, workforce academies, boot camps, job related *meet-ups*, etc. The challenge is to identify the most agile form of training for the skill(s).

Learning doesn't end at graduation; it is continuous upon entering the workforce. Continuous learning is a requirement of all employees and business to remain competitive. Companies are willing to pay for staff

training, but the resources are limited or non-existent. Students want opportunities to explore careers and learn in-demand skills while in school to strengthen their understanding of career options at graduation. The training program can reinforce core competencies such as context-based math and language skills.

The evolution of Workforce Training Institutes on college campuses, offering certifications non-credit hours, has increased the opportunities for degree seeking students and employed workers to learn and upgrade specific skills at reasonable cost. The course offerings focus on industry demands and can be revised more rapidly than for-credit courses. Programs with curriculum offering a variety of modalities or learner experiences can respond to the rapidly changing workforce needs. The framework needs to be connected to K-12, trades schools, and colleges, to allow for the flow of students between the different delivery points to increase skills and provide understanding of career options.

Technology and process change require industries to revise business operations to stay competitive. Industry advances can outpace revisions in curriculum and the educational resources to deliver useful training. Content and method of delivery should be designed to respond to the life cycle of the workforce, type of knowledge delivered, and be affordable for both student and business. Designing solutions using a wider range of content and a variety of modalities and user experience will impact the skilled workforce. The Tech Data/St. Petersburg College Exploratory Lab Boot Camp¹ in Pinellas County is an example of a non-credit skills session using curriculum developed by Tech Data staff, delivered in the corporate setting, by experts in the field. It is designed to develop business acumen of degree-seeking college students. While St. Petersburg Colleges coordinates the program, students are recruited from colleges throughout the region. The Tech Data program is expanding to include Sogeti, an international consulting company, who will use the curriculum developed by Tech Data to begin offering Exploratory Lab Boot

¹The Exploratory Lab Boot camp was an outgrowth of the 2012 IT Gap Study in Hillsborough and Pinellas County. Valpak, Agile Thought and Tampa Bay Technology Forum are also partners in the program offering financial and SME's. See Appendix for details.

camps in the fall of 2017. This boot camp model can be designed around any industry; having the curriculum developed by industry as a driver that leads to greater awareness of the high demand skills and career options.

Non-credit models such as boot camps, mentoring, meet-ups, and special SME programing, when infused into existing credit curriculum and made available to the community can increase the rate of skilled workers entering the workforce. Beginning with middle school and through college, students can be introduced to industry careers through day trips to area companies and an increase in SMEs in the classroom to share career stories. Tech Treks², day trips to Tech companies in the Tampa Bay region, has increased awareness of hiring companies and careers students were not aware existed at the companies. There are many other examples of industry developed curriculum that is provided outside of education that can be integrated into existing curriculum resulting in a potential increase in job placement rates at graduation.

² Teck Treks are bus trips sponsored by companies. Students tour the facilities and listen to workers share how they ended up in the current position.

Marketing

The Trades and Manufacturing industries have a negative image among career and job seekers. St. Lucie EDC established the Manufacturing Association that has initiated discussions and methods to reduce the stigma and increase interest in related training programs. Local health care companies have undertaken

focused campaigns selling the benefits of the region to recruit staff from outside the region. The individual company efforts can be coordinated with the St. Lucie EDC efforts.



The businesses involved in this study regard St. Lucie EDC as a leader in marketing the area to new businesses and to recruit talent. The regional environment, education, business, cultural assets are well documented and trumpeted by company recruiters to attract talent into the area. The Skills Gap study and the community’s development of solutions should be incorporated into a marketing strategy. USAA based its decision to expand in Tampa, Florida in 2013 due in part to the 2012 Technology Talent Gap study, which is evidence that defining and addressing the skills gap issues is positive for business development. USAA stated

the commitment to “real world training for high demand jobs and streamlined internships to fill gaps between corporate need and available skills...helped Tampa stand out from the rest.” (Manning, 2014).

Leadership

The strength of the region lies in the natural leadership resources currently in place. From the interviews and focus groups it is clear that work has already begun to make necessary changes such as the establishment of the Manufacturers Association. This study validates these actions and offers new strategies to expand the partnerships and scale efforts to achieve the desired change.



The St. Lucie EDC has built a strong and diverse workforce committee and partnership throughout the region that will assist the implementation. Defining the leadership and the process for reviewing the data, setting priorities, and leading the implementation is critical to creating the change. As one person noted – “Just get started!” A recommended starting point to rally the community around the implementation can be supporting the IRSC Industrial Technology Center replacement initiative because the center is vital resource for filling many of the high demand jobs in Trades and Manufacturing. Expanded involvement by local businesses including internships, apprenticeships, mentoring, boot camps, and other programs outlined in this report, can be the first step in implementing a wider range of solutions.

STUDY FINDINGS

Parameters of the Study

The Skills Gap study focused on the four-county Treasure Coast region - Indian River, St. Lucie, Okeechobee and Martin Counties, and three industries – Health Care, Manufacturing, and Trades.

Demographics of the Region

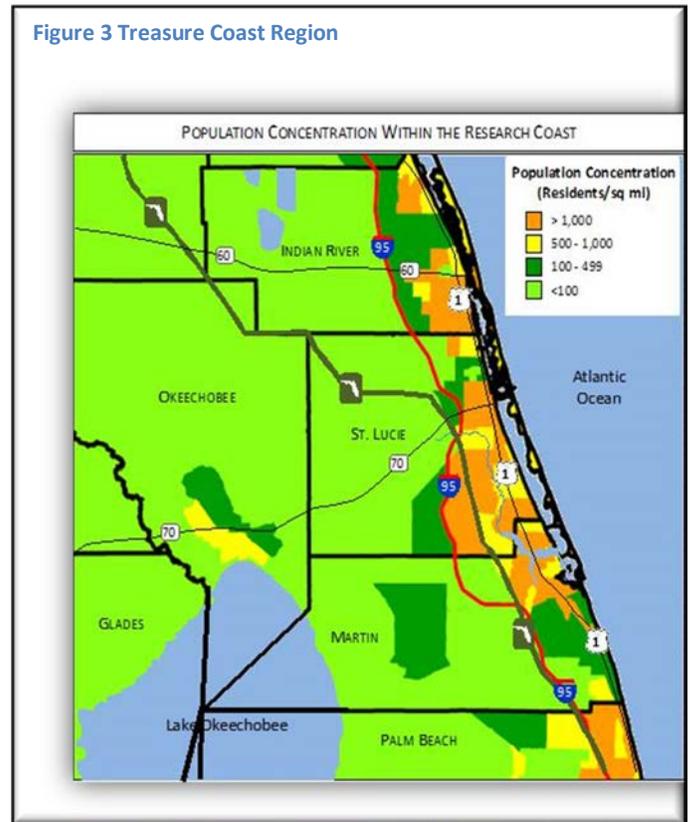
The population of the Treasure Coast is 642,234 with a median age higher than Florida and the US.

Figure 4 - Treasure Coast Median Age

Region	Median Age 2015
St. Lucie	44.8
Treasure Coast	47.1
Florida	41.9
US	37.8

Educational attainment in the Treasure Coast is similar to Florida with 72 percent of Treasure Coast residents have either a high school (34 percent), two year degree/ some college³ (38 percent). According to the Center on Education and the Workforce (Anthony P Carnevale and Nicloe Smith, 2013), 30 percent of the projected new job openings through 2020, will require some college or associates degree and 36 percent will not require education beyond high school. Health Care is one of the fastest growing industries and will require positions from all levels of education.

Figure 3 Treasure Coast Region



³ Vocational training can be included in High School or Some college category.

Survey Responses

The Skills Gap findings in this report are based on information gathered through 1-on-1 interviews with industry and educational leaders, an online survey, and four focus groups – Health Care, Manufacturing, Trades, and Students. There were 110 completed surveys with responses received from the four local counties, Indian River, Martin, Okeechobee, St. Lucie, and several surrounding counties; 50 percent of the responses were from St. Lucie. The survey was launched from the St. Lucie EDC website on September 12th and was open through November 4, 2016.

During November four focus groups were conducted to validate the survey findings. In addition to the three industry focus groups, high school and college students from area schools were invited to discuss barriers selecting careers and entering the job market. There were approximately 35 participants in the four focus groups of which the student group was the largest. The results of the survey and focus groups are incorporated throughout the report.

Figure 5 Responses by County

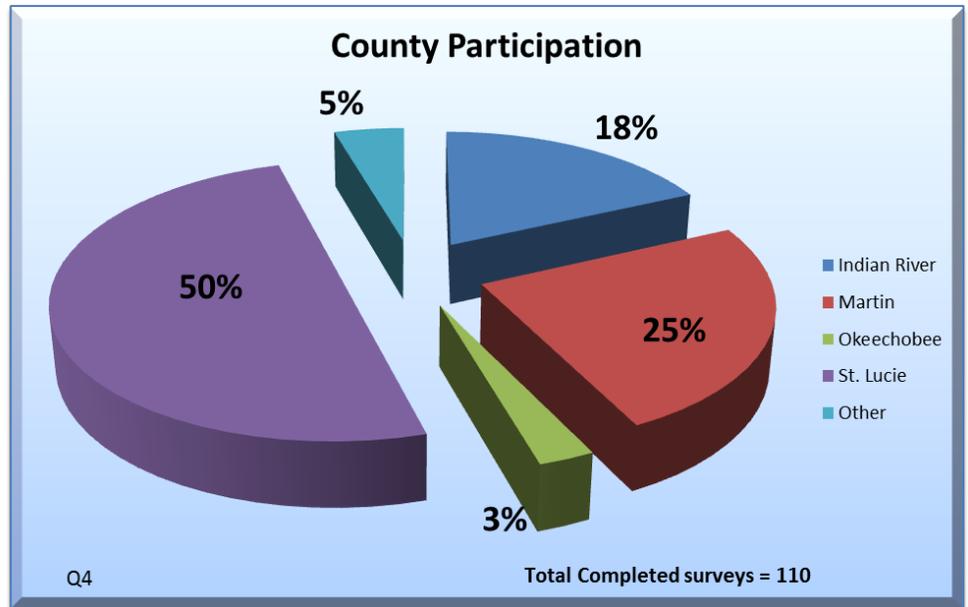
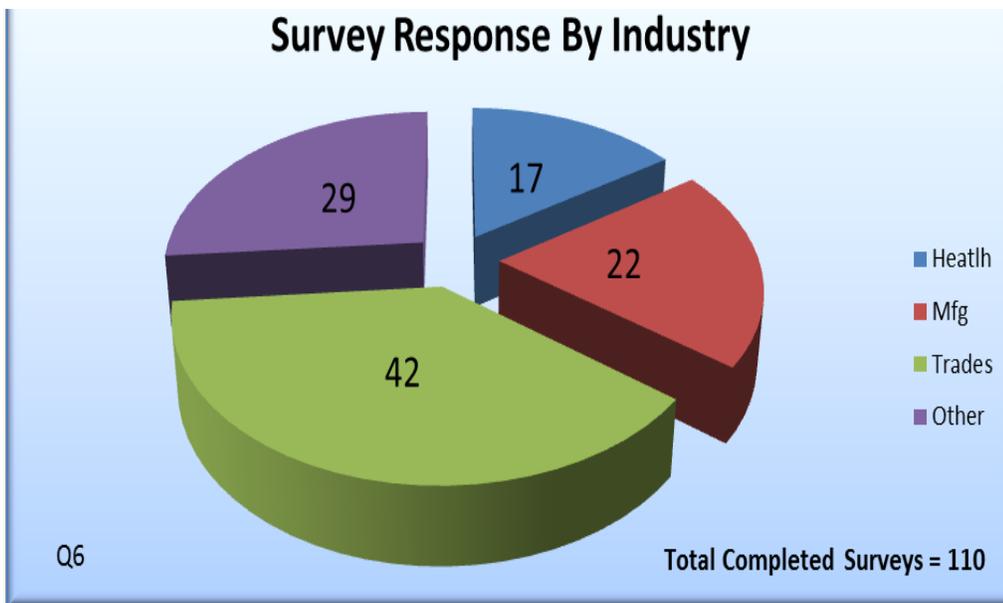


Figure 6 Responses by Industry



Industry Participation

Of the 110 responses, the Trades represented the largest response group in the study. There were 29 companies categorized as *Other* for which jobs data was not captured however responses were provided for the issues questions – recruitment, retention and skills, etc. The *Other* data is not broken out in this report because there was no substantives difference between *Other* responses and responses for *ALL Industries* appearing in this report.

Figure 7 Industry Employed Labor Force

Industry Sector	Employed Labor Force	% of Total	Survey Response *	% of Total
Trade, Transportation, and Utilities	29,900	48%	42	52%
Manufacturing	6,000	10%	22	27%
HealthCare/Education	25,800	42%	17	21%
Total	61,700	100%	81	100%
<i>*Does not include 29 OTHER Industry</i>				

Size of Company Participation

Eighty percent of the companies responding to the survey had less than 50 employees. The Trades has the highest number of responses with 90% of the companies under 50 employees. There were seven responses from companies with more than 500 employees of which four were Health Care and three recorded as Other.

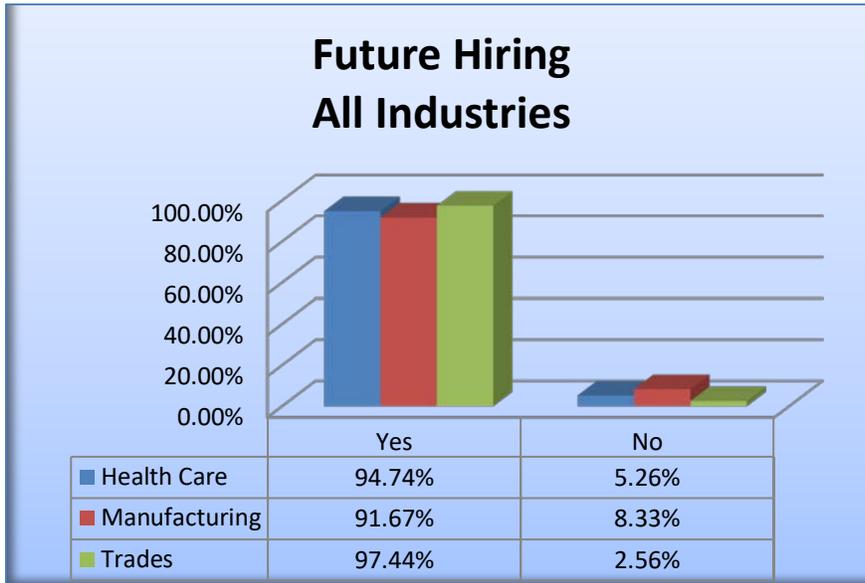
Table 1 Size of Participating Companies

Size of Participating of Companies					
Employees/Cpny.	Health	Mfg	Trades	Other	Total
1-4	2	0	9	5	16
5-9	3	1	9	2	15
10-19	0	7	9	6	22
20 - 49	2	7	11	8	28
50 - 99	2	5	2	2	11
100 - 249	2	2	1	2	7
250 - 499	2	0	1	1	4
500 - 999	1	0	0	1	2
1,000 - 4,999	3	0	0	2	5
Total	17	22	42	29	110
Percentage	15%	20%	38%	26%	100%

Where are the Jobs?

Over 90 percent of companies in all industries reported that they will be hiring over the next 24 months. The 1,885 new jobs reported in the survey reflect only a portion of the companies in the region, so the number of positions that need to be filled is greater than the number reported.

Figure 8 Future Hires All Industries

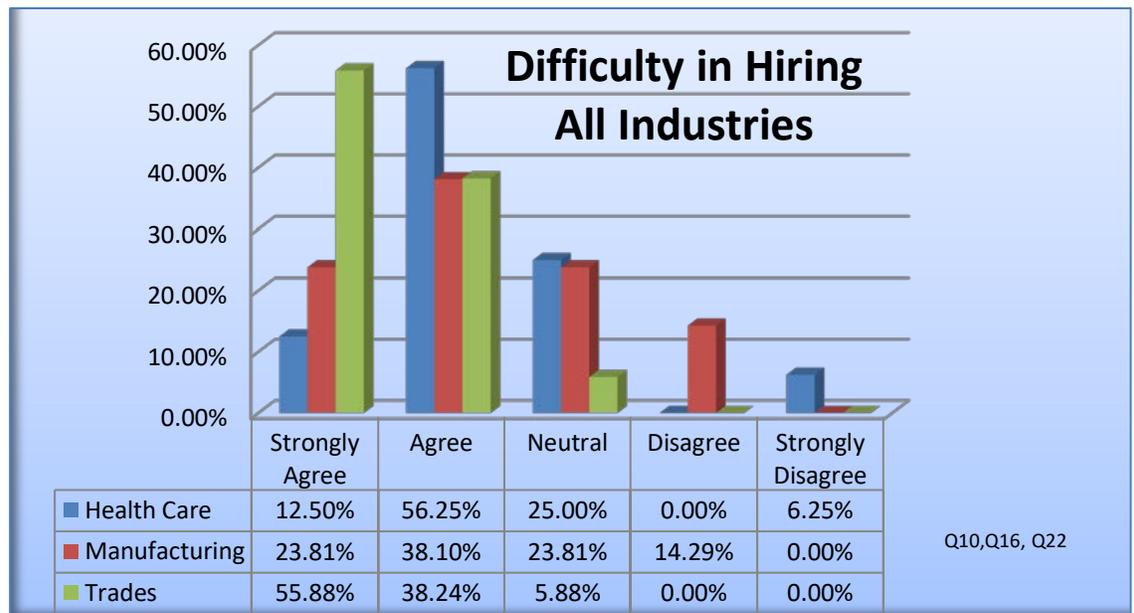


1,885 New Jobs

Health Care	1,404
Manufacturing	230
Trades	<u>251</u>

Of the 1,885 new positions reported over the next 24 months, Health Care reported the greatest number of new positions (1,404⁴). The regional challenge is that all industries reported that they are seeking to hire the highest demand positions AND these positions the most difficult to fill. (See Appendix for detailed list of jobs). The low unemployment rates also contribute to the difficulty in filling positions.

Figure 9 Difficulty Hiring - All Industries



⁴ Includes 1252 from list of jobs in the survey and 152 write in positions.

Health Care – New Jobs

The industry is projecting 1,404 new healthcare positions over the next 24 months which is similar to the projected growth nationally of 19 percent between 2014 and 2024. Nationally the high demand positions are occupational therapy assistants, physical therapy assistants, physical therapy aides, home health aides and nurse practitioners (Martiniano R, April 2016). The fastest growing positions nationally are reflected in the position groups reported locally as being difficult to fill. See detailed list of position in the Appendix. This growth is expected due to an aging population and because changes in federal health insurance program could increase the number of individuals who have access to health insurance (Bureau of Labor Statistics, 2015).

Figure 10 Health Care Future Hires



Figure 11 Estimated Salaries Health Care

Position	Growth	National Median Salary	Open positions
Occupational Therapy Assistants	43%	\$54,520	30
Physical therapy Assistant	41%	\$42,980	50
Home health Aide	39%	\$21,920	50
Nurse practitioner	35%	\$104,740	40
Registered Nurse	16%	\$67,490	508*

*Next 24 months

Glassdoor⁵ reports that there are 170 positions open in St. Lucie for the jobs listed above. The Skills Gap Survey recorded that 508 registered nurses will be needed in the next 24 months. The median annual wage for skilled health care practitioners and technical occupation was \$62,610 in May 2015, for health care support positions the median annual wage was \$27,040, below the average for all wage (Bureau of Labor Statistics, 2015).

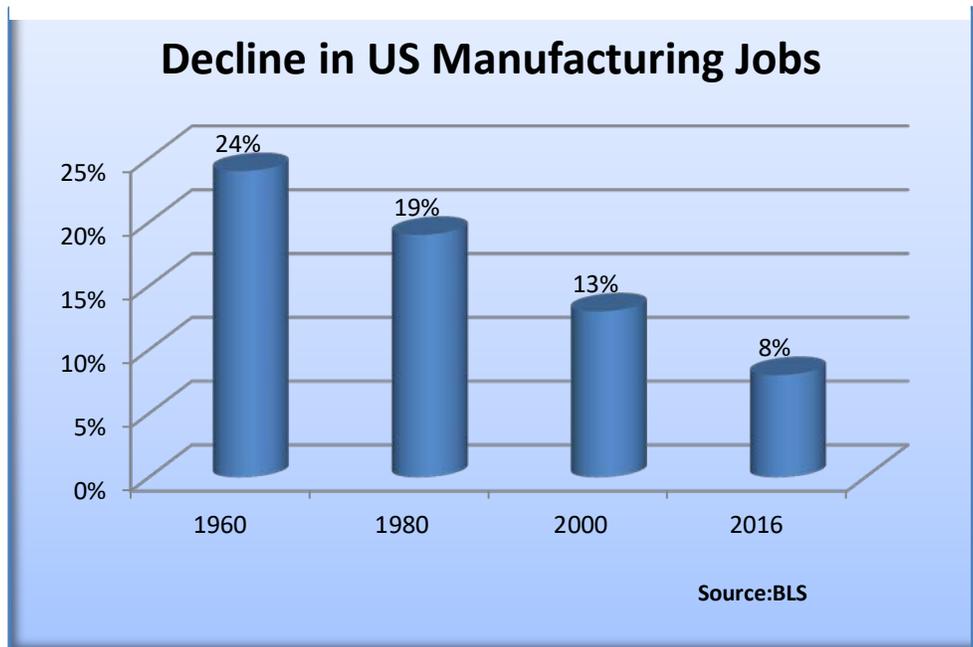
Registered nurses have a range of specialty career options and settings in which to practice. In a hospital setting the focus is on the patient, requiring skills specific to the condition of the patient, many times at the end of life. In-home health care nurses require a wider range of skills specific to maintenance and recovery. The shortage of registered nurses in the critical care areas, including Women’s Services, OR nurses, Radiology, etc., is a considerable challenge. While IRSC and other area training programs provide a steady flow of talent into general nursing positions, there are no local training programs for critical care nursing specialties. To pass certification test, a nurse needs both additional training and several years of experience. Geriatric nursing is another area of specialty that is growing for which there few are training programs. The advances in medical science have expanded the population of elderly and the consequent need of empathetic nurses having knowledge of geriatric medical conditions.

Hospitals have created curriculum to train internal staff to refresh skills, learn new technologies and practices.

Manufacturing - New Jobs

The region is projecting only 230 new manufacturing positions over the next 24 months including Assemblers, Machine and Mill operators. See Appendix of a detail list of jobs. The low number reflects the 3% projected decline nationally between 2014 and 2024, and is attributed to technological advancements.

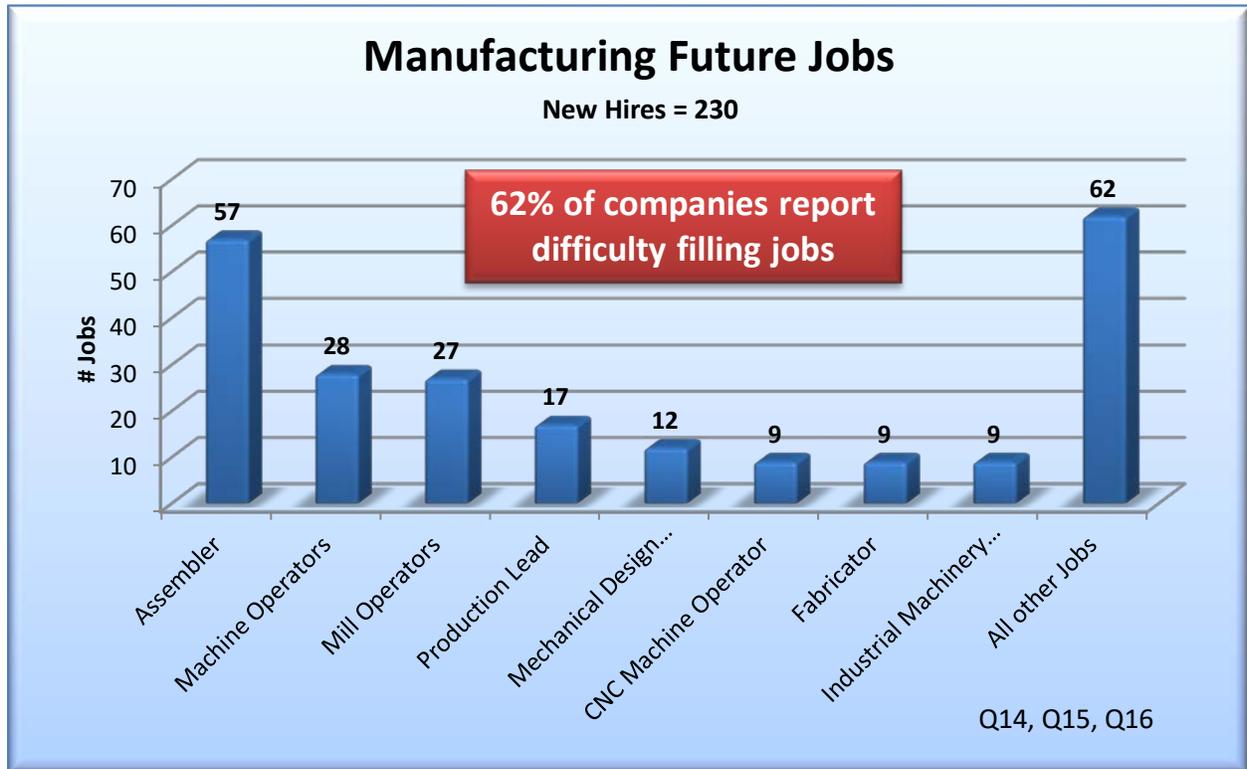
Figure 12 - Decline in US Manufacturing



⁵ Glassdoor is a jobs and recruiting site, with company reviews, including the company management, and company culture. Numbers reflect January 14, 2017 query.

62 percent of the survey respondents reported having difficulty filling open positions and also reported that the fastest growing positions were a challenge to fill. Contributing to the challenge is that 25.4 percent of the current manufacturing workforce is over the age of 55⁶. Many manufacturing jobs require physical strength and stamina.

Figure 13 Mfg. Future Hires



Manufacturing has transitioned from heavily manual jobs to an integration of technology with employers seeking a more skilled workforce. Many of the jobs do not require a college degree offering economic stability, yet students are not entering the field. High schools and colleges are not directing students into manufacturing because of the poor image of job stability and hard work. While there is a decline in overall jobs in Manufacturing, new higher skilled jobs will emerge requiring a skilled workforce, for example robotic welding.

Employers are seeking graduates that can read blueprints, have shop math skills, can problem solve on the shop floor, and understand how the manufacturer makes a profit. In a recent WSJ Article manufacturers stated that finding any with experience was the motivator for setting up internal training programs for new

⁶ Source: DOE PowerPoint, Florida Manufacturing Bureau of Labor Market Statistics March 2014 Labor Statistics Data Release Date: April 18, 2014 U.S. Census Bureau, Longitudinal Employer-Household Dynamics (LEHD), 2012. Slide 10.

hires. Even with training, it takes six month for a new worker to handle machinery unsupervised, up from three months a few years ago⁷.

Trades – New Jobs

Almost 100 percent of the Trades respondents stated they plan to hire over the next 24 months, representing 251 new positions, with the highest demand for construction laborers, electricians, and plumbers. See detailed list of positions in the Appendix. Nationally, welders, electricians, and machinists represent the greatest hiring challenges⁸. The challenge will be to find the talent to fill the positions because 94 percent reported difficulty filling the positions in high demand.

Figure 14 Trade Future Hires



Utility companies will fill a wide range of jobs over the next 24 months with both experienced and new graduates including Plant Managers, Engineers and Wind Turbine Technicians. The Utilities workforce is aging and new talent will need to be trained to fill the increasing technical positions for which continuous training will be necessary.

The need for Carpenters & Welders in the Marine industry continues to be a challenge. Many of the small companies seeking trades positions are not able to offer benefits resulting in hiring challenges.

⁷ Sparshott, J (February 3, 2017) Job Training Ramps Up at Smaller Firms, Wall Street Journal, p. A2

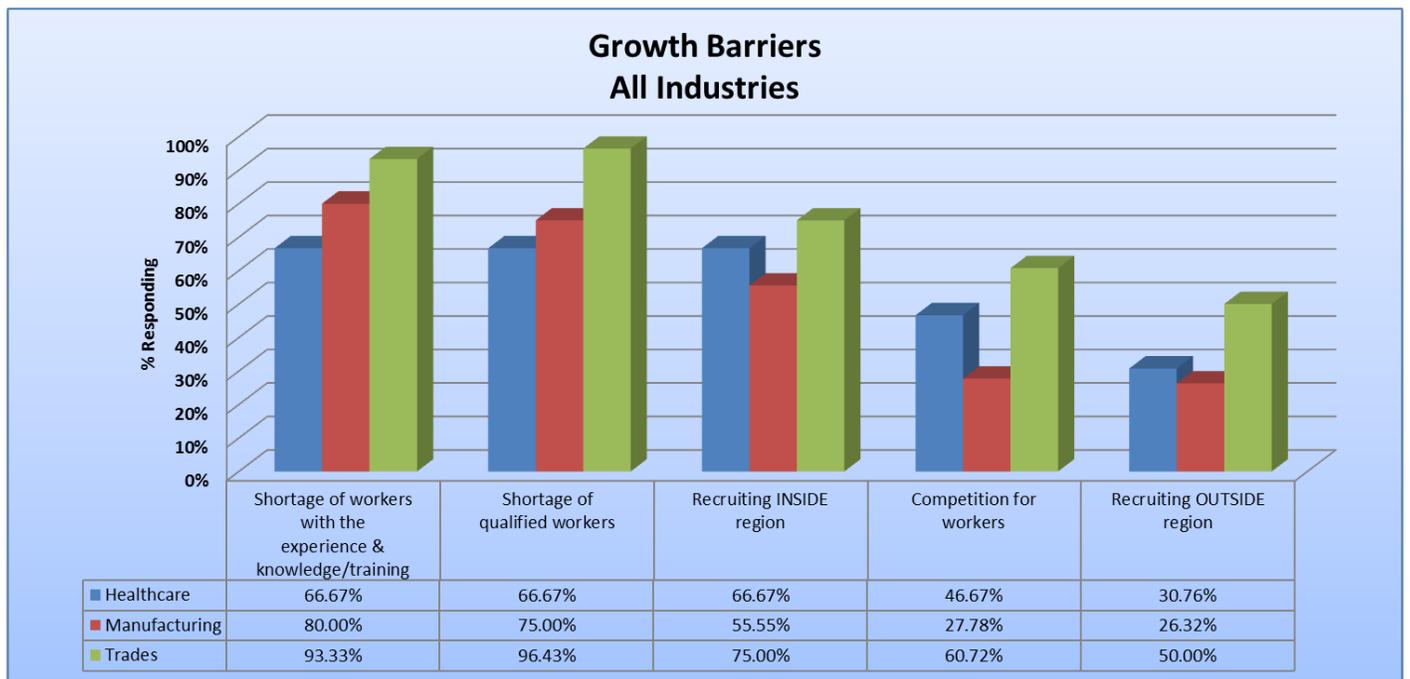
⁸ (Wright, 2013)

How Recruitment Impacts Company Growth

The greatest challenges to a company’s growth are the shortage of workers with the needed experience and knowledge, having qualified applicants apply for the jobs, and trying to find the skills in the local workforce. Of the three industries surveyed, the **Trades** reported the greatest challenge to company growth is lack of a skilled labor pool. One business owner prefers to maintain his current customer base, rather than expand and risk his business reputation by hiring unreliable and unqualified workers.

Business owners reported that the decision to expand the business is based on the ability to have a flow of talent to manage the expanded business. The challenge is not just to fill the current positions but to build the talent for the future as well. Owners are very interested in supporting the continuous flow of talent from local programs in order to build a workforce that can move up the career ladder in the company.

Figure 15 Growth Barriers



Recruitment

Recruitment is a process finding and hiring the best qualified candidates, internally or externally, for new and open positions, in a timely and cost effective method. Matching applicant skills to the job description and assessing cultural fit into the organization and specified department/team has become more challenging as the talent pool shrinks. Yet the need for talent is continuous and tied to the profitability of the company.

The recruitment process has costs, but recruiting for replacements has additional costs associated with the vacancy. Direct costs include the paperwork necessary to separate former employees and conduct exit interviews to the costs of advertising open positions, sifting through resumes and interviewing candidates, and conducting initial training. The Society for Human Resource Management (SHRM) estimates that replacing a single employee costs roughly one and half times that employee’s annual salary. Finding a suitable replacement can take anywhere from three to six months.

Indirect costs of turnover⁹ include lost understanding, lower productivity, missed opportunities and missed deadlines. Non-quantifiable costs include the dip in morale if many employees begin to leave indicating that something is very wrong. This is especially true of long-term employees who are in good standing with the company¹⁰.

Recruitment strategies are key to the success in finding and keeping talent, and represent a major cost for employers. Replacing staff are estimated to be¹¹:

- 30-50 percent of the annual salary of entry level positions
- 150 percent for mid-level positions
- 400 percent for specialized positions

The chart estimates the replacement cost for three of the in most frequently reported future hires in the regions.

	Cost to Replace		
	Median	30%	50%
CNC Machine Operators*	\$ 37,880	\$ 11,364	\$ 18,940
Electricians**	\$ 44,000	\$ 13,200	\$ 22,000
Registered Nurses*	\$ 59,510	\$ 17,853	\$ 29,755
* SLED Web site			
**Salary.com			

⁹ Estimating the Cost of a turnover
https://plus.google.com/url?sa=t&rc=t=j&q=&esrc=s&source=web&cd=3&ved=0CEAQFjAC&url=http%3A%2F%2Fwww.shrm.org%2Ftemplates%2FSamples%2FMetrics%2FDocuments%2FTurnover%2520Costs.xls&ei=Jfh9U9H2NMeYqAbTmYCYDA&usg=AFQjCNH13GH6XnJXZ_vvQPzPckZ1i_RapA&sig2=PMmMKOqJdcFBhhCrUnW6AQ

¹⁰ (Bridge Capita Solutions, Inc, 2014)

¹¹ Ropella. (2014). Ropella.com. Retrieved January 16, 2014, from The Cost of Vacant Positions: http://www.ropella.com/pdfs/Ropella-Cost_of_Vacant_Positions.pdf

The economic loss resulting from open positions can result in:¹²

- Loss of sales volume, reduced service fulfillment, and customer attrition
- Delays in product development and new product launches
- Revenue delay from increased Time-To-Market,
- Lower quality work
- Reduced leadership and idea generation
- Accelerating turnover
- Frustration over perceived lack of corporate support
- Increased poaching of high-demand talent

Cost of a Bad Hire

The cost of a bad hire is equally as damaging, particularly for small to mid-size companies that operate on small margins and with lean HR staffs. Studies have shown that, on average, supervisors spend 17 percent of their time managing poorly performing employees. HR professionals reported that a poor hire cost them productivity (39 percent) and fewer sales (11 percent).¹³ According to the U.S Department of Labor, the average cost of a bad hire can be 30 percent of the individual's first year potential earnings. A bad hire at the management level can result in significantly higher financial costs to a company.

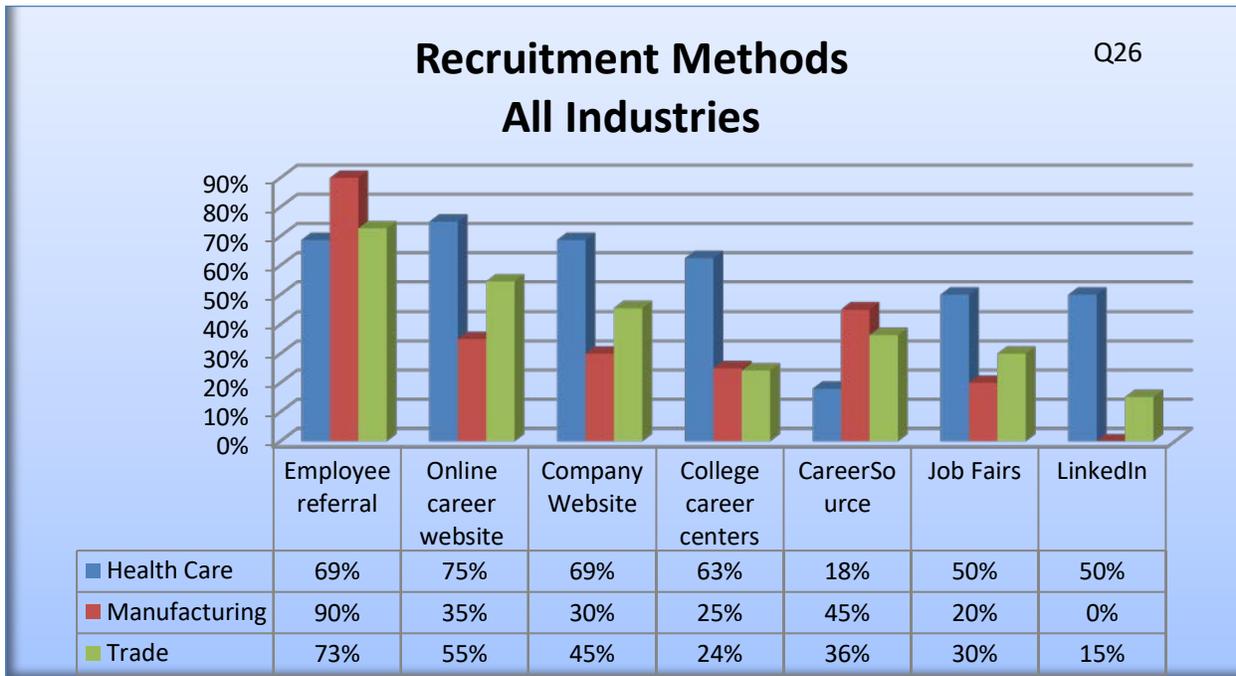
Recruitment Methods

When companies recruit, assessing the candidates to ensure a fit with the company culture, supervisors, and work teams requires a thoughtful and strategic approach. Smaller companies are less likely to have the budget to support an intensive search and interview process. In health care, the opportunity to evaluate talent during the mandatory clinical rotations offers a broader window into the personality of the candidate and an opportunity to assess knowledge and skills as well as receive additional training on company processes. Internships and apprenticeships are also available to industry to assess candidates. Many mid-size to large companies have established internal training programs as an entry point providing training on the business processes and any additional skills needed that have not been acquired in the classroom.

¹² Ropella: The Cost of Vacant Positions, http://www.ropella.com/index.php/toolbox/articles/the_cost_of_unfilled_jobs

¹³ (Robert Half, 2014)

Figure 17 Recruitment Methods All Industries



Employee referral is the most common method for recruiting staff. Ninety percent of manufacturing companies reported using employee referrals which was supported by interviews and the focus group. The impact of employee referrals on the recruitment process includes:

- The highest applicant to hire conversion rate – while only 7 percent apply through an employee, this group represents 40 percent of all hires.
- Applicants hired from a referral begin their position quicker than applicants found via job boards and career sites (29 days compared with 39 days via job boards and 55 via career sites).
- Overall, referral hires have greater job satisfaction and stay longer at companies – 46 percent stay over 1 year, after one year 45 percent over 2 years and 47 percent over 3 years.
- Sixty-seven percent of employers and recruiters said the recruiting process was shorter, and 51 percent said it was less expensive to recruit via referral’s (Hebberd, 2014).

Employee Referral

Tech Data Corporation is partnering with St. Petersburg College to host the Exploratory Lab Boot Camp¹ where 50+ employees work with college students over a three week period to learn business skills that Tech Data and area companies are seeking in new hire. The extended interaction provides time to assess skills and cultural fit. Additional area companies are invited to networking events with students and to the presentation of their final project. 37 graduates have been hired by 26 companies. See Appendix for details.

Online Career websites were also common sources for all industries with LinkedIn used by Healthcare but not by Manufacturing or Trades. Healthcare reported utilizing College Care Centers and recruited primarily from Indian River State College (75 percent) and Keiser (62.5 percent).

Networking

Networking is the art of connecting with people to exchange information and share resources which can lead to a greater understanding. Applied to recruitment it becomes a key strategy to assess a potential hire for skills and cultural fit prior to hiring. Health Care has clinical rotations; apprenticeships are available in the Trades and Manufacturing. Assessing motivational fit is difficult to achieve through an interview process, with multiple sessions, the costs can exceed the recruitment budget of the smaller companies. Job Fairs provide an opportunity to speak to the applicant but still a restrictive environment with the clash of demands to meet as many candidates as possible.

Networking with high school and college students can be a method for recruiting near and long term talent. Participating in the classroom activities and assisting with projects can set up an opportunity to interact with the students over a prolonged period creating a comfortable setting for “recruiters” and increase the student’s confidence and competence in an interview with hiring managers.

Corporate Philanthropic Partnerships

The use of industry and corporate focused philanthropy can stimulate interest in high demand careers and tip scales in favor of the industry when students select a career and training location. The cost of education and college debt can sway a student – and parents – to recommend a career based on scholarships available. Corporate philanthropy, while it promotes the welfare of others also fosters employment engagement and generates business value. Company involvement in the community promotes a positive work place environment and employee engagement. Millennials are attracted to companies that “make a difference”.

Recruitment Challenges – All Industries

Lack of experience, lack of applicants, and lack of experience are three of the main recruitment challenges facing the companies in the area. Understanding the career options and negative images of the Trades and Manufacturing increase the recruitment challenges.

Job descriptions on the company websites generally do not articulate the career ladder for the applicant. For Millennials, the need to understand career options is critical to selecting both a career and job. They want to know the future path and career mobility.

To address the lack of positions TBTF¹⁴ organized a program, Tech Treks, and attracted 50 college students on a day long tour of three tech companies to meet the employees and to learn about exciting careers in tech. Students learned about new careers and how to apply

Corporate Philanthropy

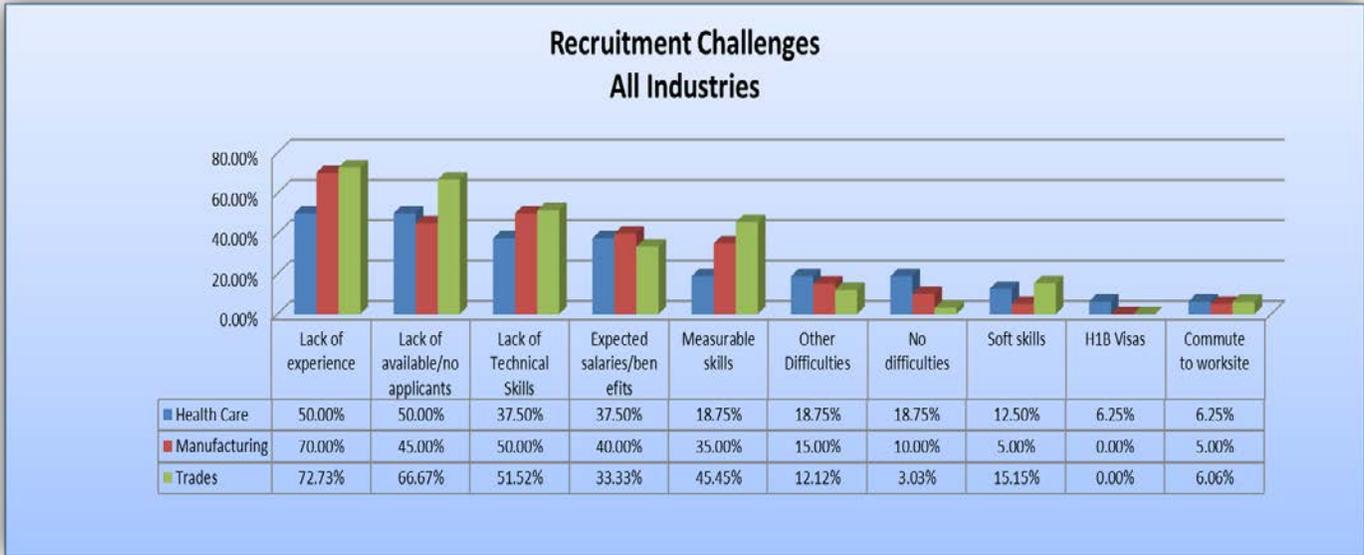
Martin Health Care Auxiliary is offering \$50,000 in scholarships in 2017 for Martin and St. Lucie high school students and those going back to school, to increase the number of graduate’s interested pursuing nursing profession. In anticipation of the need for 200 additional new nurses to support the opening of the Tradition Medical Center in 2018, Martin Health Systems partnered with IRSC to expand and enhance the college nursing program with a \$750,000 to hire additional nursing faculty and training 80 new Associate Degree nurses.

Collaborative Partnerships

Tech Data Corporation in Pinellas County has established a \$10,000 scholarship fund with St. Petersburg College that awards \$2,500 to four IT students per year and engages with the students throughout the year. Goal of the program is to market the career options at Tech Data and reduce the cost of recruiting. The funds are awarded by Tech Data to the SPC Foundation.

¹⁴ Tampa Bay Technology Form – Technology Association in Pinellas and Hillsborough County

Figure 18 Recruitment Challenges - All Industries



the skills they had acquired in their degree program to seek opportunities based on their skills and passions. After the exposure to the company employees students were applying to for internships and open positions.

Expected salaries and benefits, work ethic, and interest in working at entry level positions impacted ability to recruit a workforce. During interviews, it was mentioned several times that the entry level salary offered to the applicant could result in a reduction in public benefits and impact their overall income, particularly as it related to access to health care. Applicants would turn down job offers to maintain benefit coverage.

The lack of available applicants is exacerbated as a result of students being counselled to seek a college degree rather than taking a blue color career path. Trades and Manufacturing businesses want to encourage students to enter their industries in order to pay for college.

Companies provide training to mediate the lack of some of the skills if they find an applicant that is a cultural fit. Inside training is provided by 60 percent of the companies

College vs Industrial

In a [Forbes Magazine article \(Forbes Magazine\)](#) one academic suggested “For two or three generations, the focus has been to go to college, get a degree and in doing so you will ensure a brighter future with more access to employment,” Genevieve Stevens, interim dean for instruction at Houston Community College’s central campus, [told the Houston Chronicle](#). “We started focusing on academic instruction, but left behind the notion of work-force education. However, in a two-year institution that costs less, the average work-force student can come out of that program with skills to gain immediate employment.”

responding to the survey. Health Care companies reported the highest rate (87 percent) of training. Companies over 1,000 employees (n=5) all reported provide internal training, while 50 percent of companies with less than 50 employees (n=81) reported offering training.

According to the Association for Talent Development’s 2014 State of the Industry Report, organizations spend an average of \$1,208 per employee on training and development. For companies with fewer than 500 workers, that number is even higher, coming in at \$1,888 per employee. The average company spends 31.5 hours per year training staff (Linn, 2015). Larger companies are more likely to have fulltime training staff while the smaller companies have to budget for external providers, which can be a significant expense for a low margin company.

Health Care Recruitment Challenges

Many candidates are unaware of the requirements for employment at health care facilities and cannot pass the background screening including nicotine test. Health care facilities are smoke free campuses. A challenge reported locally was the difficulty of finding entry level cooks in Adult Congregate Living facilities that can pass the background checks to work with vulnerable populations.

Salary expectations are an issue affecting recruitment from outside the area as well as inside. Florida salaries are generally below the national median, limiting the migration of experienced talent. Home Health Care is challenged to find talent with salaries ranging from \$9 to \$15 per hour.

Finding nurses in critical area areas such as Women’s Services, OR nurses and Radiology continue to be a challenge. Nurses are required to have minimum work experience and certifications in the critical care specialties and are not offered through the local educational system. Online educational resources are available to learn the content at their own pace. While critical care positions represent a small portion of the overall health care jobs, they are vital to the provision of quality care. Specialty care positions pay higher salaries. HCA has created an internal 6-8 week training curriculum encourage movement of existing staff into higher skilled positions.

Figure 19 Recruitment Challenges



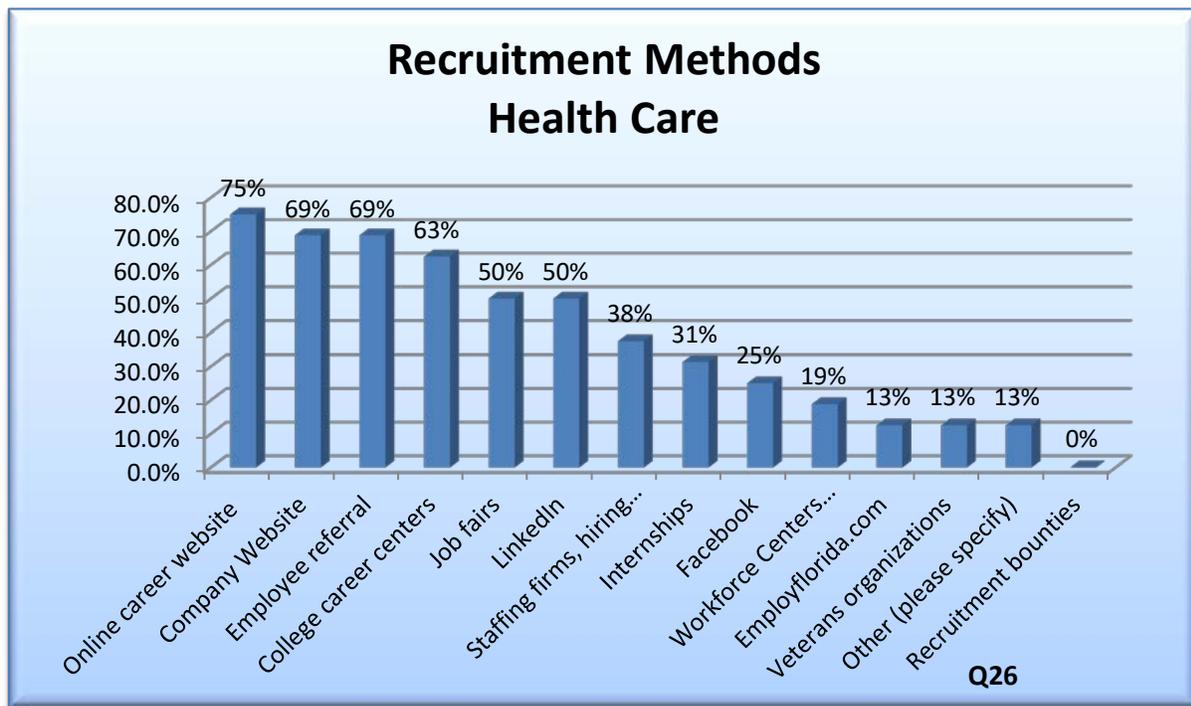
Medical professionals require compassion and understanding of the patient’s condition, yet recent grads focus on the technology rather than the human relationship with the patient. Finding the right balance of compassion and technical skills has been a challenge reported in the interviews and focus group.

Health Care Recruitment Methods

Health Care recruits from online sites, company websites, with 69 percent using employee referrals, the most common recruitment method for the Trades and Manufacturing. The use of Traveler Nurses¹⁵ and international hires, predominately from Puerto Rico and Indonesia, supplement the local market. Health care facilities are seeking a balance of entry level and experienced staff to deliver quality care and meet the demand for service. The use of bounties has been discouraged because of the belief that the new hire is committed to the money not the patients.

Health care providers reported a positive connection to the nursing programs at IRSC and Keiser, recruiting many of their graduates. One employer has had great success using the Predictive Index¹⁶ to assess an applicant’s fit in the company

Figure 20 Recruitment Methods Health Care



¹⁵ American Traveler Nurses places nurses nationwide in assignments in most specialties.

¹⁶ The Predictive Index predicts primary personality characteristics and cognitive ability so the employer can predict workplace behaviors and on-the-job performance.

Manufacturing Recruitment Challenges

The lack of people entering training programs is a major reason that manufacturers are having difficulty recruiting workers. The current cultural focus on obtaining a college degree as the pathway to economic stability has resulted in a decrease in the demand by students for manufacturing skills training programs. As a result of decreased demands, education has scaled back the course offerings at the high schools in the area. There are jobs and careers in Manufacturing that do not require a college degree but do require a high degree of tech skills. These skills can initially be learned in a classroom and developed on the job through apprenticeships.

Figure 21 Recruitment Challenges - Manufacturing



Many graduates from local programs are not being taught the fundamental skills needed by Manufacturing such as how to read blueprints or do basic math such as 4 feet 3 inches is the same as 51 inches. Understanding the manufacturing process by new hires is vital to productivity, particularly in the smaller or medium size plants. Companies reported that some applicants were unable to write and communicate effectively. These concerns are highlighted when the numbers of applicants are so limited.

Students aren't learning to "tinker"; they don't explore how things work.

Employers are willing to train the right person but find that many young applicants lack even tinkering experience – the art of figuring out how things work. Tinkering on cars used to be a rite of passage for many. Now cars have increased electronics and tinkering negates the warranty.

Companies reported a willingness to send employees to training but can't find local resources that provide "blue collar tech"¹⁷ classes to increase skills. During interviews and the focus group it was suggested that experienced trainers such as Subject Matter Experts' be recruited from the local industries to provide training and understanding of the manufacturing process.

Paradyne Corporation in Martin County and FP&L are among many large manufacturing companies that have initiated a training program for new hires to train workers on the skills needed.

During the interviews and focus groups, companies shared their efforts to recruit talent through participation on high school advisory boards, providing scrape metal to welding classes and assist in defining the curriculum content. However, these efforts do not seem to be stimulating enough students to enter and complete the available training programs.

Blue collar positions are difficult to fill; degreed positions such as engineers are easier to recruit from area colleges or searching outside the area. The challenge is finding an engineer graduate who wants to accept manufacturing salaries. Salaries become an issue when trying to recruit outside the state from the colleges in the Midwest and Northeast. Some companies have had better retention rates with Florida college graduates rather than recruiting from colleges in the Midwest; lack of family support in the region has been cited as reasons that professionals leave the area.

The recruitment process is frequently hindered by the expectations of the recruiters vs. those of the millennial applicants. Ideas of resumes and conduct in an interview can differ greatly creating barriers to employment. The traits of Millennials and decision process for pursuing and accepting a job are well documented. Creating a marketing strategy to introduce the industry, career options, and value of the company's products and services can enhance recruitment success. See Recommendations.

¹⁷ Phrase used in interview to describe manufacturing skills training.

Manufacturing Recruitment Methods

While 90 percent of the survey respondents reported using employee referrals to find talent, 46 percent of manufacturers reported using CareerSource with some reporting the paper work was somewhat of a challenge. Craigslist – Jobs was identified as a new source for filling positions.

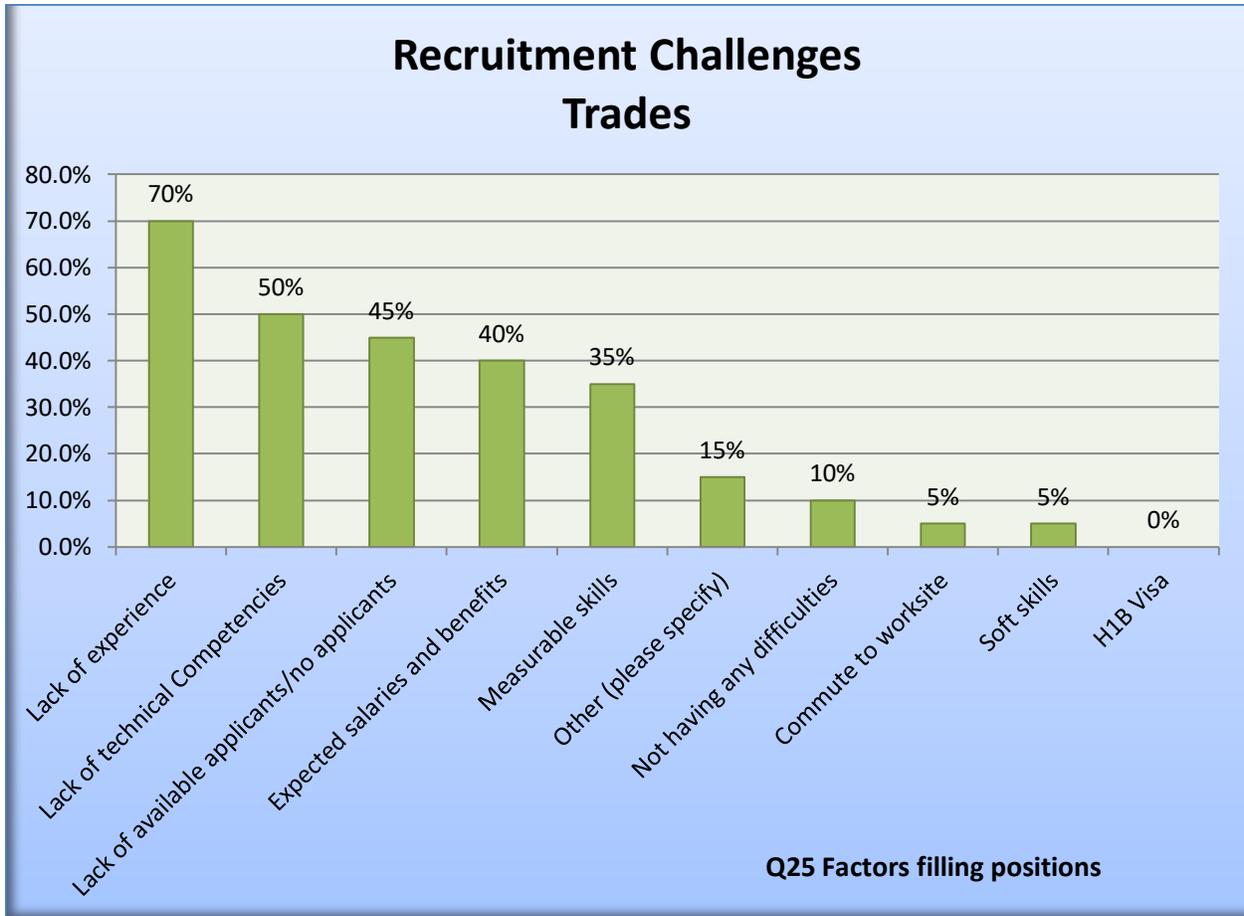
Figure 22 Recruitment Methods - Manufacturing



Trade Recruitment Challenges

Recruitment is challenging for the Trades industry nationally and locally, representing the hardest segment of the workforce for employers to staff with skilled talent (Wright, 2013). The Construction industry, particularly home building, has recovered over the past few years, yet the labor force needed to fill the positions is on the decline (Zhao, 2015). This is reflected in the locally identified difficult-to-fill positions. The median age of the construction labor force in Florida is 45 years compared with a national median age of 42 years (Zhao, 2015), which contributes to the challenges of filling open positions. Another challenge is the early retirement by workers in the Construction and all Trades positions from the workforce because of the physical demands.

Figure 23 Recruitment Challenges - Trades



A majority of survey respondents cited applicant lack experience (70 percent) and technical competencies (50 percent) which are compounded by the reduction in experienced workers available to mentor and teach needed skills on-the-job.

Recruitment strategies in the Trades industry do not depend on submitting a resume or searching online job sites such as LinkedIn, but rather through in-person applications and job fairs, for skilled labor and Industry specific online resources such as Indeed, Craigslist, and other Trades specific sites to recruit the more experienced staff.

Many companies will recruit experienced labor from the Western US because the building standards and materials used are similar to the region vs. the Northeast where construction methods differ. Experienced and bi-lingual supervisors are more likely to be found out west that can manage an increasing Spanish-speaking labor force in Florida.

The salary differential between the study region and the Northeast and labor union benefits limit the number of experienced workers that will work in the regional jobs.

Trade Recruitment Methods

During the interviews and focus groups participants reported their willingness to train the right person, but without an applicant pool the challenge to fill positions intensifies. Employee referral is the most frequently (77 percent) used method to recruit employees.

Figure 24 Recruitment Methods - Trades



Society has supported a college education as a pathway to economic security. The Trades provide careers that can provide economic opportunities for workers and support a pathway to college if desired. Iron workers can earn more than starting teachers. Plumbers and electricians can earn salaries equal to many mid-level positions requiring a four year college degree.

CTE related classes for the Trades have been on the decline due to lack of student interest. 70 – 80 percent of the trade skills are taught in Vocational Education but students are not encouraged to pursue the Trades because of the image of low pay and hard work.

Students who were exposed to careers while in middle and high school stated it sparked their interest in pursuing those careers. For example, students reported becoming interested in welding following a visit to Phoenix Industries where they participated in a hands-on program with the employees.

Florida Power and Light has designed internal training programs and teach the new technologies. FP&L is one of the largest renewable energy companies in the US and must recruit staff to maintain the increasingly complex wind turbine system. The technology is not being taught in the classroom. The power plants are also increasing in complexity. While some functions use low analog technology, other functions require high-tech digital solutions. As demand for the skills increases, the FP&L curriculum can be infused, in part or in whole, into the educational system.

Trades generally do not use LinkedIn or online services to attract workers. Some employers attend job fairs but the Trades do not rank high in glamor and income potential for students entering the workforce and therefore few students are learning the skills required to fill the positions.

Internships

Internships offer a unique and cost effective opportunity to source talent, with about half of the Gap survey respondents reported offering internships. Many of the internships remain unfilled because of a lack of connection with the student population. According to the 2015 National Association of Colleges and Employers (NACE) Internship Study the average job offer rate to interns is 72.7 percent and the acceptance rate is 85.2 percent (Edwin W. Koc, 2016). High school students reported interest in more internships opportunities while companies reported reliable transportation as a challenge for the many students. College students are beginning to understand the need for an internship but many express dismay at unpaid experience.

Table 2 Mfg. & Trade Apprenticeships/Internships

Manufacturing and Trade Level of Students Apprenticeships/Internships	Percent Offering
High School students in a vocational program	70.00%
College students pursuing an AA/AS degree	45.00%
College students pursuing a BA/BS degree	25.00%
College students pursuing a Master's degree or higher	15.00%

HealthCare has a natural conduit for nursing and other medical positions because of the requirement to complete clinical coursework prior to graduation. Health care providers reported this was a great source of talent and gave them the ability to assess skills prior to hiring – a long interview. Students reported that internships were useful to understanding the different jobs in healthcare and the facility culture. Yet only 33 percent of the Healthcare respondents

used the internship to find talent. The hospital setting is the most common provider of experience for college students seeking healthcare careers. Students expressed interest in more internship opportunities during high school, but reported that only administrative positions were available, which one student noted was how she learned about nursing careers and electronic patient records.

Apprenticeships are needed because in 5-6 years, while math will be the same, manufacturing will change. Confidential interview

Apprenticeships in **Manufacturing** and **Trades** allow students to apply the skills taught in the classroom and participate in the manufacturing process. Apprenticeships are the oldest form of skills transfer

combining classroom education with on-the-job training¹⁸ yet, only 41 percent of respondents offer internships or apprenticeships.

The time to set up, recruit, and manage company internship programs were cited as reason in the interviews and focus groups for not setting up a program internally. Trades have the greatest need for skilled workers and only 7 percent had a relationship with education. However, they were unanimous in the interviews and focus groups of an interest to participate with education to increase the flow of students into the industry.

The apprenticeship provides an opportunity for experienced workers to share Tribal Knowledge with younger employees, as they learn the skills and processes involved in the manufacturing process. From confidential interview

The need to expand and market apprenticeships was a recurrent comment during interviews and the Trades and Manufacturing focus groups. Of Trades and Manufacturing companies currently not offering a program (60 and 57 percent), over half¹⁹ are interested in connecting with education to provide feedback on the classroom curriculum and to offer placements. Smaller and mid-size companies have fewer resources to commit to the process but are willing to support community efforts to train students.

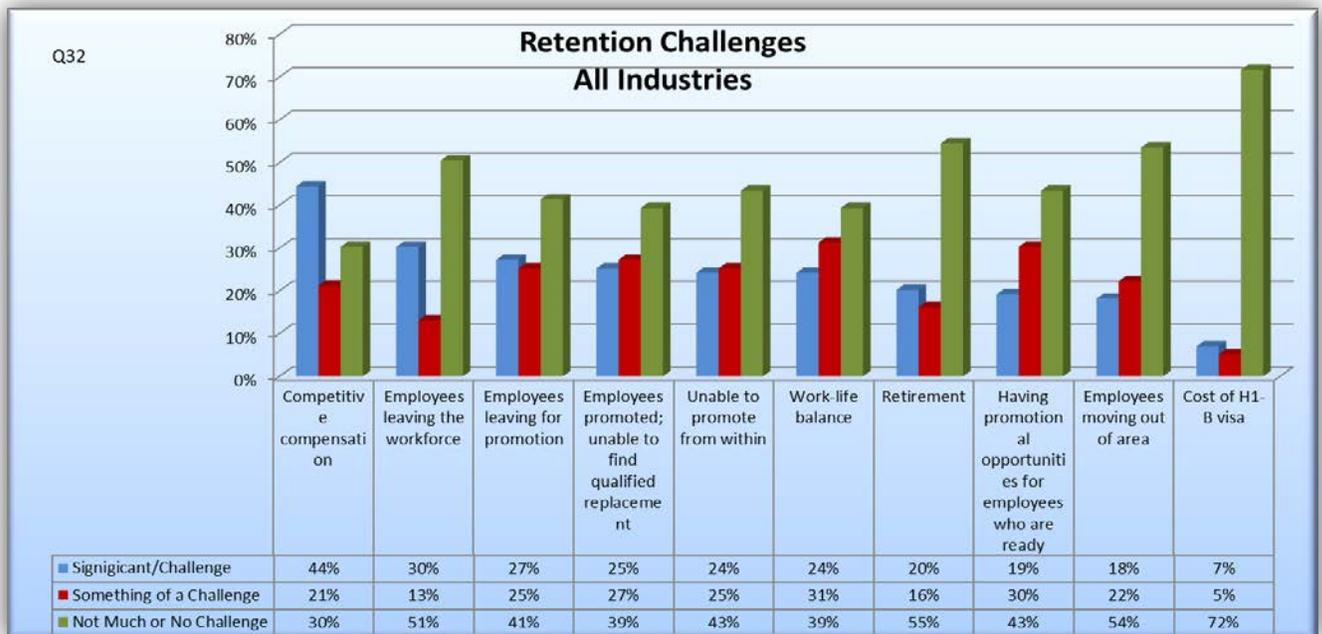
¹⁸ (Finn, 2015)

¹⁹ Trades = 50% and Manufacturing is 55% are interested in setting up an internship program.

Retention Challenges – All Industries

Competitive salaries continue to be the greatest challenge for retaining staff. A considerable challenge is to retain entry level staff that will change jobs for as little as \$.25 per hour increase. During the interviews and focus groups reported that the turnover occurs when the employee is asked to complete a task they do not want to do. Work ethic was an issue raised several times throughout the focus groups and interviews.

Figure 25 Retention Challenges - All Industries



Health Care Retention

Hospitals reported a low turnover rate of about 15 percent for nurses with many staying with the company for 10-15 years or more. Creating an inclusive culture, with diversity of opinion and employee input is conducive to retention. However, millennials are interested in accelerated career advancement and move frequently for money and increased training opportunities.

Health Care professionals are leaving the workforce (56 percent) or leaving the area (50 percent) to follow family members. Just over a third (37 percent) reported retirements as an issue which results in a loss of experienced workers that are difficult to replace. Promotional opportunities were less of an issue in Health Care since there are a wide range of options for qualified health care professionals in the larger organizations.

Manufacturing Retention

Compensation was reported as the greatest challenge to retention (53 percent) with the inability to promote from within (28 percent) reported as the next greatest challenge. It was surprising that only 17 percent reported retention was impacted by employees leaving the workforce.

Some family owned manufacturing companies have created a “family” environment and can treat employees differently than large private companies. For example, one company provided a car for an employee and accommodated numerous personal situations which are not possible in a large company with strict HR policies. In these cases, loyalty to the company overcomes some of the other retention issues reported. Marketing the family owned culture was seen as a positive retention strategy.

Retention –Trades

Retaining quality staff can be an issue for smaller companies. In the Trades, participants reported many workers will change jobs for small increases in hourly rates, rather than gain experience and seek promotions. Survey respondents stated that competitive compensations continue to be the greatest challenge in retaining workers. The ability to fill positions opened due to a promotion as well as finding positions which to promote workers continues to be a challenge for companies.

Skills

Motivation, problem solving, time management, critical thinking, and oral communication were the top five soft skills or traits most desired by business. Veteran status was rated the least important trait by all industries, however, it was noted in the interviews and focus group that veterans were valued applicants. Companies with a statewide or national presence were more likely to participate in Hire Veteran initiatives.

Many students report lack of understanding of how to move up a career ladder in a business or industry. Students want to learn the most advanced technology including hands on experience. Touring area companies was reported by students to be instrumental in helping them find a career path. A class trip to Phoenix Metal Products combined with the hands on experience and meeting the employees, resulted in two students selecting welding as a career. They feel the exposure to advanced technology will help them to move up in the field.

Traditionally students seek training through either credit and non-credit program and are not encouraged to expand skills with dual enrollment. Non-credit programs can expose students to a wider range of skills, particularly rapidly emerging skills at reasonable cost for the student. Non-credit content can be revised as needed, responding to the changing needs of an industry.

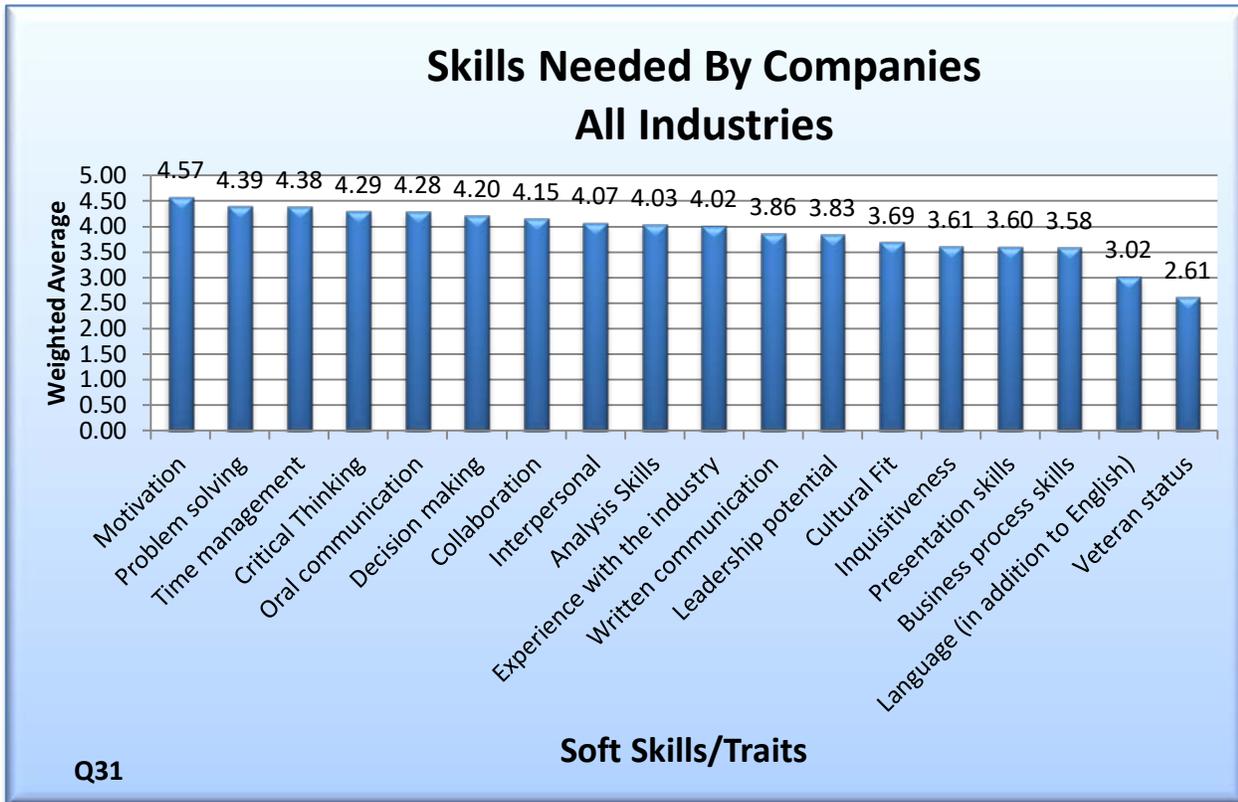
Psychology & Business Analytics

The University of Florida has established a boot camp styled business analytics program for psychology majors to increase their job options at graduation. The program recognizes that a psychology degree focuses on research skills needed by business. Business analytics is an emerging field and UF has added the program to support the workforce needs, and teach skills that will assist graduates to be hired in a wider range of jobs.

Exploratory Lab Offers Agile Curriculum

The Tech Data/ St. Petersburg College Exploratory Lab Boot Camp revised the session on Taking Financial Risks the day following the Brexit vote including the discussion on the impact of business in the US and Tech Data specifically. The session was led by the financial group that manages acquisitions and merger and the staff responsible for preparing the analysis for the CEO. This was a great opportunity for learning in a rapidly changing world.

Table 3 Skills Needed By Companies



The rating for the top five soft skills was similar for Manufacturing and Trade industries but Health Care rated interpersonal and group work as top traits. Motivation, the highest rated skills for Trades and Manufacturing, was discussed during interviews and focus groups in term of motivation to accept a position.

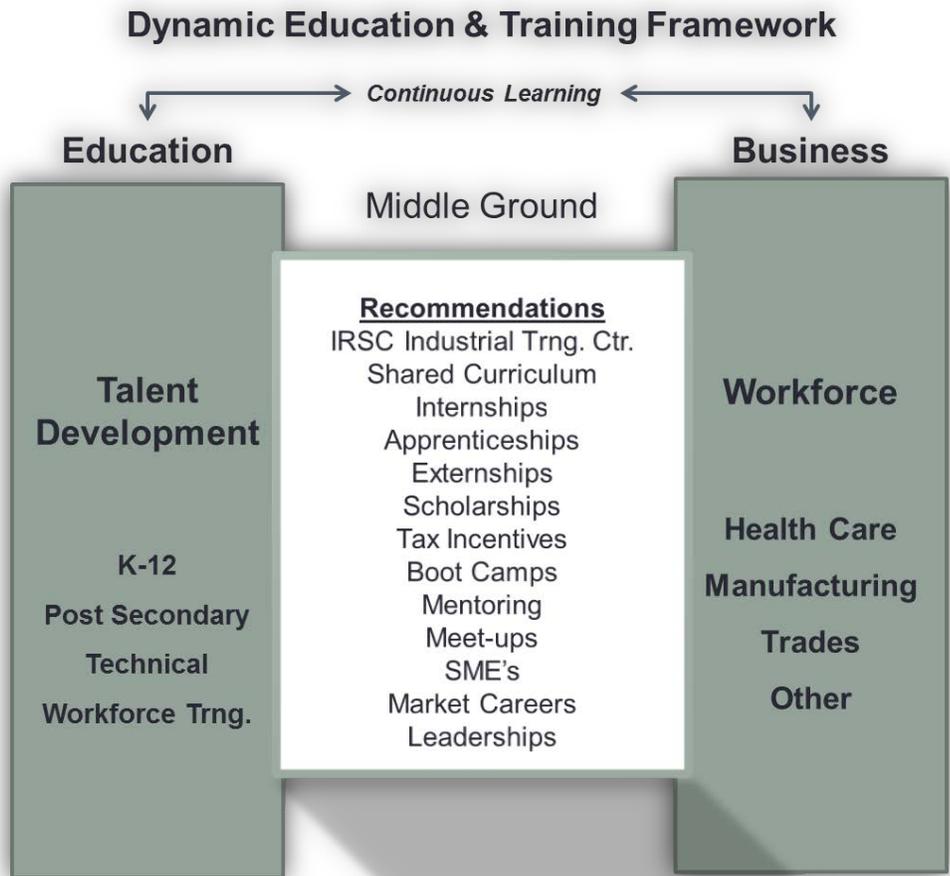
Programs exist in the high schools and colleges to teach students the soft skills needed for success and many motivated and skilled students are graduating from area institutions. Throughout the survey process IRSC and St. Lucie public schools were viewed very positively in preparing students.

Recommendations

Recommendations

The recommendations focus on expanding existing partnerships and communication between education and business to develop solutions that broaden the regional talent pool. The building of a Dynamic Education & Training Framework with a Middle Ground²⁰, that provides both credit and non-credit skills development, integrated with a process for the continuous identification of industry specific skills, is critical to creating changes to the flow of talent into the workforce. Marketing the career opportunities and learning/training resources to students and experienced workers will create a continuous flow of talent through the new and reframed opportunities.

A successful Middle Ground requires a long term commitment to creating change. Some activities can be deployed rapidly while other activities will take time to demonstrate results. The list of recommendations below is based on the feedback from the focus groups, interviews, the survey, and successful programs implemented following local Skills Gap studies across the I-4 corridor. They require your review and discussion to formulate programs and strategies that reflect local resources and interests. As with any set of recommendations, leadership and community participation is required to create the change you are seeking. The recommendations are a start: the implementation conversation is ongoing.



²⁰ A *Middle Ground* where education and business jointly own the results and can rapidly deploy new programs, policies and practices to increase the flow of talent to the workforce.

1. Communication and Expanded Partnerships

Business needs to actively communicate workforce skills with education and discuss strategies for incorporating the new information into an Academic (credit) and Workforce (non-credit) framework. Only 18percent of all survey respondents reported a connection with education to share needed skills and assisting with defining the skills taught. One third of Health Care survey respondents reported an active role with education, specifically IRSC and Keiser for nursing and health care staff. Most of respondents that were engaged were members of an advisory boards (47 percent) or presented in the classroom (41percent). Expanding the connections can provide a continuous dialog to define skills and identify curriculum that prepares graduates for the workforce. Large companies are more likely to have a close relationship with education and actively be involved in the curriculum design and recommending new or revised coursework for specific degrees.

- **FURTHER THE EXPANSION OF THE IRSC WORKFORCE HIGH-TECH INDUSTRIAL TRAINING AND TECHNICAL CERTIFICATES PROGRAMS** - IRSC has been a workforce training leader in high-tech industrial training on the Treasure Coast for years. The proposed expansion of the Industrial Technical Center is supported by the demands for talent expressed throughout this study process. The proposed increase in instructional space, technology and lab space was repeated in interviews, focus groups, and the survey as the greatest strategy for expanding the workforce and creating the continuous flow of skilled workers in the region. Trades and manufacturing companies are interested in connecting with the college to increase hands-on learning opportunities, SME's as teachers, and materials donation, and expanding the community partnerships. The modern facilities will encourage relocation of new companies from outside the area to seeking a skilled workforce. High school students will be motivated to seek technical training because they will be learning on the latest technologies.
- **SUPPORT THE IDENTIFICATION OF SHARED CURRICULUM** – Sixty percent of the companies reported providing training to new hires, with 50 percent provided by external sources, and 46 percent using internal curriculum. Ninety-three percent offer current staff training using the same training sources. During focus groups and interviews, business representatives expressed their interest in exploring the potential of integrating the internal corporate and external industry training materials into the classroom providing students a view into the latest technologies. The material can be added as modules that inform the student of new career options or incorporated into existing curriculum as a course offering. Experts from industry can teach materials to increase student exposure to the industry.

Examples of industry training curriculum that can be shared with education:

- Manufactures Association of St. Lucie County – Currently undertaking the identification of skills and training materials
- [Nuclear Uniform Curriculum Program \(NUCP\)](#) a framework for educating and developing operators and technicians for nuclear power plants.
- Wind Turbine Technician training
- Health Care providers offer internal training to all staff including critical care nurses and are interested in sharing curriculum to increase student interest in the careers. This

- program can include colleges offering support or *meet-ups*²¹ for nurses seeking certifications in the fields.
 - **American Boat & Yacht Council (ABYC) Standards** – Describes standards for the design, construction, maintenance, and repair of recreational boats.
 -
 - Offer training to students in the unfilled seats in corporate sponsored training which can be awarded as prizes for classroom achievements, local contests, or to apprentices, interns, or student being mentored by staff.
 - Invite students to attend industry events creating an opportunity for both student and professional to network so the students gains knowledge about the industry and career path understanding. The professional will be able to vet future hires.²²
 - Other corporation’s training programs.
- **INTERNSHIPS, APPRENTICESHIPS** – Increase the opportunities for high school and college students through increased business participation. State support through CareerSource was recently eliminated; restoring the funding will increase student awareness and interest in the industries.
 - **EXTERNSHIPS** – Provide opportunities for educators to experience different work experiences during the summer and breaks to increase their industry knowledge and career options with the purpose of providing information to students.
 - **SCHOLARSHIPS AND CORPORATE PHILANTHROPY** – Develop industry-sponsored scholarship for students to enter training programs.
 - **OFFER TAX INCENTIVES FOR A CORPORATION’S INVOLVEMENT** – Incentivize companies to provide resources to education through funding, in-kind staffing support for classroom activities, program sponsors, and or materials for use in industry-specific skills training.

2. Skills Development Modalities and User Experience

The building of the Dynamic Education & Training Framework and the Middle Ground, offers opportunities to identify learning strategies that can accelerate the inclusion of new skills training to augment the student learning. The traditional academic classroom model is not always the best modality for introducing the newest industry skills. Today there are numerous options for delivering content – classroom, online, workforce academies, job related *meet-ups*, etc. The challenge is to identify the most efficient and agile form of training for the skill(s).

Learning doesn’t end at graduation. Continuous learning is a requirement of all employees to remain competitive. Companies are willing to pay for staff training, but the resources are limited or non-existent. Students need opportunities to explore careers and learn in demand skills while in school to strengthen their understanding of career options at graduation. The program can reinforce core competencies such as math and language skills.

The evolution of Workforce Training Institutes on college campuses, offering certifications not credit hours, has increased the opportunities for degree seeking students and employed workers to learn and upgrade specific skills at reasonable cost. The course offerings focus on industry demands and can be revised more rapidly than for credit courses. Programs with curriculum delivered using a variety of modalities can respond to the rapidly changing workforce needs. The framework needs to be connected to

²¹ Meet-ups are informal meetings or gatherings of similar minded individuals to discuss a topic related to the interest of the group. Industry can sponsor or organize to increase awareness and share expert knowledge on the subject.

²² TBTF -Tampa Bay Technology Forum invite Ex Lab grads to industry events which has resulted in new hires.

K-12, trades schools, and colleges, to allow for the flow of students between the different delivery points to increase skills and provide understanding of career options.

- **USE BOOT CAMP PROGRAMS TO INCREASE JOB READINESS** – Boots Camps are used to deliver rapid training to prepare students with critical workforce skills. St. Petersburg College and Tech Data Corporation have partnered on the Exploratory Lab Boot Camps program, which teaches college and high school students the skills needed by companies and to navigate them to seek internships and jobs at local companies that were unknown to them prior to participating in the program. Students reported that 60percent of the information provided was not taught in the classroom. Over 26 companies have hired program graduates and many of the students returned to school and changed majors, participated in meet-ups, or pursued certifications, after learning about the companies and new career options. The students participating in the Ex Lab come from a wide range of degree and Workforce Training²³ programs including Liberal Arts, Business, and STEM.
- **EXPAND REALITY EDUCATION AND MENTORING** – Beginning with middle school, introduce students to industry careers through day trips to area companies; increase SMEs in the classroom to share career stories. Tech Treks²⁴, day trips to Tech companies in the Tampa Bay region, has increased awareness of hiring companies and careers students were not aware existed at the companies. The program is sponsored by TBTF a tech industry association of 125 tech companies in Tampa Bay, including Tech Data and St. Petersburg College.
- **COMPANY SPONSORED STUDENT ORGANIZATIONS** – Companies sponsorship of on campus student organizations focused on specific industries or careers can increase student awareness of careers and companies. IRSC has a robust list of student groups that companies can connect with and share career information and job opportunities. In Pinellas County. Tampa Bay Technology Forum initiated an on-campus TBTF Student Group and arranged for area businesses to speak to the students resulting in an increase in participation in Tech Treks, Exploratory Lab participation, and a number of other connections and resulting in local hires.
- **SPONSOR MEET-UPS TO INCREASE PEER-SUPPORTED LEARNING** - Industry or education can initiate the informal meetings to discuss specific industry skills such as meet-ups to support nurses seeking to train for critical care positions, or other positions with frequent new information. This is very common in the Arts and Tech world where a group of developers gather to discuss the latest development with Hadoop, sponsored by a company that is seeking talent in the focused area.
- **SME IN THE CLASSROOM** - CTE programs offer excellent opportunities for companies to engage with students and increase awareness of the different career opportunities. Increasing the number

²³ Exploratory Lab Boot Camp participants must have at least 60 hours towards a degree, completed the degree and currently enrolled in a Workforce Training Program seeking certification. Masters level students are also participating

²⁴ Teck Treks are bus trips sponsored by companies. Students tour the facilities and listen to workers share how they ended up in the current position.

of professionals teaching in the classroom will increase student awareness about career options, and companies in the region. The Exploratory Lab instructors share their career path to the current position at the start of each session to de-mystify how you get from the classroom desk to the workforce.

- **CONNECT EMPLOYEES AND STUDENTS TO CERTIFICATIONS PROGRAMS**-Offer certification prep/study groups to encourage participation. Meet-ups or study groups offered at area colleges and supported by businesses can expand awareness and increase high demand skills particularly in the area of critical care nurse specialties, and other targeted professions.

3. Marketing

Individual companies are undertaking focused campaigns selling the benefits of working in the region to recruit staff from outside the region. St. Lucie EDC markets the area nationally to recruit experienced workers. The negative image of the Trades and Manufacturing job seekers has resulted in efforts to discuss this issues and methods to reduce the stigma and increase interest in related training programs. Local health care companies have undertaken focused campaigns selling the benefits of the region to recruit staff from outside the region.

- **MARKET SKILLS GAP EFFORTS** – The Skills Gap study and more importantly, the solutions that are the outgrowth of the study can be used as a tool to attract business to relocate and local companies to expand.
- **MARKET CAREER PATHWAYS IN THE INDUSTRY** – Create a marketing campaign to introduce the advantages of careers in Health Care, Manufacturing and the Trades. Students learn about careers from family, educators, and TV. Millennials want to understand growth potential, life style impact, and if they will be able to make a difference before accepting a job or career path. Students report lack of understanding on how to make the connection with employers, fear of applying for jobs because they assume they are not qualified, and tend to follow advice rather than explore career options. Some options discussed in the focus groups include:
 - a. Revise job descriptions and company Jobs websites to include a career pathway in the company and training and experiences required for high demand positions.
 - b. Create marketing strategies that sell the social impact of the products and industries in the region, the LEED efforts by companies and philanthropic activities.
- **MARKET THE REGION AND SUPPORT LOCAL EXPANSION** – The St. Lucie EDC should support the growth of local companies without regard to size as well as recruit new companies to move in to the area.

4. Leadership

The strength of the region lies in the natural leadership resources currently in place. From the interviews and focus groups it is clear that work has already begun the work to make necessary changes.

The St. Lucie EDC has built a strong and diverse workforce committee and partnership throughout the regions that will assist the implementation. Defining the leadership and the process for reviewing the data and setting priorities is critical to creating the change. As one person noted – “Just get started!”

- **LEAD AGENCY** – The St. Lucie EDC was identified as the natural leader of the implementation during the interviews and focus groups. Equal standing with industry and education is required to effectively lead the development of the proposed framework.
- **CREATE WRITTEN AGREEMENTS** with community partners, education and business, to identify who will be responsible for the coordination of resources and thought-leaders implementing the recommendations. Include the activities in organizational business plans of each partner to give priority to the task.
- **SUPPORT FOR SMALLER COMPANIES** - Smaller companies reported interest in participating but have fewer resources to devote community activities. These companies will benefit from an expanded talent pool.

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Appendix

Mission Statement –
To expand the Tampa Bay talent pool by increasing the leadership & technical skills and increase the business acumen of college graduates from all degrees, in preparation for entry into the regions dynamic workforce.

Seeking a Few Good Students for the Exploratory Lab Boot Camp January 16-20, 2017

The Talent Gap Study in 2012 and 2014 identified the need for increased collaboration between education and business to develop a workforce that has the needed skills to be successful in today’s workforce. The study found that many jobs are filled based on attitude and cultural fit. *Skills can be taught; attitude comes from the home.*

We also found that the skills needed to be successful in positions were taught in a variety of degrees, not just the traditional areas. Music majors can learn to be great coders; psychology majors can make great business analysts, Social Media experts, and marketing strategists. Anthropologist can lead new tech development teams, and Philosophy majors can run large tech firms – successfully!²⁵



is an innovative talent development business and educational partnerships designed to increase the technical skills and business acumen of the college graduates, to connect students to careers in a range of Tampa Bay industries, and increase their confidence to apply for open positions. The Boot Camp is a program based on a curriculum developed by business, and delivered by business professionals to supplement the classroom experience. The Boot Camp is an innovative leadership development and recruitment strategy for high potential employees for area businesses. ***Graduates reported that 60% of the program content was new and not learned in the classroom.***

Applications are due November 3rd and if selected will require students to participate in three evening events and the week long Boot Camp on January 16-20, 2017. Participants will be required to attend all events to graduate.

Find the application and program dates at: <http://tbtf.org/exlabs/>

²⁵ Stewart Butterfield, CEO Slack, <http://www.forbes.com/sites/georgeanders/2015/07/29/liberal-arts-degree-tech/#b26b3405a754>

THE THREE PILLARS CURRICULUM

Tech Data created the THREE PILLARS CURRICULUM to fill the skills gap new grads have compared to what area businesses are seeking. While the curriculum was generated to meet the demands of Technology businesses, the sessions apply to all industries. The program focuses on exposing non-Tech degree students to tech trends in a non-intimidating way that will lead students to understand broader career options. The goal is to provide experiential learning that is Real Life, Real Time, to augment their classroom learning. Students entering any industry will benefit from understanding the role of technology in the workplace.

Technology Solutions: The Technology Solution sessions bring awareness, walk through history and evolution of technology and help the students apply where and how these technologies would be used. It is not meant to be a certification or deeply technical delivery. Networking 101, Video/Collaboration/UC, Security, Web/eCommerce/Applications, Data Center/Cloud, and Technology Companies Day to Day - to review real life, real time business models, strategy, vision, organization, culture, skills needs, etc.

Integrated Business: The Integrated Business sessions demonstrate how activities undertaken by a company should create, communicate, and deliver value. Includes an overview of Market Opportunities, Business Planning, Integrated Marketing, Operationalizing a Business (including logistics), Emotional Intelligence, Taking Risks in Business Trends, Data Analytics – Role in Future Technology Trends and Business Intelligence.

Process & Tools to Create User Experience: The Process and Tools will introduce the concept of the customer's interface with the products and services provided by a company. Agile/Lean Development, UX (User Experience) and Design Thinking, Solving for Business Outcomes, White Boarding sessions to create solutions to solve customer business problems. All while reinforcing team work and collaboration.

Skills covered across curriculum: Critical thinking, analytics, business acumen, business planning, decision making, visual application, problem solving, communication, technical, risk intelligence, adaptation, speed of change, collaboration, agility, leadership, creative thought, organizational thought, engineering, agile, design thinking, collaboration, entrepreneurship, and research. Students also learn to effectively networking for business and career development.

The Exploratory Lab Boot Camp Experience

The experience was delivered in four sessions – three 2 hour pre-sessions, and the 40 hour boot camp – January 16th -20th, 2017. The core value of the program is the program content of the sessions designed to expose students to new information and knowledge along with real world examples of solutions.

Blogs

<https://www.linkedin.com/pulse/exploratory-lab-boot-camp-proven-successagain-angie-beltz?published=t>

<https://www.linkedin.com/pulse/focus-skills-can-lead-students-technology-jobs-reduce-angie-beltz>

List of Jobs

Health Care

Manufacturing

Trades

Health Care			
Future Hires		Difficult to Hire	
	New Jobs Reported		Surveys Reported
Registered Nurses	508	Registered Nurses	7
Nursing Aides, Orderlies, and Attendants	188	Cardiovascular Technologists and Technicians	3
Home Health Aides	131	Physical Therapists	3
Emergency Medical Technicians and Paramedics	90	Emergency Medical Technicians and Paramedics	2
Licensed Practical and Licensed Vocational Nurses	79	Medical Secretaries	2
Medical Secretaries	33	Accountants and Auditors	1
Radiologic Technologists and Technicians	29	Diagnostic Medical Sonographers	1
Physical Therapists	26	Home Health Aides	1
Pharmacy Technicians	20	IT - Networking	1
Cardiovascular Technologists and Technicians	17	Nursing Aides, Orderlies, and Attendants	1
Dental Assistants	15	Personal and Home Care Aides	1
IT - Support	12	Pharmacy Technicians	1
Psychiatric Technicians	10	Radiologic Technologists and Technicians	1
Accountants and Auditors	9	Dental Assistants	0
Diagnostic Medical Sonographers	8	Dental Hygienists	0
Medical and Public Health Social Workers	8	Financial Analysts	0
IT - Hardware	6	IT - Hardware	0
Dental Hygienists	5	IT - Software	0
Personal and Home Care Aides	5	IT - Support	0
IT - Software	4	Licensed Practical and Licensed Vocational Nurses	0
Financial Analysts	3	Medical and Public Health Social Workers	0
IT - Networking	3	Medical Equipment Repairers	0
Medical Equipment Repairers	3	Mental Health Counselors	0
Mental Health Counselors	2	Psychiatric Technicians	0

Source: Skills Gap Study, September 12 - November 4, 2016

Other Future Hires		Other Difficult to Hire	
	New Jobs Reported		Surveys Reported
ES Aides	50	Admissions Nurses	1
Housekeeping/Dietary	20	Billers	1
Security Officers	20	Certified nursing assistants	1
Maintenance Technicians	10	Certified medical assistants	1
Patient Service Representatives	10	Clinical Educator	1
Assistant Office Managers	5	Clinical Supervisor	1
medical director	5	Director	1
Office Manager	5	Medical Assistant	1
regional marketing specialists	5	Occupational therapists	1
Medical assistant	4	Patient Care Manager	1
MRI/CT Techs	4	Pharmacist	1
Pharmacists	4	Physician Assistant	1
Physician Assistant	3		
Informatics RN	1		
Marketer	1		
Medical Coder (ICD-10)	1		
Project Manager	1		

Source: Skills Gap Study, September 12 - November 4, 2016

Manufacturing

Future Hires	New Jobs Reported	Difficult to Hire	Surveys Reported
Assembler	57	Assembler	5
Machine Operators	28	Production Lead	5
Mill Operators	27	CNC Machine Operator	4
Production Lead	17	Fabricator	4
Mechanical Design Engineers	12	Mechanical Design Engineers	3
CNC Machine Operator	9	Electrical Assembler	2
Fabricator	9	Industrial Machinery Mechanics	2
Industrial Machinery Mechanics	9	IT -Software	2
Maintenance Mechanics	9	Machine Operators	2
Quality Inspectors	8	Maintenance Mechanics	2
Warehouse Workers	6	Quality Inspectors	2
Billing and Posting Clerks	4	Bookkeeping, Accounting, and Auditing Clerks	1
Bookkeeping, Accounting, and Auditing Clerks	4	Mill Operators	1
Electrical Assembler	3	Warehouse Workers	1
Tig Welders	3	Welder	1
Welder	3	Accountants and Auditors	0
Cable Assembler	2	Billing and Posting Clerks and Machine Operators	0
Electro-Mechanical Assembler	2	Cable Assembler	0
Accountants and Auditors	1	Circuit Board Assembler	0
Circuit Board Assembler	1	Cost Estimators	0
Cost Estimators	1	Electro-Mechanical Assembler	0
IT - Software	1	Final Unit Assembler	0
IT - Support	1	Financial Analysts	0
Mig Welders	1	Fitter	0
Final Unit Assembler	0	IT - Hardware	0
Financial Analysts	0	IT-Networking	0
Fitter	0	IT-Support	0
IT - Hardware	0	Mig Welders	0
IT - Networking	0	Pressers, Textile, Garment, and Related Materials	0
Pressers, Textile, Garment, and Related Materials	0	Production Solderers	0
Production Solderers	0	Repair Solderers	0
Repair Solderers	0	Sheet Metal Workers	0
Sheet Metal Workers	0	Test Technicians	0
Test Technicians	0	Tig Welders	0

Other Future Hires		Other Difficult to Hire	
	New Jobs Reported		Surveys Reported
CNC Programmers	1	CNC Programmers	1
Composite Fabricator	1	Engineers	1
Data entry for website	1	Machinists	1
Machinist	1	Sales-Customer Service	1
Office Clerk	1	Tool & Die Makers	1
Parts & Service counter	1		
Sales & Marketing	1		
Sales-Customer Service	1		
System Installer	2		
Tool & Die Makers	1		

Trades			
Future Hires		Difficult to Hire	
	New Jobs Reported		Surveys Reported
Construction Laborers	46	Carpenters	9
Electricians	35	Electricians	9
Plumbers, Pipefitters, and Steamfitters	28	Plumbers, Pipefitters, and Steamfitters	8
Carpenters	23	Construction Laborers	6
Cement Masons and Concrete Finishers	21	Construction Managers	6
Helpers - Electricians	20	First-Line Supervisors of Construction and Extraction Workers	5
Heating, Air Conditioning & Refrigeration Mechanics and Installers	18	Heating, Air Conditioning & Refrigeration Mechanics and Installers	4
Construction Managers	13	Helpers - Electricians	4
First-Line Supervisors of Construction and Extraction Workers	10	Accountants and Auditors	3
Helpers - Production Workers	4	Brick Masons and Block Masons	3
Accountants and Auditors	3	Welders, Cutters, Solderers, and Brazers	3
IT - Networking	3	Cement Masons and Concrete Finishers	2
Civil Engineers	2	Excavating and Loading Machine and Dragline Operators	2
First-Line Supervisors of Helpers, Laborers & Material-Movers, Hand	2	Financial Analysts	2
IT-Hardware	2	Helpers - Production Workers	2
IT- Software	2	IT - Software	2
IT -Support	2	Mobile Heavy Equipment Mechanics, Except Engines	2
Welders, Cutters, Solderers, and Brazers	2	Operating Engineers/Construction Equipment Operators	2
Excavating and Loading Machine and Dragline Operators	1	Pipe Layers	2
Mobile Heavy Equipment Mechanics, Except Engines	1	Roofers	2
Operating Engineers/Construction Equipment Operators	1	Tile and marble Setters	2
		First-Line Supervisors of Helpers, Laborers & Material-Movers, Hand	1
		IT - Networking	1
		IT - Support	1

Trades

Other Future Hires	New Jobs Reported	Other Difficult to Hire	Surveys Reported
Housekeepers	5	Concrete cutting operators	1
Real Estate Agent	3	Contract Administrator	1
Aluminum Installers	2	Housekeepers	1
Pre-engineered Metal Building Erector	2	plumber	1
steel erection	2	plumber helper	1
bookkeeper	1	Pre-engineered Metal Building Erector	1
breakfast attendant	1		
concrete sawing operator	1		
Contract Administrator	1		
Office staff	1		
Realtor	1		
sales coordinator	1		

Source: Skills Gap Study, September 12 - November 4, 2016