



# APPRENTICESHIPS:

A GATEWAY TO A ROBUST REGIONAL WORKFORCE

Issue Brief - December 2018



# Executive Summary



*“When workforce analysts meet with businesses these days, labor shortages are usually the first topic of conversation. Across the country unemployment has neared record lows, workers are less likely to move across state lines to find work, and the workforce is aging. All of these factors make finding and retaining quality workers a different game than during the Great Recession.”<sup>1</sup>*

*– Henry Fields, Workforce Analyst*

The country's strong economy, coupled with record setting unemployment rates and the critical labor shortages that are being created as the “most-in-demand group of workers retire,” has created a perfect storm for workforce and economic development professionals.<sup>2</sup> This harrowing fact is true across the county, and our community is no different.

Round Rock's business climate has remained strong and is expected to remain strong for the foreseeable future. The community, however, must continue to address compounding workforce shortage issues. Without an ample, qualified workforce, the continued growth of our community and economy will be slowed or, even worse, stalled.

This brief focuses on the sentiment that a “strong apprenticeship model can help solve America's workforce challenges.”<sup>3</sup> As such, it explores how a strong apprenticeship model can address Round Rock's workforce needs by identifying the various forms of apprenticeships, leveraging case studies to demonstrate how companies and other communities have developed successful apprenticeship programs. The brief presents three recommendations for increasing apprenticeship opportunities in Round Rock: develop a regional apprenticeship coalition, a series of registered apprenticeships, and a series of non-registered apprenticeships.

## Introduction

In July 2015, the Round Rock Chamber published a comprehensive workforce development strategy for Round Rock. The multi-year roadmap details how the community can work together to ensure an ample talent pool via four tactics: replenishing [skilled professions]; implementing accelerated learning opportunities; increasing direct-to-college participation; and supporting ancillary service capabilities.<sup>4</sup> An approach that is glaringly absent is the use of apprenticeships to build a skilled and available talent pipeline.

Since the WROC's release three years ago, apprenticeships have risen to the forefront in workforce development discussions and are now seen as viable options for companies and communities addressing the impact of severely low unemployment numbers. An article, featured in RealClear Education in June 2018, opines that addressing the workforce shortage and the skills gap, "may require applying lessons we learned decades ago: One of the best ways to succeed in the workplace is to combine education and training with learning – and mastering – skills on the job."<sup>5</sup> That statement is truly at the heart of why apprenticeships exist and why they are such valuable experiences to participating apprentices and their respective employers.

This issue brief attempts to better understand how a strong apprenticeship model can improve Round Rock's workforce needs. It will define and clarify what a true apprenticeship is and how it can be created; review the various methods companies and communities have leveraged via apprenticeships to address workforce issues; and propose recommendations that can be implemented to increase apprenticeship opportunities in Round Rock.



*Apprenticeship programs are being touted as "one key method of rebuilding the American workforce."<sup>6</sup>*

## Overview of Apprenticeships

Apprenticeships are essentially a training and development tool that allows an employee to learn in an on-the-job environment while providing the employer the ability to evaluate the employee's long-term viability to the company. This "win-win" situation provides an ideal opportunity to grow the overall talent pool while ensuring employees' "fit" with an employer. Apprenticeship programs are no longer limited to the traditional blue collar industries that many may be familiar. Today, apprenticeship programs are opportunities to train the future workforce for all industries.

### *Registered Apprenticeships*

The U.S. Department of Labor (DOL) defines registered apprenticeship programs as "high-quality, work-based learning, and post-secondary, earn-and-learn models that meet national standards for registration with the DOL or a federally Recognized State Apprenticeship Agency."<sup>7</sup> Registered apprenticeships have five key features:

1. Participants are paid by employers during training.
2. Programs meet national standards for registration with the U.S. DOL or federally recognized state apprenticeship agencies.
3. Programs provide on-the-job learning and job-related classroom or technical instruction.
4. On-the-job learning is conducted under the direction of one or more of the employer's personnel.
5. Training results in an industry-recognized credential that certifies occupational proficiency."<sup>8</sup>

Per the Urban Institute, registered apprenticeships include "at least 2,000 hours of on-the-job training and 144 hours of related technical instruction which can take place in a classroom at the workplace or at a local college or education provider."<sup>9</sup> Together, the five features of registered apprenticeship programs ensure that they are credible, industry-recognized training programs that result in credentials that have reciprocity



throughout the country. More importantly, registered programs are also eligible to receive funding from state and federal sources.<sup>10</sup> Last, but not least, traditional registered apprenticeship programs are three-to-five years in length and, as will be explored further along in this brief, this results in apprentices developing strong loyalty for their employers which leads to better productivity and lower turnover rates.

It is important to stress that registered apprenticeship programs demand a huge investment of company resources in time and money. Apprentices are full-time employees from day one and, as has been shared previously, traditional registered apprenticeship programs run an average of three-to-five years.

#### Funding Sources for Registered Apprenticeship Programs:<sup>11</sup>

- Innovation and Opportunity Programs
- Trade Adjustment Assistance Program
- GI Bill and other Veteran Programs
- Pell Grants and Federal Student Aid
- U.S. Department of Transportation
- U.S. Department of Housing and Urban Development


#### Non-Registered Apprenticeship

Non-registered apprenticeships are a meaningful alternative to registered apprenticeships, especially in today's business climate where employers do not have three-to-five years to dedicate to a talent development program. While they may be shorter, time-limited experiences, non-registered apprenticeship programs have three of the five key features of registered apprenticeship programs:

1. Participants are paid by employers during training.
2. Programs provide on-the-job learning and job-related classroom or technical instruction.
3. On-the-job learning is conducted under the direction of one or more of the employer's personnel.

Although companies may not recognize their in-house talent development strategy as a non-registered apprenticeship, some local companies, especially those in highly specialized industries, essentially provide non-registered apprenticeships to new hires. Companies, such as Round Rock-based Ultra Electronics, will pair their new hires with experienced, longer-tenured staff. The experienced staff person becomes a mentor to the new hire that teaches them the highly specialized techniques, in addition to supporting the new hire as they are acclimated to the company's culture.

Companies that prefer non-registered apprenticeship programs will reap the benefits of shorter programming (i.e., shorter commitment in training, mentoring, wages, etc.). Through these robust, yet time-limited, programs, businesses are still able to gauge fit and aptitude without having to invest in candidates for the traditional

 *“Having a skilled trade is special, you can only learn so much from books and watching videos – to perfect it takes years and years of hands-on experience.*

*The mentors we have in the field have come pretty darn close to perfecting their trades and there is a huge sense of pride in teaching it to a student who is just as passionate as they are. The consensus from our senior superintendents is that the students did really well – they worked extremely hard and they were hungry for knowledge. The students always came prepared to learn. I think it also changed our Partner's mentality about the 'millennial' mindset.”<sup>12</sup>*

*– Diana Hoang, Recruiting Manager*

three-to-five years. They may not, however, see the level of employee loyalty that is seen via traditional registered apprenticeship programs. It should also be noted that these programs are not eligible for state or federal funding. Furthermore, the apprentice will not earn an industry-recognized credential through this type of programming.

## Required Apprenticeship Programs for Licensure

There are some professions (e.g., electrical, plumbing) that have worked to establish specific licensure requirements in state law. According to experts in the fields, this was done to guide and protect the integrity of their respective trades. The Texas Department of Licensure and Regulation (TDLR) regulates licenses for nearly forty professions.<sup>13</sup> The requirements vary from profession-to-profession although persons interested in becoming an electrician or a plumber, for example, must register for an apprentice license with TDLR and log a certain number of on-the-job training hours under the supervision of a master in the field of practice before they can sit for the journeyman exam. They must meet additional requirements to be eligible for master status in their respective fields.

## Advantages of Apprenticeships

Apprenticeships are good for business. The DOL reports that apprenticeships:

- help to recruit and develop a highly skilled workforce;
- improve productivity and the bottom line;
- provide opportunities for tax credits, employee tuition benefits in some states, and state and federal funding opportunities via grants;
- reduce turnover costs and increase employee retention; and
- are a way to create industry-driven and flexible training solutions to meet national and local needs.<sup>15</sup>

Apprentices, just like any employee, appreciate employers that support, mentor, and believe in them. Apprenticeship programs create company loyalty. Penske Truck Leasing, in partnership with Penn Foster, created an on-the-job certification program in an effort to hire 2,000 additional technicians by 2018. They found that employees who completed the program and received their certification were 50 percent more likely to stay with the company.<sup>16</sup>

To become a master electrician, a candidate must:

- Apply and secure an electrician apprentice license through TDLR.
- Document 8,000 hours of on-the-job training under the supervision of a master electrician before they can sit for the journeyman exam.
- After passing the journeyman exam, the candidate then needs to meet the following requirements to be eligible for the master electrician exam: candidates must document an additional 4,000 hours of on-the-job training under the supervision of a master electrician and must hold a journeyman electrician license for a minimum of two years.<sup>14</sup>

In another article, the CEO of the Institute Workplace Skills & Innovation reported that “[e]mployers can earn a 36 percent return on their investments in apprenticeship training – higher than just about any investment a company can earn on its capital and far higher than the 10 percent typical among S&P 500 firms.”<sup>17</sup>

## Apprenticeships in European Countries

Two European countries that are often looked to for their apprenticeship models are Germany and Switzerland. In America, there is a stigma that has been historically associated with apprenticeships while in European countries there is a different philosophy. Apprenticeship programs are valued and seen as a foundation that everyone should have access to as they begin their respective viable careers.<sup>18</sup>

In Germany, most apprentices begin at age seventeen and work and earn for approximately three-and-a-half years.<sup>19</sup> Instead of “dirty, dark, and dangerous,” apprenticeships in this country are seen as “clean, high tech opportunities” for all.<sup>20</sup> Apprenticeships are carried out as partnerships between the apprentice, the employer, and the educator. Additionally, some companies have found that having parental support and consent is critical for the apprentices’ success.

Ford invites parents to attend the apprenticeship program's orientation session to indicate their support for their loved one's participation in the program. Apprentices then spend one-to-two days in the classroom with a set curriculum and another three-to-four days on the job. The teaching and mentoring is conducted by the educator and by the employer; the apprentice is an employee of the company as they work and earn. Ford has seen a great return on investment with 95 percent of hired apprentices staying with the company long term.<sup>21</sup>

Switzerland's apprenticeship model is referred to as a gold standard in vocational education as studies have shown that the students that pursue apprenticeships end up earning more than their peers that attended college. Moreover, the Swiss business community holds apprentices in high regard with companies like IBM preferring to hire "a mix of apprentices and academically trained students."<sup>22</sup> Like in Germany, a third of their graduating seniors pursue college educations while the other two-thirds go on to become apprentices.<sup>23</sup>

### National Task Force

In June 2017, President Trump issued a Presidential Executive Order Expanding Apprenticeships in America.<sup>24</sup> Through the executive order, Trump established that "it shall be the policy of the federal government to provide more affordable pathways to secure, high paying jobs by promoting apprenticeships and effective workforce development programs, while easing the regulatory burden on such programs and reducing or eliminating taxpayer support for ineffective workforce development programs."<sup>25</sup> The executive order also established the Task Force on Apprenticeship Expansion and directed them to "identify strategies and proposals to promote apprenticeships, especially in sectors where apprenticeship programs are insufficient."<sup>26</sup> More specifically, the directive called for strategies and proposals on federal initiatives, regulatory and legislative reforms that will facilitate the creation

and success of apprenticeship programs, and strategies for promoting such programs with the private sector.<sup>27</sup>

The task force, which conducted its work via four subcommittees (education and credentialing; attracting business to apprenticeship; expanding access, equity, and career awareness; and administrative and regulatory strategies to expand apprenticeship), developed twenty-six recommendations which are detailed in its May 2018 Final Report to the President of the United States.<sup>28</sup>

The administration has committed to the growth in apprenticeships with increased federal appropriations for registered programs. Due to this escalation in funding, states across the nation have been doing their part to promote the creation of more apprenticeship programs.<sup>29</sup> In Texas, the Texas Workforce Commission (TWC) has established an Office of Apprenticeships Programs that is staffed with specialists that work to promote the model throughout the state.

Along with the task force's work, the Urban Institute, in July 2018, announced the development of competency-based occupational frameworks for apprenticeship programs. The frameworks were developed under a contract with the DOL and work to simplify the development and approval processes for establishing registered apprenticeship programs. Researchers at the Urban Institute believe that the frameworks will help the U.S. scale its apprenticeship program; noting that less than 0.3 percent of Americans pursue apprenticeships compared to approximately 3.0 percent of the population in other countries including Canada and the United Kingdom, pursuing viable careers through apprenticeship programs.

## Developing An Apprenticeship Program

Due to the magnitude of a registered apprenticeship, it cannot be overstated that it requires a significant investment both in terms of time and money as it relates to its creation. Some of the programs evaluated invested over a year of staff time and \$200,000+ as an initial investment in developing and launching their respective programs.

Much of this investment can be attributed to the hiring of new staff or redirection of current staff to design the program and to develop the curriculum.

To assist companies that are interested in developing their own registered apprenticeship programs, the DOL published [A Quick-Start Toolkit: Building Registered Apprenticeship Programs](#).<sup>30</sup> The steps to creating a registered apprenticeship are:

- Consider and adopt apprenticeships as a strategy that will help to meet your community's needs for skilled workers.
- Partner with key stakeholders in your region that agree on apprenticeships as a tool for meeting the local workforce needs.
- Design your apprenticeship program noting which partner will be responsible for each component (i.e., develop curriculum; business/employer on-the-job training; classroom instruction; wages and increased in wages at regular intervals and as higher skills are gained; reporting requirements; and, identify funding opportunities).
- Register your program with the DOL.
- Launch your program.<sup>31</sup>

Of the five quick-start steps, developing and designing an apprenticeship program is the step that will require the most focused attention. Creating curriculum requires experts in that specific industry to meticulously write a step-by-step manual that will be used to train fellow employees. This task will take significant staff, partner, and/or consultant time. As the curriculum is being written, it is critical that thought be given to how the content will be taught in a classroom setting and also in the field (i.e., on-the-job training) given registered apprenticeships require both components. The availability of the Urban Institute's competency-based occupational frameworks for apprenticeship programs may be a way to shorten the development and design phase.<sup>32</sup> After all, they were developed to simplify the development and approval processes for establishing

registered apprenticeship programs. Another tool that may be helpful is the Urban Institute's [Technical Assistance Guide: Starting a Registered Apprenticeship Program, A Guide for Employers or Sponsors](#) which provides a more detailed step-by-step guide for designing and launching registered apprenticeship programs.<sup>33</sup>

## Case Studies

### CyberDefenses

The cybersecurity industry is evolving quickly as new technologies and new cybercriminal activities emerge in ways that affect all businesses, organizations, and individuals. One of the challenges this trend has caused is a shortage of cybersecurity talent with the skills to keep pace with the rapidly changing cyberattack landscape. Round Rock-based CyberDefenses is addressing this issue head-on. The company partnered with Austin Community College to launch its registered Apprenticeship Program in January 2018, and the program is successfully accomplishing what it set out to do – to develop cybersecurity career-ready talent prepared to immediately step into high demand roles.<sup>34,35</sup>

The CyberDefenses Academy is uniquely positioned to properly train apprentices that are capable of stepping into a growing number of cybersecurity jobs. Founded by returning military cybersecurity veterans, the CyberDefenses team understands the critical importance of intense training. It is hiring and training its talent based on the thesis that a person with the right attitude and aptitude can be trained to be a Level I security operations center (SOC) analyst within a year. This belief forms the foundation of the program's admissions criteria. Higher education is important and encouraged, but it is not a requirement to becoming an excellent technical resource. Individuals graduating from colleges and universities still require on-the-job training for the specific technologies and use of those technologies and methodologies to deliver cybersecurity



services.

CyberDefenses' training program incorporates these necessary steps into the education process. The result is graduates from the apprenticeship program are able to step into a position with the equivalent of three years of experience. Apprentices are able to immediately earn a competitive salary when their peers are just entering the job market and looking for their first entry-level position.<sup>36</sup>

The rigorous program alternates classroom instruction with on-the-job training over twelve months. During their training, the apprentices are also eligible to seek three technical certifications: Comp TIA A+, Comp TIA Network+, and Comp TIA Security+. The Comp TIA A+ and Comp TIA Network+ certifications are industry standards for working in the information technology (IT) field. The Comp TIA Security+ certification "validates the baseline skills necessary to perform core security functions and pursue an IT security career."<sup>37</sup> The certifications are also a gateway to more specialized training and proficiencies, which is an important aspect of preparing for the future as technology continues to evolve at an increasingly rapid pace.

The CyberDefenses Apprenticeship Program began with six carefully vetted apprentices; all of them young adults with some aptitude for technology. The program required the participants to sign a two-year employment contract which goes into effect immediately following the apprenticeship program. With the first cohort close to completion, two of the apprentices are working on one of CyberDefenses' U.S. Air Force contracts while the other four are assisting with various projects in the commercial security operations practice. All of them passed the A+ and Networks+ certifications on their first attempt, and all six are in the vetting process to receive a top secret security clearance. CyberDefenses plans to continue the program. Today, the company is continuing to adapt the model to keep pace with standards and developments in the technology, cybersecurity, and education industries.



*"Tech is the fastest-growing industry in the world, and 1 in 20 job openings are in tech."<sup>38</sup>*  
– Apprenti

### Apprenti

Apprenti, a program of the Washington Technology Industry Association (WTIA) Workforce Institute, is a registered apprenticeship program that focuses on placing diverse talent in jobs with local tech companies.<sup>39</sup> Apprenti began in Washington State in direct response to the severe technology workforce gap. Tech companies were in such dire need of talent that many were beginning to wonder if they would have to move to another state in order to find talent.

WTIA found, however, that employers did not want to leave the state. Instead, employers were open to "creative solutions that [would] result in a high skilled workforce."<sup>40</sup> Through their research, WTIA found that that sixty percent of the tech jobs could be done by "highly competent candidates with a two year degree or a certification."<sup>41</sup> They also discovered that their state's technology workforce was less than nineteen percent women, less than five percent racial minorities, and less than one percent veteran. With these three facts in hand, WTIA set off to establish Apprenti – a registered apprenticeship program that "provides a proven, reliable pipeline for underrepresented groups such as minorities, women, and veterans to gain training, certification, and placement within the talent-hungry tech industry."<sup>42</sup> Today, Apprenti is available in ten locations across the nation.

Interested persons must be age eighteen, have a high school diploma or equivalent, and be a U.S. citizen or permanent legal resident for the year-long apprenticeship. They must also take a competency assessment. The top ranked candidates will then be invited to sit through the interview process. After that initial screening process, candidates will be invited to interview with a hiring partner that has been selected based on the candidate's occupational fit and hiring partner demand. When a



match is made, the candidate is offered an apprenticeship with the hiring partner.

Apprentices must then successfully complete certain technical courses before they are placed with the hiring partner for a one-year on-the-job apprenticeship. The twelve-month program includes eight-to-twenty-two weeks of “practical skill instruction” at training wages that are “at least sixty percent of fully-qualified regular employees.”<sup>43</sup> After six months, wages are raised to at least seventy percent of fully-qualified regular employees. If the year-long apprenticeship goes well for both parties, apprentices may be offered full-time employment. If it is not a good fit for whatever reason, the apprentices are now equipped to seek employment with other tech companies.<sup>44</sup>

Apprenti reports that hiring partners will benefit from six factors: diversity, pre-screened talent, trained and tested professionals, compliance (reporting requirements to state and federal entities), retention, and cost savings.<sup>45</sup> Apprenti asks for a \$2,500 per apprentice placement fee.

Apprenti also offers three licensing options: turnkey (Apprenti will train you or they can manage the program on your behalf), assessment portal (to help identify and screen candidates), and consulting (to help enhance existing apprenticeship programs and to help register new programs with the DOL).<sup>46</sup>

Apprenti offers the following accelerated training and certifications:<sup>47</sup>

- Software developer
- Network security administrator
- Web developer
- Windows system administrator
- Linux systems administrator
- Cloud support specialist 1 and 2
- Data center technician
- IT business analyst

### The Industry Consortium for Advanced Technical Training (ICATT) Apprenticeship Program

ICATT was created by the German American Chamber of Commerce of the Midwest and is currently supported by the Illinois Advanced Apprenticeship Consortium, Illinois Manufacturer’s Association Education Foundation, and The Joyce Foundation. The program focuses exclusively on high-tech manufacturers and companies with complex technologies or logistics. They wanted to establish an American apprenticeship program that was truly modeled after what is being done in Germany where apprenticeships are valued and seen as the way to a successful career, so it is no surprise that they proudly proclaim that they are the only program in the Midwest fully benchmarked on the German Dual Education System.<sup>48,49</sup>

In 2012, ICATT launched with seven business partners and has grown exponentially every year to now include nearly fifty businesses.<sup>50</sup> The ICATT program staff supports the program as a whole by growing the business-partner network, recruiting apprentices, and managing and overseeing the apprentice testing and certification processes.

Partner companies can expect to invest \$30,000 to \$35,000 per apprentice per year.<sup>51</sup> This estimated figure includes wages, stipends, tuition, and fees. In return, companies can require a two-year employment commitment upon completion of the program. ICATT reports that “the investment into the apprentice creates an exceptional sense of loyalty towards the employer.”<sup>52</sup> To be eligible for the ICATT program, apprentices must have a high school diploma or General Equivalency Degree (GED), and they must pass a two-year college entrance exam. Eighty-five percent of ICATT apprentices complete the program successfully.

### Guilford Apprenticeship Partners

In 2000, the Manufacturing Council in Greensboro, North Carolina, brought together stakeholders from High Point



*“While apprenticeships are fundamentally a business investment, rapid expansion of apprenticeships hinges on a cultural change across companies, colleges, high schools, labor unions, trade associations, and other institutions.”<sup>53</sup>*

*– Task Force on Apprenticeship Expansion*

and Greensboro, two neighboring communities with populations of approximately 100,000 each, to discuss and develop a solution to the dire workforce shortages they were experiencing region-wide and across various industries.<sup>54</sup> The group of stakeholders encompassed the business community, including those with existing apprenticeship programs and companies of all sizes; career and technical education directors from the local school districts; the local community college; and local chambers. Together, and in response to the problem, they established the Guilford Apprenticeship Partners (GAP), a broad-based initiative that would establish and support multiple registered apprenticeship programs that would in turn help establish an ample talent pipeline for the region as a whole. The Greensboro Chamber of Commerce provides staff support for the partnership and, most importantly, maintains responsibility for all required DOL reporting.<sup>55</sup>

GAP primarily targets high school juniors to prepare them to begin their apprenticeship programs during their senior years where they will attend a half-day of classes and a half-day of work. After graduation, the apprentices will attend one day of classes and four days of on-the-job training. Today, the program includes fourteen apprenticeships in various fields including: computer numeric controlled machinists, tool and die makers, electronics technician, quality technician, robotics technician/welder, and electrical assembly. GAP plans to expand to manufacturing and field services (i.e., HVAC, electrician, and plumbing) in the near future. After those programs are established, they will explore new tracks in IT and logistics.

To ensure consistency throughout the program, all participating business partners sign a memorandum of understanding which outlines specific requirements that must be met. GAP partners support the partnership and the administrative function provided by the chamber via an annual fee of \$2,500 for new members and \$1,000 for returning members. In addition to these annual fees, partners must agree to pay apprentices a GAP-established wage throughout the program (this includes pre-established wage increases), and they must also have at least one full-time equivalent (FTE) staff person dedicated to mentoring the apprentice(s).

GAP has created a regional movement, and it will continue to grow with a recently awarded \$3.2 million state contract, an initiative that successfully made its way through the North Carolina General Assembly, therefore indicating statewide support for GAP and apprenticeship programs in their state. The funds will be used for a variety of items including one full-time staff person to help coordinate the program, a comprehensive marketing campaign, transportation for program participants, and financial assistance to help smaller companies pay wages to their apprenticeships.<sup>56</sup>

#### Greater Waco Advanced Manufacturing Academy

The Waco Independent School District (WISD) in conjunction with the Waco Business League, Greater Waco Chamber of Commerce, Texas State Technical College, and area manufacturing businesses, joined forces in 2012 to create the Greater Waco Advanced Manufacturing Academy.<sup>57</sup> They provide “advanced technical and manufacturing training for high school students.”<sup>58</sup> The academy is a WISD Career and Technical Education (CTE) program offering, and their goal is to graduate students at one of three exit points: “work, associate’s degree, or advance skill certificates and degrees.”<sup>59,60</sup> The program is affiliated with Texas State Technical College, so students can earn dual credit in welding, machining, and electronics/robotics.

The academy is open to any school district within a sixty mile radius of Waco. Interested students must be in 10th, 11th, or 12th grades and are required to submit an academy program application along with official copies of their high school transcripts and a high school conduct report. Juniors and seniors split their day between their home campus and the academy. Juniors are encouraged, but not required, to seek paid internships with academy business partners. Seniors are required to work at a GWAMA business partner job site for fifteen hours a week at a pay of \$12.50 per hour.

During their first year in the academy, students have certification in forklift operations as well as obtaining Occupational Safety and Health Administration (OSHA) 10 certification. During their second year in the program, students obtain cardiopulmonary resuscitation (CPR) and safety certification. Every welding student, regardless of year, is able to earn an American Welding Society welding certification. The goal is that graduating seniors will be offered a full-time opportunity with one of the twenty-two academy business partners where starting wages range from \$11-15 per hour plus benefits.<sup>61</sup>

WISD provides its students transportation to and from the academy, but does not provide transportation to students outside the district. Other participating school districts must determine if and how they provide their students transportation to and from the academy; otherwise students must make their own arrangements. The academy program cost is \$3,800 per student per school year. For students outside of WISD, their respective home districts must pay the program fee directly to WISD.

During the 2018-2019 school year, the academy is teaching 209 students at a ratio of eighteen students to one faculty. Seventy-five percent are from WISD while the remaining are from nine partnering school districts. The academy launched in 2012 with one program in welding, and today it has grown to include programs in precision metal manufacturing, robotics and electronics, and construction science.

## Recommendations

Round Rock, like every community across the nation, must grapple with the record-setting low unemployment rates, significant aging workforce, and decades-long issues that have resulted in an inadequate talent pipeline. The chamber's WROC strategy provided a multi-year roadmap for ways the community could address its workforce shortage and must look ahead at new ideas and models that will result in the development of an ample talent pool for the business community. As such, the chamber proposes the following recommendations.

### Recommendation 1: Develop a Regional Apprenticeship Coalition

The chamber should work with stakeholders to establish a regional apprenticeship coalition (RAC) that will leverage area resources and maximize impact. Through a series of stakeholder meetings during the summer of 2018, local and regional stakeholders confirmed their desire to establish meaningful job-training opportunities that provide participants with soft-skills training and mentoring. Stakeholders want a training program that is focused, meaningful, and time-limited. They all agreed that the business community needs workers now. Stakeholders are also ready to think outside the box; they want to be creative and are all in favor of establishing partnerships and leveraging resources. The RAC should be a regional model that blends the program features seen via the Waco-based GWAMA program and the North Carolina-based GAP program.

Whether based at the Round Rock Chamber or another organization, it will be imperative to designate a lead group who will be responsible for developing the registered apprenticeships, ensuring federal reporting compliance, and identifying grant and other funding opportunities. The RAC should adopt a crucial GAP practice that ensures that incoming apprentices feel appreciated, acknowledged, and important. The RAC should also ensure that parents are included in any



education and outreach efforts about the regional effort so that they understand and support the fact that apprenticeships are a means to a viable career for their children. By having one centralized party providing hands-on coordination and oversight, the RAC will have a higher probability of producing meaningful results.

### Recommendation 2: Develop a Series of Registered Apprenticeships

A key component of the GAP program is the formation and ongoing maintenance of registered apprenticeships. As referenced previously, developing these types of apprenticeships take significant resources from both a time and cost perspective. The formation of the RAC provides the opportunity for multiple entities across the area to combine their efforts to create a series of registered apprenticeships over the next couple of years. By using the Urban Institute's Competency-Based Occupational Frameworks for Registered Apprenticeships as a foundation, registered apprenticeships in specific sectors (e.g., manufacturing) could deliver a pathway to positively impact the talent shortage in a fairly immediate manner.

Business organizations across the region, working with local stakeholders, would identify the sectors in greatest demand and coordinate with the RAC throughout development. Once registered, the apprenticeship curriculums would be available for use by any RAC member and designed in a manner as to be easily tailored for their company's specifications.

### Recommendation 3: Develop a Series of Non-Registered Apprenticeships

If RAC is in agreement, this effort could also be extended to the development of a series of non-registered apprenticeship programs. First, the lead entity would have to identify existing non-registered apprenticeship programs, document their curriculum, and catalogue said curriculum so that it becomes a resource for other similar employers in the area.

This may be a challenge given employers who currently train their new staff may not associate their talent development efforts with a non-registered apprenticeship program so an education campaign may be necessary. Extreme care would be taken to ensure that proprietary information and practices are not included in the curriculum; the focus would be on identifying processes and techniques that are general practices in the industry. In essence, RAC would be establishing additional templates, like the Urban Institute's Competency-Based Occupational Frameworks, that would be made available to coalition partners.

## Conclusion

Round Rock is experiencing an unprecedented level of economic vitality. Ensuring that it maintains this positive environment is of upmost priority to the Round Rock Chamber and the business community in general. One of the most, if not the most, critical component is to make sure that a fertile and skilled workforce is readily available. This issue brief highlights the fact that apprenticeships should be an aspect of that commitment. Building a regional coalition focused on developing registered and non-registered apprenticeship programs will be a tremendous step forward. Creating an initiative of this magnitude, however, will not be easy, rapid, or inexpensive. Even with these challenges in mind, the chamber believes that it is worth the necessary effort and resources as it should result in an ample talent pipeline that is ready and willing to pursue careers with Round Rock companies.



## End Notes

- <sup>1</sup> Henry Fields, "Rebuilding the Pipeline: Supply and Demand in the Skilled Trades" (State of Oregon Employment Department, January 17, 2018) <https://www.qualityinfo.org/-/rebuilding-the-pipeline-supply-and-demand-in-the-skilled-trades> (August 13, 2018)
- <sup>2</sup> "Labor Shortages Loom as Most-In-Demand Group of Workers Retire" (Career Profiles: Career and Job Search Guide) <http://www.careerprofiles.info/skilled-trade-worker-shortage.html> (August 9, 2018)
- <sup>3</sup> Emily Peiffer, "A Strong Apprenticeship Model Can Help Solve America's Workforce Challenges" (Urban Institute, Urban Wire: Job Market and Labor Force, November 15, 2017) <https://www.urban.org/urban-wire/strong-apprenticeship-model-can-help-solve-americas-workforce-challenges> (August 7, 2018)
- <sup>4</sup> "Workforce Realization Occurring Cooperatively, a comprehensive workforce development strategy for Round Rock, Texas" (Round Rock Chamber, June 2015) <https://roundrockchamber.org/community-enhancement/talent-development/workforce-development-strategy/> (August 8, 2018).
- <sup>5</sup> Collin Gutman, Eric Selezno, "Manufacturing Talent: The Future of Apprenticeships" (RealClear Education, June 5, 2018) [https://www.realcleareducation.com/articles/2018/06/05/manufacturing\\_talent\\_the\\_future\\_of\\_apprenticeships\\_110281.html](https://www.realcleareducation.com/articles/2018/06/05/manufacturing_talent_the_future_of_apprenticeships_110281.html) (June 8, 1028)
- <sup>6</sup> Andy Carlo, "The Workforce and Washington," Hardware + Building Supply Dealer (April 2018): 38.
- <sup>7</sup> "Frequently Asked Questions" (U.S. Department of Labor, Frequently Asked Questions About Apprenticeships, 2018) <https://www.dol.gov/featured/apprenticeship/faqs> (August 30, 2018)
- <sup>8</sup> "Frequently Asked Questions" (U.S. Department of Labor, Frequently Asked Questions About Apprenticeships, 2018) <https://www.dol.gov/featured/apprenticeship/faqs> (August 30, 2018)
- <sup>9</sup> "Technical Assistance Guide: Starting a Registered Apprenticeship Program, A Guide for Employers and Sponsors" (Center for Labor, Human Resources and Populations, Urban Institute, June 2017) [https://innovativeapprenticeship.org/wp-content/uploads/2017/06/Employer-Guide\\_June-2017.pdf](https://innovativeapprenticeship.org/wp-content/uploads/2017/06/Employer-Guide_June-2017.pdf), November 14, 2018
- <sup>10</sup> "Funding Sources for Registered Apprenticeship Programs" (Apprenticeship USA, November 2018) <https://apprenticeshipusa.workforcegps.org/resources/2017/04/27/10/56/Funding-Sources-for-Registered-Apprenticeship-Programs>, November 14, 2018
- <sup>11</sup> "Funding Sources for Registered Apprenticeship Programs" (Apprenticeship USA, November 2018) <https://apprenticeshipusa.workforcegps.org/resources/2017/04/27/10/56/Funding-Sources-for-Registered-Apprenticeship-Programs>, November 14, 2018
- <sup>12</sup> Diana Hoang, "TDIndustries Summer Internship Program" (Email to Amy Mizcles, August 23, 2018)
- <sup>13</sup> "Programs Licensed and Regulated by TDLR" (Texas Department of Licensing and Regulation, November 13, 2018) <https://www.tdlr.texas.gov/> (November 13, 2018)
- <sup>14</sup> "Electrical Safety and Licensing Frequently Asked Questions" (Texas Department of Licensing and Regulation, November 13, 2018) <https://www.tdlr.texas.gov/> (November 13, 2018)
- <sup>15</sup> "Facts About Registered Apprenticeships," United States Department of Labor, Accessed August 16, 2018. <https://www.dol.gov/featured/apprenticeship/employers>
- <sup>16</sup> Collin Gutman, Eric Selezno, "Manufacturing Talent: The Future of Apprenticeships" (RealClear Education, June 5, 2018) [https://www.realcleareducation.com/articles/2018/06/05/manufacturing\\_talent\\_the\\_future\\_of\\_apprenticeships\\_110281.html](https://www.realcleareducation.com/articles/2018/06/05/manufacturing_talent_the_future_of_apprenticeships_110281.html) (June 8, 1028)
- <sup>17</sup> Tess Taylor, "Apprenticeship Programs Re-Emerge With Stronger ROI for Companies," (HR Drive, Deep Dive, August 30, 2016), <https://www.hrdrive.com/news/apprenticeship-programs-re-emerge-with-stronger-roi-for-companies/425346/> (August 22, 2018)

## End Notes

- <sup>18</sup> DeWayne Street, “Apprenticeship Model Best Practices,” (Increasing Apprenticeship Opportunities in Round Rock: A Conversation with Key Stakeholders, Round Rock Chamber, June 14, 2018)
- <sup>19</sup> DeWayne Street, “Apprenticeship Model Best Practices,” (Increasing Apprenticeship Opportunities in Round Rock: A Conversation with Key Stakeholders, Round Rock Chamber, June 14, 2018)
- <sup>20</sup> DeWayne Street, “Apprenticeship Model Best Practices,” (Increasing Apprenticeship Opportunities in Round Rock: A Conversation with Key Stakeholders, Round Rock Chamber, June 14, 2018)
- <sup>21</sup> DeWayne Street, “Apprenticeship Model Best Practices,” (Increasing Apprenticeship Opportunities in Round Rock: A Conversation with Key Stakeholders, Round Rock Chamber, June 14, 2018)
- <sup>22</sup> Greg Ferenstein, “How History Explains America’s Struggle to Revive Apprenticeships,” (Brown Center Chalkboard, Brookings Institution, May 23, 2018) <https://www.brookings.edu/blog/brown-center-chalkboard/2018/05/23/how-history-explains-americas-struggle-to-revive-apprenticeships/> (August 16, 2018)
- <sup>23</sup> Greg Ferenstein, “How History Explains America’s Struggle to Revive Apprenticeships,” (Brown Center Chalkboard, Brookings Institution, May 23, 2018) <https://www.brookings.edu/blog/brown-center-chalkboard/2018/05/23/how-history-explains-americas-struggle-to-revive-apprenticeships/> (August 16, 2018)
- <sup>24</sup> “Presidential Executive Order Expanding Apprenticeships in America” (Executive Orders, Presidential Actions, The White House, June 15, 2017) <https://www.whitehouse.gov/presidential-actions/3245/> (August 15, 2018)
- <sup>25</sup> “Presidential Executive Order Expanding Apprenticeships in America” (Executive Orders, Presidential Actions, The White House, June 15, 2017) <https://www.whitehouse.gov/presidential-actions/3245/> (August 15, 2018)
- <sup>26</sup> “Presidential Executive Order Expanding Apprenticeships in America” (Executive Orders, Presidential Actions, The White House, June 15, 2017) <https://www.whitehouse.gov/presidential-actions/3245/> (August 15, 2018)
- <sup>27</sup> “Presidential Executive Order Expanding Apprenticeships in America” (Executive Orders, Presidential Actions, The White House, June 15, 2017) <https://www.whitehouse.gov/presidential-actions/3245/> (August 15, 2018)
- <sup>28</sup> “Final Report to The President of the United States” (Task Force on Apprenticeship Expansion, May 10, 2018) <https://www.dol.gov/apprenticeship/docs/task-force-apprenticeship-expansion-report.pdf>, November 19, 2018
- <sup>29</sup> Robert I. Lerman, Diana Elliott, “How New Competency Frameworks Can Help U.S. Policymakers and Employers Boost Apprenticeships” (Urban Institute, Urban Wire: Job Market and Labor Force, July 24, 2018) <https://www.urban.org/urban-wire/how-new-competency-frameworks-can-help-us-policymakers-and-employers-boost-apprenticeships> (August 7, 2018)
- <sup>30</sup> “A Quick-Start Toolkit: Building Registered Apprenticeship Programs” (U.S. Department of Labor, 2018) [https://www.doleta.gov/oa/employers/apprenticeship\\_toolkit.pdf](https://www.doleta.gov/oa/employers/apprenticeship_toolkit.pdf) (November 14, 2018)
- <sup>31</sup> “A Quick-Start Toolkit: Building Registered Apprenticeship Programs” (U.S. Department of Labor, 2018) [https://www.doleta.gov/oa/employers/apprenticeship\\_toolkit.pdf](https://www.doleta.gov/oa/employers/apprenticeship_toolkit.pdf) (November 14, 2018)
- <sup>32</sup> Robert I. Lerman, Diana Elliott, “How New Competency Frameworks Can Help U.S. Policymakers and Employers Boost Apprenticeships” (Urban Institute, Urban Wire: Job Market and Labor Force, July 24, 2018) <https://www.urban.org/urban-wire/how-new-competency-frameworks-can-help-us-policymakers-and-employers-boost-apprenticeships> (August 7, 2018)
- <sup>33</sup> “Technical Assistance Guide: Starting a Registered Apprenticeship Program, A Guide for Employers or Sponsors” (Center for Labor, Human Resources and Populations, Urban Institute, June 2017) [https://innovativeapprenticeship.org/wp-content/uploads/2017/06/Employer-Guide\\_June-2017.pdf](https://innovativeapprenticeship.org/wp-content/uploads/2017/06/Employer-Guide_June-2017.pdf) (November 14, 2018)
- <sup>34</sup> Mark Richardson, “Apprenticeship Model Best Practices,” (Increasing Apprenticeship Opportunities in Round Rock: A Conversation with Key Stakeholders, Round Rock Chamber, June 14, 2018)
- <sup>35</sup> “Apprentice Program” (CyberDefenses, 2018) <https://cyberdefenses.com/apprentice-program/> (August 23, 2018)
- <sup>36</sup> Mark Richardson, “Apprenticeship Model Best Practices,” (Increasing Apprenticeship Opportunities in Round Rock: A Conversation with Key Stakeholders, Round Rock Chamber, June 14, 2018)



## End Notes

- <sup>37</sup> “CompTIA Career Pathway” (CompTIA, 2018) <https://certification.comptia.org/certifications/which-certification> (August 23, 2018)
- <sup>38</sup> “An Accelerated Career Path Just For You” (Apprenti, November 2018) <https://apprenticareers.org/apply/> (November 14, 2018)
- <sup>39</sup> “Apprenti – The Path, The Plan, Your Career in Tech” (Washington Technology Industry Association, July 12, 2017) [https://www.youtube.com/watch?time\\_continue=72&v=Y6h8UtNDqRE](https://www.youtube.com/watch?time_continue=72&v=Y6h8UtNDqRE), November 14, 2018
- <sup>40</sup> “Apprenti – The Path, The Plan, Your Career in Tech” (Washington Technology Industry Association, July 12, 2017) [https://www.youtube.com/watch?time\\_continue=72&v=Y6h8UtNDqRE](https://www.youtube.com/watch?time_continue=72&v=Y6h8UtNDqRE), November 14, 2018
- <sup>41</sup> “Apprenti – The Path, The Plan, Your Career in Tech” (Washington Technology Industry Association, July 12, 2017) [https://www.youtube.com/watch?time\\_continue=72&v=Y6h8UtNDqRE](https://www.youtube.com/watch?time_continue=72&v=Y6h8UtNDqRE), November 14, 2018
- <sup>42</sup> “The Apprenti Model: In Partnership with Industry” (Apprenti, November 2018) <https://apprenticareers.org/about/> (November 14, 2018)
- <sup>43</sup> “Apprenticeship vs. Internship” (Apprenti, November 2018) <https://apprenticareers.org/about/>, November 14, 2018
- <sup>44</sup> “An Accelerated Career Path Just For You” (Apprenti, November 2018) <https://apprenticareers.org/apply/>, November 14, 2018
- <sup>45</sup> “Apprenti is Your Key to Hiring Smart” (<https://apprenticareers.org/hire/>, November 2018) <https://apprenticareers.org/hire/>, November 14, 2018
- <sup>46</sup> “License Apprenti” (Apprenti, November 2018) <https://apprenticareers.org/license/>, November 14, 2018
- <sup>47</sup> “Accelerated Training and Certification” (Apply, Apprenti, 2018) <https://apprenticareers.org/apply/>, November 20, 2018
- <sup>48</sup> Mario Kratsch, “About ICATT” (Conference call, April 2, 2018)
- <sup>49</sup> “About ICATT” (ICATT Apprenticeship Program, About Us, 2018) <https://www.icattapprenticeships.com/about-us/> (April 2, 2018)
- <sup>50</sup> “ICATT Network Companies” (ICATT Apprenticeship Program, 2018) <https://www.icattapprenticeships.com/icatt-network-companies/> (April 2, 2018)
- <sup>51</sup> Mario Kratsch, “About ICATT” (Conference call, April 2, 2018)
- <sup>52</sup> “Answers to the Top 4 Questions for Future ICATT Network Companies” (ICATT Apprenticeship Program, Companies FAQs, 2018) <https://www.icattapprenticeships.com/companies/faq/> (April 2, 2018)
- <sup>53</sup> “Final Report to the President of the United States” (Task Force on Apprenticeship Expansion, May 10, 2018) <https://www.dol.gov/apprenticeship/docs/task-force-apprenticeship-expansion-report.pdf> (May 10, 2018)
- <sup>54</sup> Tammy Simmons, Brian Norris “Introduction to GAP” (Conference Call, June 27, 2018)
- <sup>55</sup> Tammy Simmons, Brian Norris “Introduction to GAP” (Conference Call, June 27, 2018)
- <sup>56</sup> Tammy Simmons, Brian Norris “Introduction to GAP” (Conference Call, June 27, 2018)
- <sup>57</sup> “About Us” (Waco Independent School District, Greater Waco Advanced Manufacturing Academy, 2018) <https://www.wacoisd.org/domain/2556> (August 23, 2018)
- <sup>58</sup> “About Us” (Waco Independent School District, Greater Waco Advanced Manufacturing Academy, 2018) <https://www.wacoisd.org/Page/4237> (August 23, 2018)
- <sup>59</sup> “For Prospective Employers” (Waco Independent School District, Greater Waco Advanced Manufacturing Academy, 2018) <https://www.wacoisd.org/domain/2578> (August 23, 2018)
- <sup>60</sup> “For Prospective Employers” (Waco Independent School District, Greater Waco Advanced Manufacturing Academy, 2018) <https://www.wacoisd.org/domain/2578> (August 23, 2018)
- <sup>61</sup> Dr. Dale McCall, “Greater Waco Advanced Manufacturing Academy” (Conference Call, August 29, 2018)