

# Workforce Potential Project

Analysis of Area Labor Market and Provider Capacity



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**September, 2012**

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This report was prepared with funds provided by the Austin Area Research Organization to the Ray Marshall Center for the Study of Human Resources at the University of Texas at Austin. The views expressed here are those of the authors and do not represent the positions of the funding agencies or The University.

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## ACRONYMS

AARO	Austin Area Research Organization
AAS	Associate of Applied Science
ABC	Associated Builders and Contractors
ACC	Austin Community College
ADN	Associate Degree in Nursing
AHEC	Texas Area Health Education Center – Capital Region
ASE	Automotive Service Excellence
BLS	U.S. Bureau of Labor Statistics
BSN	Bachelor of Science in Nursing
CAD	Computer Augmented Design
CAPCOG	Capital Area Council of Governments
CI	Cardiac-Interventional
CLASP	Center for Law and Social Policy
CPA	Certified Public Accountant
CPPP	Center for Public Policy Priorities
CRT	Certified Respiratory Therapist
CT	Computed Tomography
DARS	Texas Department of Assistive and Rehabilitative Services
HISC	Health Industry Steering Committee
HRSA	Health Resources and Services Administration
HVAC	Heating, Ventilation, and Air Conditioning
IBEW	International Brotherhood of Electrical Workers
IEC	Independent Electrical Contractors
IOM	Institute of Medicine
IT	Information Technology
LMI	Labor Market Information
LPN	Licensed Practical Nurse
LVN	Licensed Vocational Nurse
MRI	Magnetic Resonance Imaging
NATEF	National Automotive Technicians Education Foundation
NBRC	National Board for Respiratory Care
NCHEMS	National Center for Higher Education Management Systems
NCLEX	National Council Licensure Examination
NCLEX-PN	National Council Licensure Examination – Practical Nurse
NECA	National Electrical Contractors Association
RN	Registered Nurse
ROI	Return on Investment
RRT	Registered Respiratory Therapist
TSI	Texas Success Initiative
TSTC	Texas State Technical College
WIA	Workforce Investment Act
WPP	Workforce Potential Project

## ACKNOWLEDGMENTS

We want to thank the Austin Area Research Organization (AARO) for sponsoring the research contained in this report. Lynn Sherman has been a driving force in getting the Workforce Potential Project started and bringing it to fruition. Mark Curry of Wells Fargo raised funds to support the project. In addition to AARO, contributors included St. David's Foundation, Seton Family of Hospitals, Live Oak Gottesman, ABC Home and Commercial Services, The Methodist Foundation, the Health Industries Steering Committee, Workforce Solutions—Capital Area, Ali Khataw of Encotech Engineering Consultants, and Wells Fargo Bank. Barbara Johnson and Leslie Weston of the AARO staff arranged meetings and facilitated communication with the research team on this project.

Our thanks are due to the Austin Community College and its staff. Michael Midgley, Vice President of Instruction, provided insights regarding the opportunities and challenges inherent to the WPP and was especially helpful in enlisting the cooperation of the deans, including Eileen Klein, Executive Dean of Health Sciences; Linda Smarzik, Dean of Computer Studies and Advance Technology; Charles Quinn, Dean of Business Studies and Gary Hampton, Dean of Applied Technologies, Multimedia and Public Service, and Hector Aguilar, Executive Dean of Continuing Education. These Deans opened doors to their department chairs and instructors, as well as Advisory Committee members.

Additionally, we much appreciate the dozens of individuals across the Austin business, research, and training communities who generously gave their time and energy to share their knowledge and ideas concerning the regional potential for enhancing workforce development. Ana Mejia Dietche deserves special mention for sharing her deep knowledge of the healthcare industry and for arranging access to members of the Health Industry Steering Committee.

At the Ray Marshall Center, Heath Prince, Associate Director, assisted with the benefit-cost estimates. Patrick Kelly and Matt Crelin of the National Center for Higher Education Management Systems (NCHEMS) in Boulder, Colorado assisted in tailoring the Return on Investment (ROI) model for the Austin region. Susie Riley provided her usual expert assistance with editing and formatting this report.

Any remaining errors of omission or commission are the responsibility of the authors.

## EXECUTIVE SUMMARY

Recent US Census data indicates that more than 200,000 Austin-area residents over the age of 25 have attended college but not completed a degree or certificate. At the same time, job growth in the Austin area is generally out-pacing employment projections and attracting in-migrants to Austin, who offer significant competition for local residents. The Workforce Potential Project of the Austin Area Research Organization (AARO) aims to significantly increase the share of local residents age 25 years and older with a postsecondary associate's degree and/or credentials to enable them to obtain jobs paying \$18 per hour or more, a wage equivalent to providing economic self-sufficiency for a mother with two children in the Austin area. AARO contracted with the Ray Marshall Center to research the Central Texas regional labor market in order to identify occupations in growth sectors that pay well while requiring less education than a baccalaureate degree, probe preparedness and credentialing capacity, and investigate employer perspectives regarding growth and opportunity in these occupations.

Emerging evidence on workforce development strongly suggests that a demand-side strategy of targeting jobs and employers in a handful of industry sectors or clusters, rather than more traditional, less targeted job development, is likely to be more productive in raising incomes, meeting employer needs, and promoting economic growth. The Workforce Potential Project appears to be at the forefront of developing such a demand-side strategy.

From an analysis of labor market information, the Ray Marshall Center identified 17 occupations across four clusters (health and life sciences, information technology, trades, and administrative and related occupations) that meet AARO's criteria and offer promise for implementation of the Workforce Potential Project. The 17 occupations initially targeted are neither a comprehensive nor a complete list of Austin jobs that meet the Project's criteria. Indeed, during the project, members of AARO's Social Equity Committee, Capital IDEA staff, labor market analysts, employers, and staff at both the Capital Area and the Rural Capital Workforce Investment Boards, among others, recommended additional occupations for consideration. (A list of these additional occupations suggested can be found in the appendix.)

## KEY FINDINGS

1. Unfilled jobs are available in Austin that pay \$18 per hour or more and require less than a bachelor's degree.
2. With a few exceptions, employers and educators in interviews verified the information we compiled regarding wages, numbers employed, and future demand in the targeted occupations. The number of projected annual openings through 2018 in these initial 17 occupations totaled 2,720.<sup>1</sup> This is a minimum number since economic growth in the Austin area has been stronger than projected by U.S. Bureau of Labor Statistics (BLS).
3. Austin Community College (ACC) offers training and education in all of these occupations except respiratory therapists, electricians, and plumbers and pipefitters. Training for electricians and plumbers and pipefitters is available in Austin from apprenticeship programs, which have expanded recently in these trades. Training and continuing education for respiratory therapists are offered at Temple College.
4. Differences between preferred and actual levels of education on the job may indicate that employers cannot find applicants with the education they desire or alternatively may reflect that newly hired job applicants are held to higher standards than incumbent workers in terms of education and training levels. In tight labor markets, employers may compromise their preferred educational requirements in order to fill shortages. In addition, employers in certain fields (e.g., accounting technicians, executive assistants) may substitute years of relevant experience for educational requirements.
5. Obtaining an associate's degree alone is often not sufficient to gain employment at an hourly wage of \$18 or more. Work experience, in addition to academic preparation and credentials, is commonly required to secure employment. Many employers simply will not consider applicants who lack a year or more of related work experience. Further, in some fields, specialty certifications beyond the associate degree are required. For example, sonographers need licenses and specialty certification in whatever area they want to work, such as echocardiography, vascular technology, or

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<sup>1</sup> Data from the U.S. Bureau of Labor Statistics (BLS) indicates 2,720 job openings in the Austin area in these 17 occupations.



neurosonology. Finally, institutional factors or peculiarities of hiring processes can impede or complicate access to employment (e.g., reliance on contract workers or staffing agencies).

6. Employability skills and basic academic skills are foundational. Basic skills are needed to succeed in college courses. Employability skills, such as good work habits and attitudes and the ability to work well with co-workers and customers, are essential to securing nearly any area job.
7. Intermediary services are needed to improve communication and collaboration between industry and ACC. Staff of Capital IDEA have served in this role, which is a key ingredient to their organization's success. The Health Industry Steering Committee, sponsored by the Capital Area Workforce Solutions, offers a forum for health care employers to coordinate their efforts and work more effectively with educators. Chambers of commerce could play an important function to facilitate connections between ACC and employers by including selected ACC representatives in the Chamber's industry sector meetings focused on discussion of workforce needs; but recent meetings have not included ACC.
8. Everyone interviewed at ACC and in the employer community who had come into contact with Capital IDEA expressed positive opinions about the organization's activities to increase earnings and career prospects for low-income individuals through education and skills training. The Ray Marshall Center's analysis of Capital IDEA's impacts and return on investment (King, Smith and Schroeder, 2012) as well as recent studies by the Aspen Institute Workforce Strategies Initiative (Helmer and Blair 2010) strongly support this view.
9. In addition to obtaining and maintaining accurate information on the industry/occupational demand side of the market, WPP will need better information on the supply side—the more than 200,000 Austin-area residents over the age of 25 who have attended college but have not completed a degree or certificate—and their characteristics. Detailed information on subgroups can lead to tailored approaches to effective recruitment and training.
10. Subgroups that offer potential for success are incumbent workers pursuing career advances with their employers participation; selected former Capital IDEA participants who left the program for financial or family reasons, and

are ready to complete their degree or training; former military personnel seeking new careers; students who dropped out near completion of their degrees or certificates, and older returning students who enroll at ACC in academic programs serving demand occupations.

11. In addition to ongoing work and family commitments of postsecondary students, challenges persist along the educational path regarding course availability and scheduling, timely satisfaction of prerequisites, and developmental education. Expanded enrollments and course offerings are constrained by the ability to hire qualified instructors, computer lab space, and the availability of clinical placement openings and internship opportunities.
12. Success of the Workforce Potential Project will require a renewed community commitment by educators, employers, and taxpayers to recover the underdeveloped human capital of area residents.
13. Roles for the business community might include direct support for education and supportive services, as well as a pledge to consider qualified graduates of the local employment and training system, including community college graduates, on a priority basis for employment interviews.
14. Comparisons of estimated economic returns and costs indicate that implementing the Workforce Potential Project will result in substantially increased personal incomes and tax revenues, and will lead to reduced spending on corrections, welfare and Medicaid. If the Project increases the number of associates degrees, credentials and certificates by 30,000 more than currently projected by 2025, the region would experience an additional \$432 million in after-tax personal incomes, as well as an accompanying increase of around \$45 million in state and local tax revenues and savings from reduced welfare, corrections and Medicaid costs by that year. Moreover, the resulting revenues and savings generated would exceed the added public costs of education and training by almost \$122 million by 2025.

## INTRODUCTION

Austin Area Research Organization's Workforce Potential Project seeks to recover and upgrade under-utilized human capital in the Central Texas area to enhance socio-economic equity and spur regional economic growth and expansion. The goal is to promote the education, skill levels, and livelihood prospects of residents 25 years of age and older who have had some postsecondary education to qualify them for employment in demand occupations and growth industry sectors. The project also intends to expand the pool of qualified applicants for Austin-area employers. The Ray Marshall Center has been tasked to identify high-demand jobs that provide a self-sufficiency income (a wage of \$18 per hour or more) that can be obtained with sub-baccalaureate education, most requiring at least an associate degree or credential/certificate, that can be obtained at a local education and training center, especially the Austin Community College. Researchers scanned and analyzed the most reliable labor market databases for projected job openings in promising industries and occupations that meet the targeted sustainable income standard. Applying a series of filters to multiple labor market tools, Ray Marshall Center researchers identified four categories with promising occupations:

- Health and Life Sciences
- Information Technology
- Trades
- Administrative and Related

Within these clusters, researchers targeted 17 occupations for further research, as displayed in Table 1.

**Table 1. Targeted Occupational Clusters with Specific Occupations**

HEALTH AND LIFE SCIENCES	INFORMATION TECHNOLOGY	TRADES	ADMINISTRATIVE & RELATED
Registered Nurses	Computer Support Specialists & Security Specialists	Automotive Mechanics and Technicians	Bookkeeping, Accounting and Auditing Clerks
Licensed Vocational Nurses	Computer Systems Analysts	Electrical Power-line Installers & Repairers	Executive Secretaries & Administrative Assistants
Diagnostic Medical Sonographers/Ultra-Sound Technicians/Cardiology Sonographers		Electricians	
Medical and Clinical Lab Technicians		HVAC Mechanics and Installers	
Radiologic Technologists/Technicians		Plumbers & Pipefitters	
Respiratory Therapists			
Surgical Technologists			

Researchers examined the selected occupations more closely by conducting a series of interviews with employers and educators to validate the occupational prospects in terms of projected growth, wages, education/provider capacity, and labor hiring practices, including hiring norms, as well as requirements of employers in the occupational clusters. Additionally, researchers probed emerging and “below-the-radar” job prospects with human resource professionals and labor market analysts knowledgeable of the local labor market. This report presents the results of these efforts.

## **ORGANIZATION OF THE REPORT**

The report begins with a brief overview of the Workforce Potential Project (WPP), summarizing research results from earlier phases of research by the Ray Marshall Center and the AARO Social Equity Committee. Then, the report presents specific findings on each of the clusters and occupations studied, gleaned from data analysis and interviews conducted with Austin-area employers and educators. Following the presentation of specific information regarding individual occupations and clusters is a summary of the general findings across all the occupations, along with a discussion of challenges and opportunities facing the project. Next, the report provides modeled estimates of the economic impact of the Workforce Potential Project.

The report concludes with ideas and recommendations for moving forward with the Workforce Potential Project. It focuses especially on suggested roles for employers and their associations in implementing the WPP. The recommendations draw on past successes in Austin, such as in nursing.

## OVERVIEW OF THE STUDY

### PROJECT PURPOSE AND SCOPE

The goal of the Workforce Potential Project (WPP) of the Austin Area Research Organization (AARO) is to equip area residents age 25 years and older with an associate's degree and/or credentials so that they can benefit from and contribute to the sustenance and growth of the regional economy. The initial target group for this initiative are individuals who already have had some postsecondary education but did not obtain a degree or certificate. The positive benefits of credentials on employment and earnings are well established, as is the benefit of postsecondary advancement (Carnevale et al., 2012; Prince and Jenkins , 2012). Effective strategies for attaining this goal clearly require work on both the supply and the demand sides of the labor market. The emerging evidence strongly suggests that a demand-side strategy of targeting jobs and employers in a handful of industry sectors or clusters rather than more traditional, less targeted job development will be more effective.

In a post-recessionary yet dynamic labor market like the Austin area, determining which sectors to target requires more than just collecting current and trend employment and wage data. Relying solely on projections based on trend data of the past few years is likely to give an incomplete picture. To address this potential information gap, AARO joined with the Ray Marshall Center to prepare a traditional quantitative labor market analysis supplemented by qualitative insights gained from interviews with employers in the candidate sectors, education and training providers, and labor market analysts. The interviews sought to validate the findings from labor market data and to obtain an understanding of employer requirements and how the labor market operates in the targeted occupations.

### RESEARCH TASKS AND TIMELINES

Based on discussions with AARO board members and staff, the Ray Marshall Center conducted this research in three phases, as follows:

#### ***Phase One: Planning & Labor Market Data Analysis***

- With AARO leadership and staff, developed criteria for choosing target industry sectors
- Collected labor market data (from the Texas Workforce Commission, the Bureau of Labor Statistics, and other sources) for the Central Texas region and

conducted an in-depth analysis identifying candidate industry sectors and occupational clusters for targeting

- Identified leading employers and knowledgeable informants within the candidate sectors/clusters, as well as their counterparts within the education and training provider community
- Prepared initial labor market data analysis results and lists of employer and provider informants for interviews

### ***Phase Two: Employer and Provider Interviews***

- Conducted interviews with key education and training providers (principally Austin Community College with supporting conversations with staff of Workforce Solutions in the Capital Area and Rural Capital Area) to validate and/or modify the findings of the data analysis and to identify potential service gaps
- Conducted interviews with employers and analysts within the candidate clusters to validate and/or modify the findings of the data analysis
- Prepared a memo summarizing findings and insights from employer and provider interviews

### ***Phase Three: Synthesis and Recommendations***

- Synthesized the results of the quantitative labor market data analysis and insights gleaned from employer and provider interviews
- Analyzed target industry sectors/clusters, associated career pathways, earnings trajectories, and employment processes and requirements based on the synthesis of quantitative and qualitative analyses
- Prepared a range of return-on-investment (ROI) estimates that may result from increasing degree/credential attainment in the recommended sectors
- Prepared this final report addressing labor market findings, training capacity, opportunities and challenges, and recommendations for attaining the desired ends of the WPP

Details of the Phase One labor market analysis are contained in the Appendix. The findings and results from Phase Two and Three are contained in this report.

## LABOR MARKET ANALYSIS

### Selection Criteria

Table 2 provides an overview of the criteria for industry sector selection.

**Table 2. Criteria for Choosing Targeted Occupational Clusters in Austin**

OCCUPATIONAL CLUSTERS CONSIDERED FOR TARGETING	INFO TECH	HEALTH & LIFE SCIENCES	ADMINISTRATIVE & RELATED	TRADES
<b>First Level Criteria - Labor Market Suitability</b>				
Strong Employment Demand: Employers are hiring and have ongoing projected openings	●	●	●	●
Experiencing Key Occupational Shortages: Demand figures show shortages; significant numbers of job are involved	●	●	●	●
Appropriate for Targeting for Anticipated Clientele by Workforce System: There are multiple entry points for 2-year vocational through 4-year college degrees for skilled, trained workers along with established career paths	●	●	●	●
Good Earnings, Benefits, and Opportunities for Advancement: Positions pay at least minimum standards for self sufficiency, and provide opportunities for advancement and/or stability	●	●	◐	◐
<b>Second Level Criteria - Potential for Industry Engagement</b>				
Industry Cluster Group in Existence: Industry representatives from this sector have an association or organization with interest and activities so that initial outreach and analysis can be conducted through existing channels	●	●	○	◐
Recognized Need by Industry Sector Representatives: Employers in the sector acknowledge shortages in critical skills occupations, although they may not be aware of the scope of the problem cluster-wide	●	●	◐	◐
Willing to Contribute to Solutions: Some employers in the sector are willing to participate in the project from the beginning, to share information for analysis, and to help to define and contribute to development of solutions	●	●	◐	◐
Best prospects for this project	✓	✓	✓	✓

\*Key: ● Strongly meets criteria ◐ Partially meets criteria ○ Does not meet criteria ✓ Recommended cluster

A key criterion for choosing among potential occupations is the concept of economic self-sufficiency aligned with opportunities for advancement and/or employment stability. How much income does a single parent with two children need to be self-sufficient in the Austin area? According to the Center for Public Policy Priorities' (CPPP) family budget calculator, to be self-sufficient in Austin, a family of three needs an annual income of \$44,124.<sup>2</sup> This is the equivalent of an hourly wage of \$22, or a monthly income of \$3,677. (To put this into perspective, this income level is 257% of the federal poverty standard for a single-parent family with two children, currently at \$17,170.) If the employer provides health insurance, the self-sufficiency income decreases to \$35,611 (or an hourly wage of \$18). If the family chooses not to purchase health insurance, the income is \$37,257 with an hourly wage of \$19. Thus, we focus on occupations that pay an hourly wage in the range of \$18-\$22 or more. Nevertheless, to achieve the scale envisioned by WPP, we also considered occupations offering opportunity to attain that wage target with experience and skills growth within a reasonable time period. Occupations with greater promise for stable employment and self-sufficiency wages should be acknowledged.

## **LIMITATIONS OF THE STUDY**

We have not fully addressed the roles of proprietary schools or training providers beyond ACC; nor has the research fully explored the potential for online learning. Advisory committee members of workforce education programs at ACC comprised a large share of the employer interviews. While this group was knowledgeable about Austin Community College, it was also possibly biased in favor of the college. The small sample of interviews conducted with non-randomly selected individuals was not designed to produce statistically significant results. The list of occupations studied is neither complete nor comprehensive. Several occupations were identified during the course of the research that do not appear on the initial screened list, yet merit further investigation as viable career options.

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<sup>2</sup> [http://www.cppp.org/fbe/estimator\\_step1.php](http://www.cppp.org/fbe/estimator_step1.php)



## FINDINGS BY INDUSTRY SECTOR OR CLUSTER AND OCCUPATION

### HEALTH AND LIFE SCIENCES

Several important changes are currently underway in the health care labor market, which will affect career prospects in healthcare and life sciences in the Austin area.

The national Institute of Medicine (IOM), the health arm of the National Academy of Sciences, has promulgated new standards for acute care facilities regarding the use of nurses with bachelor's degrees in science (BSNs).<sup>3</sup> This has increased competition between experienced RN/BSN and recent graduates holding associate-level degrees (ADNs). Local hospitals have responded by encouraging and supporting incumbent ADN employees to obtain a bachelor's degree.

The Patient Protection and Affordable Care Act will increase the number of people with health insurance coverage and expand the demands on the health care system. At the same time, clinics, outpatient surgery centers, diagnostic centers, and other specialty centers have become a growing share of the health care industry and a major employment source for allied health occupations. These clinics and centers also tend to hire ADNs and licensed vocational nurses (LVNs). Significant job growth is likely to be found in this segment of the industry.

Establishment of a new medical school in Austin is anticipated to increase the number of individuals employed in healthcare and the life sciences across the occupational spectrum. By just how much, in which occupations, at what credentialing level, and over what time frame are yet to be determined.<sup>4</sup>

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**Targeted Occupation:** Registered Nurses (RN)

**Employment Demand:** Registered nurses are still in high demand, offering—by far—the largest number of projected annual job openings of any of the occupations studied.

**Occupational Supply:** Austin employers indicate that the skilled nursing shortages they faced just a few years ago have moderated. In addition to UT School of Nursing and ACC, new programs at Texas State University and Concordia College are producing RN graduates.

**Projected Average Annual Regional Job Openings:** 485

**Average 2010 Hourly Wage:** \$30.21

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<sup>3</sup> The Institute of Medicine recommended standards call for 80 percent BSN among all nurse staffing in acute care hospitals by 2020. Seton Hospitals is targeting 100 percent BSN staffing by 2017. St. David's healthcare network is committed to the IoM standard as well.

<sup>4</sup> TXP, Inc. has prepared some broad economic impact estimates (TXP, Inc., 2012).

**LMI Validation:** According to local industry and education representatives, the LMI data regarding wage levels and annual openings is on target.

**Qualifications Required:** A two-year or four-year degree in Registered Nursing plus passing the national NCLEX exam and licensure by the Texas Board of Nursing for employment.

**Provider Capacity:** ACC is the primary provider of Associate Degrees in Nursing (ADNs). Although the ACC School of Nursing has expanded its enrollment significantly in recent years, it has a lengthy waiting list. Course sequencing, competition for academic advancement, and access to clinical placements moderate advancement to graduation.

**Access:** Entry to employment is filtered by industry practices, notably the aforementioned commitment to BSN staffing in acute care facilities. Others include computerized key word screening of large pools of applicants resumes per opening, preference for experience, the tendency to hire from among those who had clinical placements with the hospital group, and the use of temporary employees. For example regarding the latter, Seton's facilities use an internal staffing procedure to hire per diem employees as temporary, part-time, or full time workers. This practice provides Seton with an opportunity to screen applicants prior to consideration for hiring. Working as a temporary can be a stepping-stone to regular employment with benefits as jobs become available.

**Potential for Industry Engagement:** Industry sector structure is well established for nursing occupations via the Health Industry Steering Committee (HISC), staffed by Workforce Solutions Industry and employer engagement benefit from a sector approach that integrates bilateral links with large firms and multilateral links across all firms to lever occupational prospects that serve the industry. Temporary agencies and staffing agencies should be represented.

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**Targeted Occupation:** Licensed Vocational Nurse or Licensed Practical Nurse (LVN)

**Employment Demand:** Although prospects for employment in hospitals and other acute care facilities have dimmed, demand for LVNs is strong in long-term care, rehabilitation, and skilled nursing facilities; in clinics; and specialized treatment establishments, such as dialysis facilities, endoscopy centers, and physician practices.

**Occupational Supply:** As with RNs, Austin employers indicate that the licensed vocational nursing shortages they faced just a few years ago have moderated. Industry and provider spokespersons indicated that both RN and LVN graduates of ACC's program tend to seek local employment. Lower proportions of nursing graduates from four-year colleges choose to work in Central Texas. Future observations and analysis will reveal the balance between supply and emerging LVN opportunities, given the labor market transition currently underway.

**Projected Average Annual Regional Job Openings:** 210

**Average 2010 Regional Hourly Wage:** \$20.84

**LMI Validation:** According to local industry and education sources, the LMI data regarding wage levels and annual openings is about right. Spokespersons did express some concern

that wage growth for LVNs may not accelerate as quickly as in the past or in comparison with wage growth for BSNs.

**Qualifications Required:** Two-year degree in licensed practical nursing plus passing the national NCLEX-PN exam and licensure by the Texas Board of Nursing.

**Provider Capacity:** ACC offers a two-year degree in Licensed Vocational Nursing (LVN). The key constraint that limits enrollment is availability of clinical placements. For example, St. David's Healthcare – once a key placement site – no longer provides clinicals for LVN students since LVNs are being phased-out of hospitals. Competition for clinical placements in general has increased with the expansion of regional nursing school capacity.

**Access:** Future job placements should target the emerging market for LVNs outside of acute care facilities.

**Potential for Industry Engagement:** Industry sector structure is well established for licensed vocational nursing occupations via the Health Industry Steering Council. The extent to which the emerging employment prospects for LVNs outside of acute care are incorporated within the HISC is currently in development. Industry and employer engagement benefits from a sector approach that integrates bilateral links with large firms and multilateral links across all firms to lever occupational prospects that serve the industry. Temporary agencies and staffing agencies should be represented.

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**Targeted Occupation:** Diagnostic Medical Sonographers

**Employment Demand:** The various specializations of diagnostic medical sonographers are expected to retain consistent growth in occupational demand, though relatively small in terms of total openings.

**Occupational Supply:** Local graduates compete with experienced in-migrants to Central Texas for sonographer positions.

**Projected Average Annual Regional Job Openings:** 5

**Average 2010 Regional Hourly Wage:** \$29.80

**LMI Validation:** According to local industry sources, projected annual openings are undercounted, especially in the Rural Capital Area, where annual openings are projected by the BLS at zero, despite rapid growth of health care facilities in Williamson County, as well as the proliferation of specialty clinics.

**Qualifications Required:** An associate degree in sonography along with the appropriate specialty certifications is required.

**Provider Capacity:** ACC offers a two-year degree in Sonography. The key constraint that limits enrollment is availability of clinical placements (See box on following page).

**Access:** Sonographer is an occupation for which possessing an associate degree alone is insufficient to enter employment. Specialty certifications are required to work in the various specialty areas of the profession. Preparing for and obtaining the appropriate certifications is often a very expensive proposition, which can be a barrier to access for low-income individuals aspiring to become sonographers.

**Potential for Industry Engagement:** HISC is currently positioning to strengthen relations and more closely monitor the labor market in the Allied Health occupations, including sonographers.

### CLINICAL PLACEMENTS IN HEALTHCARE

The shortage of suitable clinical placements is the strongest restriction on expanding nursing and allied health programs. While nursing challenges have been well recognized, disciplines in allied health fields face slightly different challenges. Sonographers, for example, are usually placed in smaller settings where the presence of a required clinical supervisor paid by the host clinic diverts that person from productive tasks while mentoring and guiding the student. Unit costs per provided services go up, while the employed technologist is mentoring the students. The business model of the many small clinical sites that provide sonography does not conform well to the requirements of academic accreditation. Larger hospitals may defer from providing clinical opportunities to students who are likely to work elsewhere in the emergent array of specialty clinics.

In general, there are three clinical models in health and life sciences, each of which has time and cost parameters that vary by the nature of the clinical setting. Preparation of health care professionals is the most expensive type of program that ACC offers, involving both costly equipment and labor-intensive education.

- 1. Direct Model.** The direct model is most common model for providing clinical experience. It is used in nursing. Under this model, a faculty member remains on-site continuously with groups of students in the clinical rotation.
- 2. Instructor/Clinical Mentor Model.** This model divides the supervisory function between the instructor and the on-site clinical mentor. It is appropriate for radiology and other services that are conducted in a medium to large clinic or department. The clinical mentor oversees 2 or 3 students and is supported by the instructor who is on-site for 2-3 hours per day.
- 3. Preceptor Model.** This model is usually used in a small clinical setting and is appropriate for programs such as Occupational Therapy Assistant, which involve one-on-one services. The on-site clinical mentor has primary supervisory responsibility; the faculty member is on-site with the single student only on an intermittent basis.

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**Targeted Occupation:** Radiologic Technologists and Technicians

**Employment Demand:** The various specializations of radiologic technologists are expected to retain consistent high growth in occupational demand, though relatively small in terms of total openings. Demand is anticipated to grow with the expansion of clinical sites and services, as well as upcoming retirements of semiconductor technicians who transferred into radiological technology with the decline of semiconductor manufacturing employment in the early 2000s. Overall occupational growth may exceed industry average growth rates.

**Occupational Supply:** Local graduates may compete with experienced in-migrants to Central Texas for radiologic technologist positions. Overall supply must steadily increase to be commensurate with demand.

**Projected Average Annual Regional Job Openings:** 35

**Average 2010 Hourly Wage:** \$25.46

**LMI Validation:** According to local industry sources, the LMI data regarding wage levels and annual openings is about right—except again in the Rural Capital Area, where average annual openings are projected to be only five technologists, despite growth potential.

**Qualifications Required:** An Associates Degree is required to work in this occupation.

**Provider Capacity:** ACC offers a two-year degree in radiology.

**Access:** The basic starting job in the Austin area is radiologic technologist. Radiological technicians are not employed in Austin-area hospitals. Technicians are very limited in their practice by terms of their license. Further, being a technician is not a step on the ladder to technologists; a technician must start over from the beginning in an education program to become a technologist. Radiologic technologists specialize in x-ray, computed tomography (CT), and magnetic resonance imaging (MRI) equipment. They may be called CT technicians or MRI technicians, depending on the equipment they work with. Radiologic technologists may also specialize in mammography.

**Potential for Industry Engagement:** HISC is currently positioning to strengthen relations and attention devoted to the Allied Health occupations, including radiologic technologists.

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**Targeted Occupation:** Cardiovascular Technologists and Technicians

**Employment Demand:** Demand is anticipated to grow with the population expansion.

**Occupational Supply:** Overall supply is growing slowly.

**Projected Average Annual Regional Job Openings:** 5

**Average 2010 Hourly Wage:** \$27.39

**LMI Validation:** According to local industry sources, the LMI data regarding annual openings is undercounted, especially in the Rural Capital Area, where average annual openings are projected to be zero technologists, despite projected growth of medical facilities in Williamson County.

**Qualifications Required:** An Associates Degree in radiology with appropriate certifications are required to work in this occupation.

**Provider Capacity:** ACC offers a two-semester advanced technical certificate program in cardiovascular-interventional technology. Admission is restricted to applicants already certified by American Registry of Radiologic Technologist and enrollment is quite limited. Completion of the prescribed curriculum helps prepare the student for the Cardiac-Interventional (CI) Radiography Certification Examination administered by the American Registry of Radiologic Technologists.

**Access:** Cardiovascular-Intervention Technology is a specialization area in radiology focused on performing diagnostic tests on pulmonary or cardiovascular systems. Gaining the appropriate certifications is required for access to this field.

**Potential for Industry Engagement:** HISC is currently positioning to strengthen relations and attention devoted to the Allied Health occupations, including cardiovascular technologists.

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**Targeted Occupation:** Surgical Technologists

**Employment Demand:** Surgical technologists are expected to retain consistent growth in occupational demand, though relatively small in terms of total openings. Surgical technologists are employed in hospitals, ambulatory surgery facilities, dental offices, and by surgeon practices directly. Surgical technology can offer individuals a good platform for exploring other careers in healthcare.

**Occupational Supply:** Local graduates compete with experienced in-migrants to Central Texas for surgical technologist positions. Overall supply is anticipated as commensurate with demand.

**Projected Average Annual Regional Job Openings:** 30

**Average 2010 Regional Hourly Wage:** \$20.03

**Labor Market Information (LMI) Validation:** Respondents indicated that the LMI data looks about right, except that the experienced wage level published by the BLS seems low for Austin.

**Qualifications Required:** Until relatively recently, surgical technologists were trained on the job. Currently, the hiring standard is a two-year associate's degree and certification through the National Board of Surgical Technology and Surgical Assisting.

Attractive candidates for employment as surgical technologists must have good work habits, be able to work in stressful environments, and be adept at getting along with fellow workers, including those with large egos commonly found in operating rooms.

**Provider Capacity:** ACC offers a two-year degree in Surgical Technology, and Virginia College offers a one-year certificate program. Both programs conduct clinical studies in facilities of the Seton Healthcare Family.

**Access:** A typical career path for a surgical technologist involves working in a hospital to gain work experience before moving to other medical facilities. Unlike the skills of a surgical

nurse, a surgical technologist has skills that are not very portable because much of their knowledge is firm specific, especially embedded in relationships and the procedures used in a particular facility. For example, after a surgical technologist becomes familiar with a particular surgical team and type of operation, she/he can anticipate what instruments the surgeon or nurse will need next.

**Potential for Industry Engagement:** HISC is currently positioning to strengthen relations in the Allied Health occupations, including surgical technologists.

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**Targeted Occupation:** Medical and Clinical Lab Technicians

**Employment Demand:** Medical and clinical lab technicians are expected to retain consistent growth in occupational demand. A variety of specialty functions (e.g., phlebotomist, histotechnician) fall within this employment group. Technologists do more advanced work.

**Occupational Supply:** Local graduates compete with experienced in-migrants to Central Texas and possibly technologists for entry-level positions, as technologists usually have at least a bachelor's degree. Overall supply might increase with demand.

**Projected Average Annual Regional Job Openings:** 40

**Average 2010 Hourly Wage:** \$17.23

**LMI Validation:** Published statistics on average hourly wages appear low; wages may be slightly higher in Austin. Projected employment growth appears to be a bit low, especially in view of the prospects for increasing medical research in the region.

**Qualifications Required:** Technicians need an associate's degree or a postsecondary certificate.

**Provider Capacity:** ACC offers training for medical and clinical lab technicians in a lab facility shared between the Medical Lab Technology Department and Biotechnology Department.

**Access:** Technicians generally work in healthcare facilities or laboratories often under the tutelage of technologists. Opportunities are concentrated in surgical/medical hospitals, diagnostic laboratories, and physician offices, followed by ambulatory care and outpatient care centers. Technicians must have good work habits and pay attention to repetitive details. Experience and associates degree support enhance opportunities for hiring.

**Potential for Industry Engagement:** HISC is currently positioning to focus increase attention to the Allied Health occupations, including medical and clinical lab technicians.

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**Targeted Occupation:** Respiratory Therapist

**Employment Demand:** Respiratory Therapists are expected to retain consistent growth in occupational demand, and jobs are reportedly growing faster than average industry rates.

**Occupational Supply:** Given the prospects for occupational growth, supply may prove challenging. Skilled, certified, and experienced in-migrants may fill the potential gap in Central Texas.

**Projected Average Annual Regional Job Openings:** 25

**Average 2010 Regional Hourly Wage:** \$25.37

**LMI Validation:** Growth in the middle-aged and elderly population will lead to greater demand for respiratory therapy services and treatments, mostly in hospitals and nursing homes, but also in home health care. As such, the number of openings projected may be a bit low for Central Texas.

**Qualifications Required:** Respiratory therapists need at least an associate's degree, although both associate's and bachelor's degrees are common requirements in practice. Employers prefer candidates with professional and interpersonal skills. The National Board for Respiratory Care (NBRC) —the main certifying body for respiratory therapists—offers two levels of certification: the Certified Respiratory Therapist (CRT) and the Registered Respiratory Therapist (RRT). To qualify for the exam, individuals must have earned an associate's degree from an accredited respiratory therapy program, or completed the equivalent coursework in a bachelor's degree program, and pass the assessment exam.

**Provider Capacity:** Due to the high expense of this program, the relatively small number of students anticipated to be served, and expected difficulties in arranging clinical studies, ACC does not yet have a program for training respiratory therapists. Other colleges and universities, vocational-technical institutes, and the Armed Forces offer training. Temple College in Temple, Texas, offers academic credentialing tied to internships with hospitals and clinics in Central Texas for aspirants to this field.

**Access:** Respiratory therapists with certification or a bachelor's degree will have the best job prospects. Experience and additional education are required for advanced certification.

**Potential for Industry Engagement:** HISC is currently positioning to focus greater attention on the Allied Health occupations, including respiratory therapists.



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## INFORMATION TECHNOLOGY

**Targeted Occupations:** Computer Support Specialists & Security Specialists; Computer Systems Analysts

**Employment Demand:** Demand in information technology is expanding, especially in Austin, with the arrival of new technology companies along with the expansion of existing technology firms within the area. Apple is expanding operations in Austin and has made commitments to hire local residents. Most Austin hires for Apple reportedly come from the local area. The company expects to build a new campus and hire 3,600 people over the next ten years or so, primarily working in customer support and technical support functions. Workers have room for advancement within IT companies that promote internally. The Dell Enterprise Support division offers promising entry prospects for certified specialists and reportedly is not as prone to layoffs as other departments.

**Occupational Supply:** Although the supply of applicants is expanding, several IT companies report difficulties in finding sufficient numbers of applicants with the qualifications they require.

**Average 2010 Regional Entry-level Hourly Wage:** \$23.46 - \$40.19

**Average Annual Job Openings:** 505

**LMI Validation:** Respondents indicate that BLS salary statistics are reasonably on target. Computer Systems Analysts may have higher educational requirements (at the baccalaureate level) than our data suggests. The actual number of current annual openings in IT is far higher than the BLS estimates.

**Qualifications Required:** Austin has an attractive labor pool because of the high educational standards of the postsecondary schools in the area. Large firms, such as Apple, prefer having “a diverse and unique employee base.” Degrees and credentials are not rigidly required and certificates or knowledge of specialized software programs may carry more weight for certain employers. An interest in technology, communication or customer service skills and a motivation to learn are keys to success. Employers noted that potential applicants or hires may have misconceptions about the educational requirements for working with a technology company.

**Provider Capacity:** ACC offers 17 degrees and certificates in Computer Studies and IT classes at ACC are generally not at capacity. There are two divisions within ACC’s Computer Studies department: computer science and computer information technology. ACC Computer Studies offers courses on several campuses. About half of those who take courses in Computer Science aim to transfer to a 4-year university for a bachelor’s degree. ACC may waive certain IT courses based on a student’s experience.

The ACC Computer Science department teaches languages such as Java, C++, as well as Lenox and UNIX, which are both in demand. Students need to have a good foundation in Microsoft Office, especially with spreadsheets and database operations. Few people use Excel or the ACCESS database software to their full potential.

ACC Computer Studies has about 800 students enrolled overall (cutting through the duplicated enrollments and the computer science students who plan to transfer to a 4-year college). ACC could expand to serve another 1,200 students, especially through greater use of online education.

Along with the Computer Studies Department, ACC resources training resources in information technology include Continuing Education and its High Tech Institute. The Computer Studies Department does not specifically aim to prepare students to pass exams for certifications, though individuals may be able to secure certifications on their own after taking courses. However, the ACC Continuing Education High Tech Institute directly prepares individuals to pass assessments for certifications. Formerly, several teachers in the Computer Science department taught in the High Tech Institute, but that is less true now because either they do not have the time or the inclination, as the pay of adjunct faculty at ACC has risen. In some of the ACC Security classes, they reserve a few slots for Continuing Education students, who take the courses on a non-credit basis. ACC Continuing Education also provides contract training to local business. Currently it is offering upgrade training at the worksite for incumbent technicians and engineers at Samsung. These mini-courses at Samsung feature lectures and short labs to provide related hands-on experience. ACC Continuing Education provides the equipment, supplies, and tools for each student on specially designed mobile carts.

ACC Computer Studies Department has recently begun conducting a Virtual Job Fair each fall and spring. The fall 2011 Job Fair attracted nearly 20 companies, a quarter of which returned in spring of 2012. Graduates from the previous year may post their résumés and, if they have the appropriate qualifications, an ACC coordinator can refer students to companies, providing them with a screened set of applicants. Partly as a result of the Virtual Job Fair, the ACC Computer Studies Department has placed several students at National Instruments, Dell and other major firms.

A higher proportion of students in networking and computer security complete their studies and obtain degrees than in other computer specialties, in part due to the fact that they are more often funded through WIA, or are participants in Capital IDEA, or both. Capital IDEA also pays for their students to prepare for and acquire A+ certification.

**Access:** Information technology positions offer a good salary in a growing sector. IT occupations can pay up to \$70 per hour. Hiring is competitive. Computerized key word searches are often used to screen résumés for the first round in the selection process. Customer service and “hands-on” experience are valued in positions with regular consumer contacts. Education, skills and experience are essential for small companies and start-ups without the time or capacity to train new employees. Larger firms often provide internal training and/or pay for selected training received externally. Employment (sometimes?) provided through staffing firms, and temporary hires frequently serve a trial period, prior to the offer of regular employment. Employers recommend that students intern, work in a co-op, or do a project while in school to gain practical experience, which can make them more attractive candidates in the job market.

Continuous learning is essential for career advancement in information technology, and some firms pay for further training or foster employee development opportunities. For example, Dell Enterprise Services prefers to have an employee begin with an entry-level position and move up the pipeline, rather than to hire externally for a mid-level position. A worker’s performance and record of certifications achieved determine his or her pay,

promotion, and work schedule. Dell also prods its employees to “stay current,” and provides funding for employees to enroll in selected education and training programs to acquire certifications.

**Potential for Industry Engagement:** Sector approaches in IT and IT-related industries have been active to various degrees for nearly two decades in Austin. The Austin Technology Council is currently the main vehicle for regional software companies. IT is characterized by the presence of several large firms and multiple small to medium firms across specialized areas of development, production, and customer services. Industry and employer engagement may benefit from a sector approach that integrates bilateral links with large firms and multilateral links across all firms to lever occupational prospects that serve the industry. Temporary agencies and staffing agencies should be represented.

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## **ADMINISTRATIVE AND RELATED OCCUPATIONS**

**Targeted Occupation:** Bookkeeping, Accounting, and Auditing Clerks

**Employment Demand:** Occupational demand is expected to remain steady for the foreseeable future, given the regional growth in business activity in the region.

**Occupational Supply:** Supply appears to be commensurate with demand. These occupations provide promising employment and earnings prospects for those with hands-on knowledge and experience. ACC provides the technical component within the instructional curriculum that offers QuickBooks, Microsoft Dynamics, and Peachtree software, as well as the Microsoft Office suite.

**Average 2010 Regional Hourly Wage:** \$17.76

**Average Annual Regional Job Openings:** 320

**LMI Validation:** BLS data on both wages and employment estimates are reasonably accurate for experienced staff. However the published entry-level wage of \$12.00 per hour is high for new employees without related work experience. Entry wages may be below the WPP targeted standard, but career advancement and wage growth potential appear relatively steady. Individuals with 3-5 years of experience can become self-employed bookkeepers and bill at a rate of \$60-\$75 per hour.

**Qualifications Required:** Essential requirements for employment entry include experience on the job, proficiency with accounting/bookkeeping software applications, and diligent attention to detail. Having skills, knowledge, and experience are more important than certification/degree for entry-level positions. But becoming a Certified Public Accountant (CPA) leads to greater opportunities and higher earnings.

**Provider Capacity:** ACC offers two associate of applied sciences degree programs (accounting specialist, accounting technician) and an accounting clerk certificate. The accounting technician AAS and the accounting clerk certificate are more “hands on” tracks that prepare students for entry-level positions in the field; the AAS does so for a wider array of diversified and complex tasks in accounting firms, government, and business than the

certificate, which is limited to minimum training for entry-level work. Those who acquire higher order skills and knowledge of accounting through the degree or through an advanced technical certificate may seek to test with the IRS as “enrolled agents,” who are authorized tax preparers.

The professional accountant advanced technical certificate program is designed to serve those who want to prepare for the CPA exam. Entering students must have a 4-year college degree. The certificate programs are exempt from Texas Success Initiative (TSI) mandatory academic assessment, which relegates many students into developmental education classes.

Students can also obtain a marketable skills award as accounting specialist, accounting technician, or professional accountant, each of which can be “stepped” towards the next credentialing plateau.

ACC’s accounting department enrolls over 1,000 students a year, of which about 400 are in the professional accountant certificate program. Students include public sector employees working in accounting departments, small business owners, students enrolled in other colleges and universities seeking additional hours or smaller classes, and career changers (particularly in recent years), as well as traditional community college students and recent high school graduates. Although coursework is aligned to facilitate ongoing academic achievement, many who do not complete are nonetheless gaining the skills and knowledge they need for career advancement in their current jobs, reflecting the observation that working knowledge and experience may outweigh certification and credentialing as keys to success. Expanded enrollments are possible because of its status as relatively inexpensive “instructor and chalk-based” teaching, supplemented by “hands-on” work in computer labs, which are typically shared with the computer studies department. Space constraints in ACC computer labs limits enrollment. Required internships are at times difficult to arrange, but ACC has adaptive strategies to find placements, including using non-profit organizations, family business placements, and internal job reassignments.

Achievement of the WPP-targeted wage levels depends on accumulating work experience gained at lower pay. Consensus is that 3-5 years of experience is needed to reach the \$18-\$22 per hour threshold. Experience gained through part-time employment while attending school is a recognized asset. Developing such opportunities at local firms, industry, public sector, and non-profits generally enhances job placement prospects and earnings outcomes.

**Access:** An associate degree in accounting, and/or core accounting principles with academic credit is a reasonable starting place for employment. Recent labor market conditions have increased competition for entry jobs between graduates of 4-year programs and those with lesser degrees or certificates.

A baccalaureate degree is not necessary, but it broadens opportunity prospects significantly. An individual may work as an accountant in a firm without a CPA title, but cannot have proprietary interest. The key certification valued in accounting is the Certified Public Accountant (CPA). A four-year degree with specific course requirements is required

to sit for the CPA exam; one year of work experience, plus passing the exam is required for licensing.

The private sector reportedly places less importance on educational achievement than the public sector. Public sector employers, such as Austin Energy, will substitute experience for education. Basic entry-level jobs may be diminishing due to the increasing complexity of IT/accounting interchange in larger businesses. Small businesses usually require the most versatility to conduct accounts payable, payroll, and accounts receivable. An accounting technician associate degree also prepares students for office manager positions in small companies. Large firms have specialized staff for each functional area. Mid-size firms commonly purchase payroll accounting services externally.

**Potential for Industry Engagement:** Accounting and bookkeeping services address functional needs of all size firms across all sectors of the economy, a condition reflected in the Advisory Panel at ACC. There is no well-defined industry group specifically focused on workforce development. There are several professional associations that serve to link job seekers to employment opportunities through networking.

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**Targeted Occupation:** Executive Secretaries and Executive Administrative Assistants

**Employment Demand:** These occupations provide promising employment, earnings and career prospects for those with experience, especially with public sector employers, such as The University of Texas. Growth of occupational demand is expected to continue for the foreseeable future.

**Occupational Supply:** Current skills and experience are determinants of supply for these occupations. Strong skills in Microsoft Office suite and other software applications are essential, as is knowledge of office procedures. Education and training can provide the former, but experience is the essential qualification for an executive opening.

**Average 2010 Regional Hourly Wage:** \$23.52

**Average Annual Regional Job Openings:** 435

**LMI Validation:** Published data are reasonable in terms of both wages and employment estimates for experienced staff hiring into these positions. However, an average entry-level wage of \$16.00 per hour is high without significant related work experience; \$10-\$15 per hour is more realistic for beginning administrative assistants. For the most part, pathway entry wages are below the target standard, but career advancement and wage growth potential exist with skills and the five years of experience necessary to attain executive or senior administrative assistant status.

**Qualifications Required:** Essential requirements for employment entry include experience on the job and proficiency with office procedures and software applications. Employers also value skills and aptitude, as well as a good work attitude, very highly. A bachelor's degree is often preferred, although there is a trend to substitute experience for degrees. Knowledge, skills, and experience are more important than certification/degree for entry-level positions; many tasks and functions can be learned on the job. Having an associate's degree in office administration, or a certificate in office administration for a specialty area

(office/administrative, legal, or medical), indicates technical capacity for employment. A baccalaureate broadens opportunity prospects.

**Provider Capacity:** ACC offers three associate of applied sciences (AAS) degrees in office administration (administrative, medical and legal) and six certificate programs that are “stair stepped” with the AAS curricula. Classes are offered in three modes: online, traditional, and flex (which blends the other two methods.) Using three instructional approaches has allowed the program to expand. In the spring of 2012, 69 students were enrolled in online classes, 153 in the traditional classes, and 283 used the flex approach. Each degree program requires 210 hours of internship or practicum, but work in the field satisfies this requirement. While placement in general office administration is easy, student demand for medical office administration courses has quadrupled in recent years and internships are much harder to come by. The medical office administration program contains a medical coding class offered by the School of Health and Life Sciences Department.

ACC’s Department of Office Administration has a diverse, but almost exclusively female student population that includes large numbers of minorities and single mothers. Several are receiving support from the federal Workforce Investment Act (WIA) or the Texas Department of Assistive and Rehabilitative Services (DARS). Graduates with facility in the Microsoft Office suite generally earn about \$12 per hour. The pathway to executive secretary or executive administrative assistant program requires an “achiever mentality” and strong communication skills, as well as technical proficiency. Most students are expected to have a job while finishing the degree.

Achieving the WPP wage target range of \$18-\$20 per hour depends on gaining experience at lower pay. Consensus among employers and educators is that several years’ experience and superior aptitude and attitude are needed to reach the \$18-\$22 threshold found in the executive position. Experience gained through part-time employment while attending school is a recognized asset. Computer lab access is essential to all degrees and certificates.

**Access:** Staffing agencies are commonly used to fill lower-level administrative jobs. This can present challenges to those individuals seeking regular employment with benefits as core staff in organizations. On the other hand, internal staffing agencies, such as found at The University of Texas, offer opportunities for progressive skills and knowledge development and on-the-job experiences to promote employability.

**Potential for Industry Engagement:** Administrative positions are found in all size firms across industry, in both the private and public sectors. Again, there is no well-defined sector group, and, as with accounting, professional associations serve as vehicles for employment networking.

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## TRADES

**Targeted Occupation:** Electricians

**Employment Demand:** Both residential and commercial markets are active and growing. Homes and businesses require more wiring than ever before, and electricians will be needed to install the necessary components. Longevity in the occupation and job tenure with a company are reportedly high. Public sector employment is also a viable option in the region.

**Occupational Supply:** Labor market segmentation and potential in-migration constrain supply estimates. Common knowledge accepts that skilled licensed individuals have little problem finding employment at sufficient wage levels.

**Average 2010 Regional Hourly Wage:** \$18.95

**Average Annual Regional Job Openings:** 165

**LMI Validation:** Wages and openings seem to align with industry perception. Electrician continues to be a lucrative career, with electricians employed by construction firms and other employers commonly earning between \$50,000 and \$70,000 annually, often with benefits.

**Qualifications Required:** Attitude and aptitude are important to employers. Licensing is required to work as an electrician and firms may provide the training and support for certification and licensing.

**Provider Capacity:** ACC does not currently offer programs for electricians. TSTC offers classroom instruction for electricians in Taylor and Hutto. Leander high school offers a program for electricians, one of only 14 high schools across Texas with such a program. Perhaps the best training is offered through apprenticeship, which offers an ideal combination of training on the job in paid employment and related classroom instruction. The National Electrical Contractors Association (NECA) and the International Brotherhood of Electrical Workers (IBEW) jointly offer a five-year program in the union sector. The Central Texas Independent Electrical Contractors (IEC) and the Associated Builders and Contractors (ABC) both administer electrical apprenticeships in the non-union sector. A proprietary school, Everest Institute, offers a program of 720 clock hours for electrical technicians that includes classroom training with “hands-on” labs. Tuition for this program is \$17,995. Applied knowledge and experiences are necessary to attain the level of journeyman or master electrician. Assessment, certification, licensure, and meeting continuing education requirements are important in this trade (Glover 2010)

**Access:** Certifications and licensure assure skills and knowledge for journeyman and master electricians. Entry level requires aptitude and capacity for learning and working. Hiring practices vary across a labor market characterized by very large and small firms organized as general or electrical contractors and subcontractors in commercial, industrial or residential construction, as well as by public and private enterprises with staff electricians. Self-employment as a proprietary business is common for those with mastery of the trade.

**Potential for Industry Engagement:** Construction and trades industry sector groups have been active in the past, in part generated by school-to-career activities promulgated early in the last decade. Residual interest can be reactivated to convene pertinent employers and providers. Large electrical contracting and other firms, as well as local labor organizations and the Building Trades Council, could significantly contribute to efforts.

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**Targeted Occupation:** Plumbers, Pipefitters, & Steamfitters

**Employment Demand:** Both residential and commercial labor markets are active and growing.

**Occupational Supply:** Labor market segmentation and potential in-migration constrain supply estimates. Common knowledge accepts that licensed individuals have no problem finding employment at sufficient wage levels.

**Prospects:** These occupations also offer consistently promising prospects. A skilled plumber can earn an annual salary between \$40,000 and \$70,000.

**Average 2010 Regional Hourly Wage:** \$19.83

**Average Annual Regional Job Openings:** 100

**LMI Validation:** Wages and openings seem to align with industry perception.

**Qualifications Required:** Attitude and aptitude are again important to employers. Licensing is required to work as plumber, and firms may provide the training and support for certification and licensing.

**Provider Capacity:** ACC does not currently offer programs in plumbing or pipefitting. The welding program at ACC, an important skill for plumbers and pipefitters, currently operates at near capacity. In welding, ACC instructors are qualified to conduct testing for various welding certifications. Apprenticeships provide classroom instruction with on-the-job training in plumbing and pipefitting. Certification and state licensing are required in this trade.

**Access:** Applied knowledge and experiences and licensing are necessary to attain the level of master plumber. Licensure assures that the worker possesses the required skills and knowledge.

**Potential for Industry Engagement:** Construction and trades industry sector groups have been active in the past, in part generated by school-to-career activities promulgated early in the last decade. Residual interest can be reactivated to convene pertinent employers and providers. Large contracting and other firms, as well as local labor organizations and the Building Trades Council could significantly contribute to efforts.

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**Targeted Occupation:** Automotive Service Technicians & Mechanics

**Employment Demand:** Automotive technicians will remain an essential area of employment opportunity. Technicians may work on an hourly or commission basis, either of which can be quite remunerative for a skilled technician.



**Occupational Supply:** Auto service technicians and mechanics have positive employment prospects.. Continuous advancements in automotive technology (fuel efficiencies, photovoltaic, etc.) may produce gaps between demand and occupational supply to the extent that these advances require constant upgrades in skills and knowledge.

**Average 2010 Regional Hourly Wage:** \$19.37

**Average Annual Regional Job Openings:** 120

**LMI Validation:** Respondents indicated that the wage data is about right, although there is a wide variation in what individual mechanics earn. Often, technicians are paid according to the number of “flagged hours” they work (flagged hours are the standard rates indicated in manufacturers’ manuals).

**Qualifications Required:** Automotive technicians need to be able to read data, write estimates, and use a computer. A good attitude is often as important as a credential or degree. What really matters is whether the technician can competently perform the work, regardless of his or her education and certificates.

The automobile technology field has the advantage of having a well-developed system of testing and certifications through the Automotive Service Excellence (ASE) program, and program accreditation through the National Automotive Technicians Education Foundation (NATEF), which is widely recognized and respected across the industry. One limitation is that the assessments used for certification are written tests and do not include performance components. The exams are computer-based tests administered by ACT, Inc.

**Provider Capacity:** The ACC automotive technology department is accredited by the National Automotive Technicians Education Foundation (NATEF), an affiliate of the National Institute for Automotive Service Excellence (ASE), which administers a system for certifying individuals. ACC is encouraging students to complete associate’s degrees rather than just taking a series of technical courses in automotive technology because the math in this field is becoming more demanding and the technology more complex. Starting this fall, ACC will be offering only a single level-2 certification and an associate’s degree. ACC’s automotive program is almost at capacity. ACC has internships arranged with new car dealerships and independent garages. Texas State Technical College (TSTC) in Waco also has a highly regarded automotive technician-training program. Austin-area proprietary schools were not positively noted by employers. Continuing and update training is available through manufacturers and auto parts dealers.

**Access:** New employees often have a probationary period for an employer to evaluate their skills. In large service and repair shops, technicians may have greater support for career progression. It is reportedly more important to have ASE certifications than an associate’s degree, but a degree and certification are certainly “door-openers” for inexperienced applicants. Technicians need current certification and recertification every four years. Individuals are more likely to acquire and maintain certifications when their employer pays for it.

**Potential for Industry Engagement:** Automobile industry employers, including larger new car dealers as well as small independent repair shops, have been active on the ACC

Automotive Industry Council. There is reasonable likelihood that their interest will continue.

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**Targeted Occupation:** Heating, A/C & Refrigeration Mechanics & Installers

**Employment Demand:** The climate in Central Texas promises steady demand for heating, ventilation, and air conditioning (HVAC) mechanics and installers, as does the local economy's significant food and beverage industry. Rising demand for trained technicians will continue to result in excellent employment opportunities.

**Occupational Supply:** Local employers face a shortage of skilled HVAC repairmen.

**Average 2010 Regional Hourly Wage:** \$18.90

**Average Annual Regional Job Openings:** 110

**LMI Validation:** The labor market data seem to align with industry perception. Entry wages for those with certificates or in formal apprenticeships are likely to be higher than those who are learning on the job.

**Qualifications Required:** Employers generally prefer applicants with postsecondary education or those who have completed a formal apprenticeship. Some knowledge of plumbing or electrical work and a basic understanding of electronics are helpful.

**Provider Capacity:** ACC offers an Associate Degree in Heating, Air Conditioning, and Refrigeration Technology, as well as a Certificate program. The Certificate program prepares individuals to enter the field with a minimum of formal training. The Certificate is "stair-stepped" with the Associate program, which is operating at near capacity.

**Access:** It is still possible for technicians to learn their trade on the job, although this is becoming much less common. Technicians who learn their skills on the job usually begin by assisting experienced technicians with basic tasks, such as insulating refrigerant lines, or cleaning or replacing filters, prior to moving on to more advanced tasks. Experience in related trades is helpful.

**Potential for Industry Engagement:** Construction and trades industry sector groups have been active in the past, and there is reasonable likelihood that participation can be re-activated and could include HVAC and related firms.

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**Targeted Occupation:** Electrical Power-Line Installers & Repairers

**Employment Demand:** Expanding services driven by population growth and settlement patterns, as well as aging-out and retirements, suggest that demand will be sustained.

**Occupational Supply:** The vigorous work requirements and physicality of lineman work—especially pole-climbing—constrains the supply of suitable applicants this occupation. ACC and other providers potentially can increase supply to meet current and emerging demand.

**Average 2010 Regional Hourly Wage:** \$21.12

**Average Annual Job Openings:** 30

**LMI Validation:** Employers agreed that the projected overall employment numbers are probably correct.

**Qualifications Required:** Linemen must have at least a high school diploma, a good driving record and a commercial driver's license, and be able to pass drug testing. Employers want to see someone interested in the construction trade, willing to work overtime, and committed to a vigorous work pace. An ability to work in the elements and to maintain safety compliance is essential.

Austin Energy has some high school graduates and military employees, but employees with technical degrees are being hired. Even with a technical degree, a newly hired employee must still go through Austin Energy's training. With a postsecondary credential, such as an associate's degree specializing in line work, employees are expected to progress faster through in-house training.

**Provider Capacity:** ACC developed a Utility Line worker Associate of Applied Science Degree to prepare linemen. ACC's installation program has yet to reach its potential in terms of numbers of graduates produced, reportedly because of the physical challenges of pole climbing. Vocational trade schools (such as the Northwest Linemen's College) offer an associate's degree in power-line work. Austin Energy operates its own in-house apprenticeship program using materials from Northwest Linemen's College. Austin Energy administers its training program in part because of the large group of retirees and aging field workers moving into administrative and supervisory positions.

**Access:** Power-line installation is a promising career for those with the aptitude for combining strenuous labor and technical skill. Necessary education and training can be acquired through multiple paths. Austin Energy is the largest employer of power-line workers in the region, employing about 200 workers between substations, line work, and transmission work, but regional electric co-ops, energy companies, and service contractors all offer good entry prospects. This is currently a male-dominated occupation, with men making up 100% of current linemen in Austin. The occupation provides ample opportunity for career stability and advancement. Opportunities that are less strenuous and age friendly, yet require the accumulated experience of lineman work include planning, inspecting, and supervising positions.

**Potential for Industry Engagement:** The Advisory Council of the Utility Line worker Program at ACC provides a promising basis for industry and employer engagement.

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## GENERALIZATIONS ACROSS ALL THE TARGETED OCCUPATIONS

Certain key findings generally hold true across targeted occupations, employer assessments and academic capacity:

- **Employers, educators, and analysts who were interviewed validated (with few exceptions) the LMI information regarding wages, numbers employed, and future demand in the targeted occupations.** The total number of projected annual openings in these initial occupations (through 2018) was nearly 3,000, which could be considered a minimum since economic growth in the Austin area has been stronger than that projected by BLS. Some of these openings may not have met the wage standard at entry, but offered opportunities to attain that level within a reasonable time at work and with experience.
- **ACC offers training and education in almost all of these targeted occupations.** For those not represented, ACC may be exploring the option, or other means of credentialing are available. (Some with low anticipated enrollment are too costly to pursue, such as respiratory therapy.)
- **The list of targeted occupations is neither comprehensive nor complete.** Several additional occupational opportunities exist, as suggested or identified by Social Equity Committee members, employers, educators, administrators at Capital IDEA, and other labor market analysts. Moreover, opportunities may exist for up-skilling current workers to meet occupational needs, and newly hired workers could backfill their jobs and begin climbing a career ladder.
- **Obtaining an associate's degree is often not sufficient to gain employment at \$18 per hour or more.** Work experience is almost always needed in addition to academic preparation and credentials, especially in the current labor market. Moreover, specialty certifications beyond the associate degree level are needed in some occupations (e.g., sonography) to qualify at today's standards. Some ACC workforce programs build certifications into their curriculum (e.g., welding).
- **Industry hiring practices and institutional factors can impede direct access to regular full-time employment.** Many firms, particularly in health care and IT, but also in public sector employment, including the City of Austin, as well as UT-Austin, may rely on contract workers, staffing agencies, or temporary employment as a trial period before offering regular employment.

- **Employability skills and basic skills are foundational.** The attitude and aptitude of individuals, particularly attention to detail and strong communication skills, are important characteristics for employers during the selection process.
- **Some constraints have greater impact on ACC students than other college students.** About three-quarters of ACC students work, usually resulting in longer completion times, particularly when mixing work and part time school. Moreover, some students who are working seek only a cluster of courses, some skills and knowledge, or a new language to support their current employment; these students are not necessarily interested in earning degrees or certifications.
- **There is considerable need for scholarship funding, which has been reduced at both the state and federal levels, childcare and other student supports.** The financial aid application process has also become much more cumbersome. ACC Workforce Programs currently have access to a Perkins grant that funds scholarships, mainly for healthcare, computer information technology, and the trades; a smaller amount goes to the business programs. ACC has only one child development center (located at the Eastview campus) which is used to train child development workers. Currently Workforce Solutions is the main source of funding for childcare assistance. Timely access to supportive services has been shown to aid retention.
- **Workforce intermediary services are needed to improve communication and collaboration between industry and ACC.** While employers, intermediaries, and advisory panels are active in relation to some departments and programs, there nevertheless exists a perceived gap between the community college and employers regarding future job opportunities. The various chambers of commerce, as well as AARO, and previously active industry associations can play an important role in facilitating connections between ACC and employers.
- **The Capital IDEA model is solid.** At almost every point in conversations with employers and educators, positive comments about Capital IDEA were expressed. Elements of this model should be considered for WPP.

## ESTIMATED ECONOMIC RETURNS OF WPP IMPLEMENTATION

Estimating the returns from implementing the Workforce Potential Project in Austin is reasonably straightforward in concept. When individuals earn the equivalent of a year or more of college credits and obtain a degree, credential or certificate, they reach a “tipping point” in their earnings that is associated with higher incomes and taxes paid at all levels, as well as reduced Medicaid, corrections and other costs to government (see Prince and Jenkins, 2005, and Smith and King, 2011). But estimating such returns in practice requires making a number of assumptions since we do not know the future with any certainty, either in terms of labor market developments or actual education and training outcomes. This discussion of the expected returns from increasing postsecondary credential attainment at the sub baccalaureate level uses a state model developed by the Center for Law and Social Policy (CLASP) in collaboration with the National Center for Higher Education Management Systems (NCHEMS), which has been adapted for use in the Central Texas region by NCHEMS and the Ray Marshall Center.<sup>5</sup>

We have estimated increased personal income and public revenues, including various federal, state and local taxes, as well as reduced welfare, Medicaid and corrections costs in the region from increasing the numbers of associate’s degree, certificate and credential holders *over and above* the limited growth that is already expected with current trends, i.e., 12,822 more bachelors degrees, 2,097 more associates degrees, and 1,438 more certificates. In preceding sections of the report, we have documented the numbers and types of jobs paying good wages and offering career advancement opportunities that are likely to be available to holders of such degrees and credentials in the region in the next several years. We have estimated the returns from implementing WPP from 2012-2025 under two scenarios: first, increasing the number of associate’s degree and credential holders by an additional 20,000 through 2025; and, second, increasing the number of degree and credential holders by 30,000 through 2025. The second scenario is a variation on WPP’s stated goal of increasing the share of sub baccalaureate degree and credential holders by 15% of 200,000 area residents who began some college by the year 2015, while the first scenario is presented as a less ambitious, less costly alternative. In part, our thinking about these scenarios is that the region’s postsecondary capacity for delivering

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<sup>5</sup> For more information about the CLASP/NCHEMS model, see the recent article by Matt Crellin, Patrick Kelly, and Heath Prince, “Increasing College Attainment in the United States: Variations in Returns to States and Their Residents,” *Change, The Magazine of Higher Learning*, July 2012; more details on the Texas estimates can be found on the following: [http://www.clasp.org/resources\\_and\\_publications/publication?id=1471&list=publications\\_states](http://www.clasp.org/resources_and_publications/publication?id=1471&list=publications_states). Heath Prince is now Associate Director at the Ray Marshall Center.

such large increases in 2-year degrees and credentials might be seriously strained by attempting to reach such ambitious goals in only three years. It is more realistic to strive to meet these goals by 2025.

It is important to note that under both scenarios, the added public cost of implementing the WPP initiative is likely to be modest since the strategy underlying WPP is to recruit former students who have already earned a number of credits towards their credential and to help them finish up their program of study. If the WPP Initiative expands to encompass service provision to large numbers of first-time students, costs would, of course, be greater.

Assuming that returns to the Central Texas region follow the same pattern as those for Texas as a whole, among other effects, the increased numbers of certificate, credential and associate's degree holders over the period 2012-2025 would likely result in increases in:<sup>6</sup>

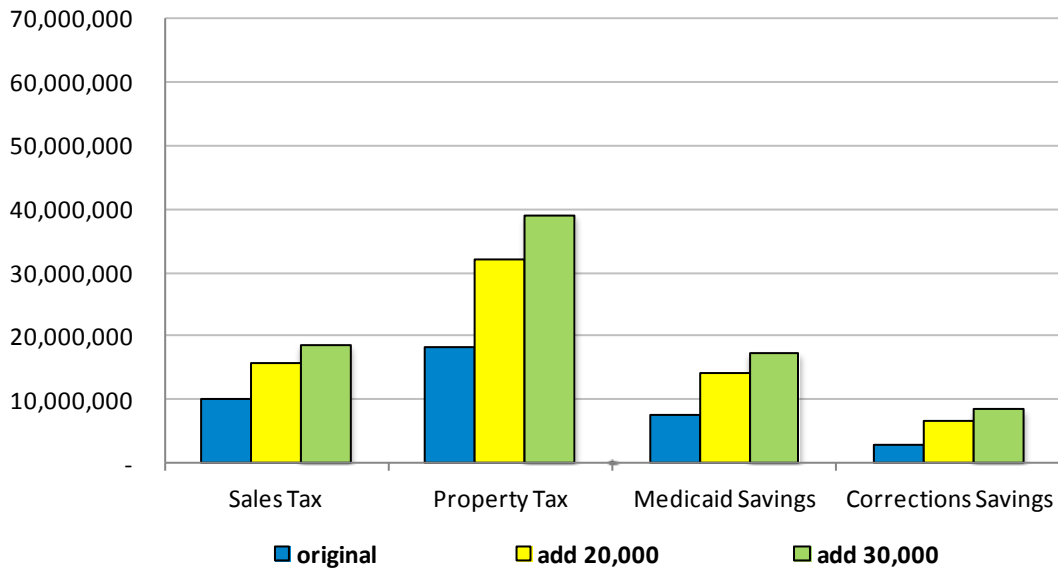
- Total personal income (after taxes) of \$289.7 million under the first scenario and \$431.9 million under the more ambitious scenario by 2025. These figures only include the direct effects of increased credentials on the individuals and families attaining them; they do *not* include indirect or multiplier effects in the community resulting from greater spending that these credential holders would make with their higher incomes. Standard economic models suggest that including such effects would at least *double* the effects on personal incomes in the region.<sup>7</sup>
- State and local revenues—including welfare, corrections and Medicaid savings, as well as greater sales and local property taxes—of \$29.9 million under the first scenario and some \$44.6 million under the more ambitious scenario by 2025 (see Figure 2). As with personal income, these are direct effects only; including indirect or multiplier effects would at least double these figures.

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<sup>6</sup> The increases by 20,000 and 30,000 in certificates and AA degrees awarded assume the same annual rate of increase and the same certificates/AA degrees ratio as projected in the "status quo" estimates. Estimates would vary depending on changes in the annual rate of increase in credentials awarded, the ratio of certificates to AA degrees awarded, or both.

<sup>7</sup> For example, see: Boardman, et al. (2011). Economic development and economic impact analyses (e.g., TXP, Inc. 2012) tend to include such indirect effects, while many benefit/cost analyses (e.g., King et al., 2008; Smith and King, 2011) tend to exclude them.

**Figure 1. Estimated Additional Tax Revenues and Cost Savings Associated with Increasing Associates Degree, Certificate and Credential Holders by 20,000 and 30,000, 2012-2025**

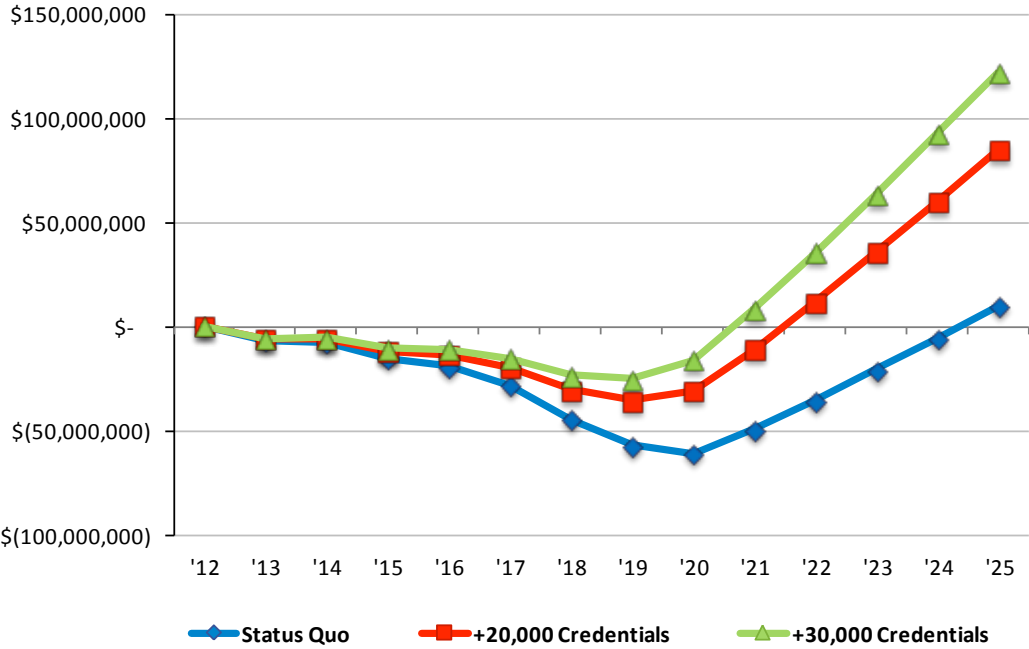


Source: Economic model developed by the National Center for Higher Education Management Systems and the Center for Law and Social Policy, adapted for use by NCHEMS and the Ray Marshall Center.

The marginal public costs of these additional degrees or credentials annually would be more than offset by the total federal, state and local returns expected under both scenarios (Figure 2), even without including indirect or multiplier effects in the estimated returns. Under the 20,000-credential scenario, additional revenues would exceed the additional public costs by \$85 million by 2025, while under the second 30,000-credential scenario, the additional revenues generated would exceed the costs by over \$122 million by 2025.



**Figure 2. Estimated Net State Costs and Federal, State and Local Revenues Associated with Increasing Associates Degree, Certificate and Credential Holders by 20,000 and 30,000, 2012-2025**



Source: Economic model developed by the National Center for Higher Education Management Systems and the Center for Law and Social Policy, adapted for use by NCHEMS and the Ray Marshall Center.

## **ADVANCING THE WPP AGENDA**

### **CONSTRAINTS AND OPPORTUNITIES**

There are constraints as well as opportunities for advancing the WPP agenda. Some of these reside in the educational domain, others within the employer community, and some cross both groups. This section provides insights regarding the challenges and opportunities from the perspectives of the community college and area employers.

The primary focus of this research has been the ACC system as the largest and most responsive provider of workforce education, spanning multiple departments with a deep commitment to traditional values of access, opportunity, and quality services. Proprietary schools have not yet been investigated, but nonetheless remain a viable alternative for career preparation in some occupations, albeit often at a much greater cost. Nor have online or virtual education and training approaches and providers been fully probed in this study, but these, too, already play significant roles—for example, in providing academic upgrades for nurses from ADN or LVN to BSN—and will likely become more important, providing education and supplemental instruction for faster track, self-paced, and easy-access career preparation at the sub-baccalaureate level.

The employer community is heterogeneous, ranging from small proprietors businesses to large corporate employers across industry sectors, as well as public sector employment at the state, county, and city levels. Whereas some employers are represented in industry cluster groups, such as the Health Industry Steering Committee, which benefits from the participation of the major regional hospital systems, others are less organized as a sector group, particularly in industries characterized by multiple small-to-medium employers, such as automotive technologies and high-tech start-ups. Nevertheless, all can participate in and benefit from efforts to improve regional human capital in key occupational demand areas that enhance productivity, while contributing to socioeconomic equity in the greater Austin area.

### **AUSTIN COMMUNITY COLLEGE**

ACC has demonstrated willingness to support the needs of the business community and diverse resident population. Several areas of opportunity for continuing success include:

- ACC administrators and faculty are receptive and responsive to the aims of WPP;
- Active advisory panels for each ACC department are already composed of employers working with educators;
- Multiple ACC campuses and course offerings are located throughout the region;

- New workforce courses can be initiated in Continuing Education and migrated to regular academic/workforce development departments as student and employer demand solidifies; and
- Responsiveness to increasing capacity within current departments as enrollment grows is expected.

However, ACC is also subject to constraints in specific departments and programs, as noted in earlier sections of this report. For example, expanding nursing and allied health programs is challenged by:

- Shortages of qualified instructors, due in part to the fact that the private sector generally pays much better than ACC.
- Costly technology investments and upgrades. The cost per tuition hour to the student is set across all departments, yet the cost to ACC for providing health care education is considerably higher than tuition.
- Limitations on qualified clinical study opportunities. Competition for scarce slots has increased with the recent opening of nursing programs at Concordia and Texas State University, in addition to the growing clinical needs of UT-Austin. Clinical learning opportunities in allied health occupations are often constrained by the nature of the workplaces.

To introduce or expand programs in response to WPP objectives, ACC must consider:

- Enlarging and increasing its computer labs;
- Obtaining resources to hire new staff;
- Analyzing data to develop a better understanding of various subgroups who have attended ACC without completing or transferring to 4-year colleges;
- Collaborating to identify and recruit individuals in WPP target groups;
- Adapting to the challenges to serving a diverse population of older returning students;
- Implementing strategies to increase persistence, completion and graduation rates;

- Strengthening connections with employers regarding their occupational skills needs and projected job openings;
- Providing enhanced placement services in support of stronger employment and earnings outcomes;
- Establishing mechanisms to increase student supports, including grants and scholarships, supportive services, and academic counseling; and
- Increasing the intensity and effectiveness of developmental services.

## **EMPLOYERS AND BUSINESS COMMUNITY**

Employers and the business community must take the lead on the WPP. As WPP is nurtured by ACC, employers can reciprocate by facilitating access to employment experiences and jobs. In addition to promoting more clinical opportunities in the health care field, employers in support of the WPP can help provide part-time jobs, paid internships, co-op work-study opportunities, and apprenticeships, providing worksite learning relevant to career aspirations and employment success. By neglecting to become actively involved with training, employers are exacerbating unemployment and incurring the costs of more lengthy job vacancies (Capelli 2012). Employers can also work with ACC to better articulate their education, training, and skills needs, more directly share job postings, and commit to strong consideration for ACC-credentialed jobseekers. Many adjunct faculty members from industry already serve as informal resources for student job placements. Using the standing departmental and program advisory councils could systematically expand alerts to students regarding upcoming job opportunities. Additionally, employers might reinforce the role of the advisory panels as a mechanism to articulate workforce-training needs.

Workforce Solutions, a business-driven enterprise, also has an important role to play in advancing WPP. Not only does Workforce Solutions provide a wide array of labor exchange, job readiness/job search, and training opportunities, as well as business services, two of its One-Stop Career Centers are collocated on ACC campuses (Eastview and Highland Mall). ACC, Workforce Solutions, and the wider business community can align activities on behalf of the WPP, perhaps even developing a specialized placement initiative for ACC students.

Other possible contributions to WPP from the business community may include:

- Innovative and supplemental resource packages to support programs and students, including grants and scholarships, as well as ad hoc support for retention and advancement, which may include supportive services, academic counseling, and to the extent necessary, developmental education services (Helmcamp, 2011);
- Support for upward mobility within firms through skills enhancement to increase productivity of current workers, creating replacement openings for new entrants;
- Work-, family-, and school-friendly policies to assist those trying to enhance their employment prospects within companies; and
- Promote wider political support for the WPP and ACC.

## **A MODEL FOR SUCCESS: PROVIDERS AND THE EMPLOYERS WORKING TOGETHER IN HEALTH CARE**

The integrated community response to regional shortages in health care occupations is an excellent example of a successful collaboration between industry and educational institutions working together to meet employer needs, while providing promising career and income opportunities for area residents. Several factors have contributed to this effort, including:

1. **The Health Industry Steering Committee (HISC)** -- The healthcare industry in the Austin area has benefited from having an industry-wide platform for communication, planning and organizing activities, and for resolving workforce problems and issues among industry partners. The HISC was established in 1994 and is currently staffed by the Capital Area Workforce Solutions. For most of its history, HISC focused primary attention on increasing the numbers of nurses in training, and on recruiting nurses to fill shortages. The HISC, in collaboration with the federally funded Texas Area Health Education Center—Capital Region (AHEC), also operates initiatives to interest high school students in nursing and healthcare. The HISC has offered a means for industry to speak in a common voice. Having addressed RN nursing shortages in Austin, HISC is focusing on the quality and retention of nurses and expanding its efforts in the area of allied health occupations, several of which are WPP target occupations.

2. **Capital IDEA** has helped to raise the completion rates and the numbers and diversity of the area’s nursing workforce. It also has provided important intermediary services to facilitate collaboration between ACC educators and industry. Moreover, Capital IDEA coordinates employment and training services with Workforce Solutions, leveraging additional opportunities and resources to meet shared program objectives.
3. **Workforce Solutions–Capital Area** is a key partner, not only staffing the HISC, but also providing education, training, and support services for residents.
4. **Seton Healthcare Family and St David’s Healthcare** have provided funding to hire additional nursing faculty, which has allowed ACC to expand its enrollment capacity in nursing. They also have been key providers of clinical placements and employment.
5. **The Health Resources and Services Administration (HRSA) of the U.S. Department of Health and Human Services** provided a 3-year grant that funded augmented counseling, tutoring and stipends for first-year nursing students at Austin Community College. The grant aimed to keep disadvantaged, underrepresented students in nursing school.
6. **New schools of nursing were established at Texas State University and Concordia University**, adding to existing programs at Austin Community College and The University of Texas at Austin. Among the graduates of all these institutions, ADNs from ACC are most likely to stay and work in Central Texas.
7. **Opportunities in allied health fields** are emerging at a significant rate, and HISC partners are responding to employer demand and career opportunities across medical technologist fields, including: respiratory care, sonography, radiologic technology and others identified in this study.

## **NEXT STEPS FOR THE WPP INITIATIVE**

There are several initial steps that AARO and its members may want to consider in support of the emerging WPP initiative and the array of public and private interests it supports. Primary among these are:

**Create new industry sector committees in key growth sectors of the region’s labor market.**

Like the long-running Healthcare Industry Steering Committee, such committees provide a platform for the industry to articulate workforce needs and skills requirements. These can then be clearly communicated to educators and training providers with greater impact than messages from individual firms. It is commonly understood that future job openings are difficult to gauge and that supply is sensitive to opportunities. Industry steering committees can help address these challenges.

**Work with ACC to bolster its program and departmental advisory committees to emulate the strongest of them in terms of employer engagement in curriculum development, workforce needs, and placements.**

ACC's committees might additionally serve as one basis for developing and supporting industry sector steering committees, as well as a mechanism for steering supplemental resources to high-demand academic programs. One key emerging prospect is expanding the use of on-line and self-paced contextualized learning modules that meet industry standards and accelerate student progress, while potentially lowering costs.

**Obtain better information about the supply of potential employee candidates.**

More detailed information on the potential supply of workers is needed. The AARO Social Equity Committee found more than 200,000 adults in the Austin MSA age 25 and older have some college but no postsecondary degree or credential. This population undoubtedly varies in age, gender, family status, work experience, progress in postsecondary learning, and labor market status. For example, some likely lack sufficient basic skills to pass the COMPASS college placement exam or succeed in developmental courses. Some may have accumulated several college credits or nearly completed courses in a workforce major, but left school because they ran out of their Pell grant eligibility. AARO can work with ACC and others to secure data and develop a detailed profile of this population and use this information to design and implement tailored approaches to reach them. ACC recently developed the capability to profile students who have exited without completing a degree or certification or transferring to other schools.

**Tailor effective approaches to reach and assist priority target populations to complete their studies.**

Diversity within the population requires a mix of approaches tailored to the needs of subgroups. Equipped with better data, AARO will be positioned to select and prioritize subgroups within the entire population. Researchers recommend four preliminary subgroups that might be considered as WPP moves from concept to action.

1. Selected former participants of Capital IDEA who left the program for financial or family reasons and may now be ready to complete their degree or training. This group has proven potential to benefit from advanced education and training.
2. Former military personnel seeking new careers, particularly those recently discharged and returning to civilian life. Many personnel received occupational training in the military that can be advanced or redirected to civilian occupations, and may be eligible for educational benefits.<sup>8</sup>
3. Older returning students who enroll at ACC in academic programs in high-demand occupations. Many of these are motivated “to learn and earn,” and are likely to have relevant work experience that strengthens their hiring prospects.
4. Incumbent workers pursuing career advancement with their current employer’s participation. It is in the interest of firms to help develop their employees. Employer support or participation can take several forms, including providing financial educational assistance, offering schedule flexibility to permit workers to attend classes, and providing related work-based learning to supplement classroom instruction at ACC.

**Vet the idea of establishing a central job placement entity at ACC to facilitate student entry into jobs related to their field of study.**

This entity would be specialized to serve the needs of ACC students to help them find internships/paid work experience while in school, and jobs after graduation. Its central operational feature would be to place students with employers who support WPP. Such a center might cooperate with Capital IDEA staff to build upon on their successful intermediary activities to promote collaboration between ACC and industry under the broader umbrella of the WPP initiative. The center would not replace current departmental, Workforce Solutions, or other placement efforts, but rather strengthen them. During field interviews, some industry representatives recommended establishing an organized point of contact with ACC for student placements so they could avoid having to work piecemeal on a department-by-department basis.

**Encourage a conscious focus on hiring and promoting qualified local residents.**

WPP is targeting the resident population. To help level the playing field between more experienced in-migrants and local graduates, AARO might encourage members and others to work through a specialized placement unit, offer preferential access for ACC

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<sup>8</sup> The Austin Community College Foundation administers an endowed scholarship to assist military veterans and spouses of veterans to attend ACC. This scholarship was initiated by the Military Order of the Purple Heart Service Foundation, Inc. AARO could encourage members to support this fund.



graduates to the interview process, and internally promote their participating incumbent workforce.

**Expand the array of occupations targeted by WPP.**

During the project, members of AARO’s Social Equity Committee, Capital IDEA staff, labor market analysts , employers, and staff at both Capital Area and Rural Capital Workforce Solutions recommended additional occupations for consideration, ranging from welder to paralegal secretary and medical coder, among others. (A full list of these suggested occupations is contained in the appendix to this report.) WPP should be open and opportunistic in pursuing promising industry and occupational prospects that meet the project’s criteria, as well as needs of employers and jobseekers.<sup>9</sup>

**Support efforts to seek additional funding from the federal, state and/or local government, as well as from industry associations for successful programs and organizations.**

WPP can work to channel resources on behalf of the goals of the initiative by supporting programs such as Capital IDEA, which enjoys a solid reputation for results and high returns on its investments, and provides much-needed career coaching and wrap-around services to those students being served by ACC and other area training providers. In a recent successful example, ACC and the Workforce Solutions-Capital Area collaborated to obtain funding under the competitive Workforce Innovation Grant program from the U.S. Department of Labor. AARO may advocate for the business community to become an active, supporting partner in such grant applications in the future.

**Create a high-profile committee to promote, oversee, and monitor progress of the WPP-**

AARO can convene a committee composed of leaders from the major stakeholder groups to steer the WPP initiative and report regularly on its progress. This would minimally include the business community (e.g., the Greater Austin Chamber and other local Chambers, leading growth sectors), Austin Community College, the two area Workforce Investment Boards, and relevant civic and community groups.

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<sup>9</sup> For example, CAPCOG has recently noted a surge in manufacturing, reporting that an estimated 5,215 people work in the medical devices industry, up 8 percent from three years ago. (CAPCOG, *Data Points*, August 29, 2012. <http://datapoints.org/?p=1256> ). Dozens more jobs are projected each year. The *Austin Business Journal* recently featured a front-page article citing the large number of openings for high paying jobs available in technology. The article quotes Angelos Angelou predicting that Austin will have 25,000 new jobs by the end of this year. (Grattan, 2012).



## APPENDICES

### Summary of Labor Market Data for the Industry Clusters and Occupations

	Austin-Round Rock-San Marcos MSA			Capital Area WDA				
	2010 Employment	2010 Mean Salary	2010 Mean Hourly Wage	2010 Employment	2010 Mean Salary	2010 Mean Hourly Wage	Avg Annual Job Openings	
<b>Health and Life Sciences</b>								
Registered Nurses	10,080	\$65,350	\$31.42	8,500	\$66,265	\$31.86	370	
Respiratory Therapists	640	\$55,210	\$26.55	580	\$55,854	\$26.85	20	
Medical & Clinical Laboratory Technicians	630	\$37,400	\$17.98	460	\$38,837	\$18.67	30	
Cardiovascular Technologists & Technicians	150	\$57,880	\$27.83	130	\$57,810	\$27.79	5	
Diagnostic Medical Sonographers	310	\$61,340	\$29.49	260	\$61,049	\$29.35	5	
Radiologic Technologists & Technicians	930	\$52,770	\$25.37	800	\$52,591	\$25.28	30	
Surgical Technologists	520	\$42,470	\$20.42	490	\$42,497	\$20.43	25	
Licensed Practical & Licensed Vocational Nurses	2,880	\$44,120	\$21.21	1,890	\$44,959	\$21.62	140	
	<u>SUM</u>	<u>AVG</u>	<u>AVG</u>	<u>SUM</u>	<u>AVG</u>	<u>AVG</u>	<u>SUM</u>	
	16,140	\$52,068	\$25.03	13,110	\$52,483	\$25.23	625	
	Rural Capital Area WDA				Capital + Rural Area WDAs, Combined/Averaged			
	2010 Employment	2010 Mean Salary	2010 Mean Hourly Wage	Avg Annual Job Openings	2010 Employment	2010 Mean Salary	2010 Mean Hourly Wage	Avg Annual Job Openings
<b>Health and Life Sciences</b>								
Registered Nurses	1,960	\$59,413	\$28.56	115	10,460	\$62,839	\$30.21	485
Respiratory Therapists	80	49,700	\$23.89	5	660	\$52,777	\$25.37	25
Medical & Clinical Laboratory Technicians	190	\$32,851	\$15.79	10	650	\$35,844	\$17.23	40
Cardiovascular Technologists & Technicians	20	\$56,135	\$26.99	0	150	\$56,973	\$27.39	5
Diagnostic Medical Sonographers	50	\$62,890	\$30.24	0	310	\$61,970	\$29.80	5
Radiologic Technologists & Technicians	190	\$53,339	\$25.64	5	990	\$52,965	\$25.46	35
Surgical Technologists	60	\$40,819	\$19.62	5	550	\$41,658	\$20.03	30
Licensed Practical & Licensed Vocational Nurses	1,320	\$41,726	\$20.06	70	3,210	\$43,343	\$20.84	210
	<u>SUM</u>	<u>AVG</u>	<u>AVG</u>	<u>SUM</u>	<u>SUM</u>	<u>AVG</u>	<u>AVG</u>	<u>SUM</u>
	3,870	\$49,609	\$23.85	210	16,980	\$51,046	\$24.54	835

Information Technology	Austin-Round Rock-San Marcos MSA			Capital Area WDA				
	2010 Employment	2010 Mean Salary	2010 Mean Hourly Wage	2010 Employment	2010 Mean Salary	2010 Mean Hourly Wage	Avg Annual Job Openings	
Computer Systems Analysts	8,430	\$80,700	\$38.80	6,200	\$77,234	\$37.13	285	
Computer Support Specialists/ Security Specialists	5,700	\$52,690	\$25.33	4,660	\$54,820	\$26.36	220	
	SUM	AVG	AVG	SUM	AVG	AVG	SUM	
	14,130	\$66,695	\$32.07	10,860	\$66,027	\$31.75	505	
Information Technology	Rural Capital Area WDA				Capital + Rural Area WDAs, Combined/Averaged			
	2010 Employment	2010 Mean Salary	2010 Mean Hourly Wage	Avg Annual Job Openings	2010 Employment	2010 Mean Salary	2010 Mean Hourly Wage	Avg Annual Job Openings
Computer Systems Analysts	2,280	\$89,934	\$43.24	55	8,480	\$83,584	\$40.19	340
Computer Support Specialists/Security Specialists	1,110	\$42,754	\$20.55	45	5,770	\$48,787	\$23.46	265
	SUM	AVG	AVG	SUM	SUM	AVG	AVG	SUM
	3,390	\$66,344	\$31.90	100	14,250	\$66,186	\$31.82	605

Administration and Related	Austin-Round Rock-San Marcos MSA			Capital Area WDA				
	2010 Employment	2010 Mean Salary	2010 Mean Hourly Wage	2010 Employment	2010 Mean Salary	2010 Mean Hourly Wage	Avg Annual Job Openings	
Bookkeeping, Accounting, & Auditing Clerks	9,420	\$37,990	\$18.26	7,110	\$38,441	\$18.48	235	
Executive Secretaries & Executive Admin Assistants	12,180	\$49,180	\$23.65	9,140	\$49,040	\$23.58	360	
	SUM	AVG	AVG	SUM	AVG	AVG	SUM	
	21,600	\$43,585	\$20.96	16,250	\$43,741	\$21.03	595	
Administration and Related	Rural Capital Area WDA				Capital + Rural Area WDAs, Combined/Averaged			
	2010 Employment	2010 Mean Salary	2010 Mean Hourly Wage	Avg Annual Job Openings	2010 Employment	2010 Mean Salary	2010 Mean Hourly Wage	Avg Annual Job Openings
Bookkeeping, Accounting, & Auditing Clerks	2,790	\$35,426	\$17.03	85	9,900	\$36,934	\$17.76	320
Executive Secretaries & Executive Admin Assistants	3,370	\$48,800	\$23.46	75	12,510	\$48,920	\$23.52	435
	SUM	AVG	AVG	SUM	SUM	AVG	AVG	SUM
	6,160	\$42,113	\$20.25	160	22,410	\$42,927	\$20.64	755

Trades	Austin-Round Rock-San Marcos MSA			Capital Area WDA				
	2010 Employment	2010 Mean Salary	2010 Mean Hourly Wage	2010 Employment	2010 Mean Salary	2010 Mean Hourly Wage	Avg Annual Job Openings	
Electricians	3,200	\$40,060	\$19.26	2,500	\$40,405	\$19.43	115	
Plumbers, Pipefitters, & Steamfitters	2,360	\$43,060	\$20.70	1,900	\$43,792	\$21.05	70	
Automotive Service Technicians & Mechanics	3,210	\$41,460	\$19.93	2,190	\$43,059	\$20.70	75	
Heating, A/C & Refrigeration Mechanics & Installers	1,540	\$38,990	\$18.75	1,190	\$38,591	\$18.55	75	
Electrical Power-Line Installers & Repairers	520	\$43,110	\$20.73	310	\$47,105	\$22.65	15	
	SUM 10,830	AVG \$41,336	AVG \$19.87	SUM 8,090	AVG \$42,590	AVG \$20.48	SUM 350	
Trades	Rural Capital Area WDA				Capital + Rural Area WDAs, Combined/Averaged			
	2010 Employment	2010 Mean Salary	2010 Mean Hourly Wage	Avg Annual Job Openings	2010 Employment	2010 Mean Salary	2010 Mean Hourly Wage	Avg Annual Job Openings
Electricians	780	\$38,427	\$18.47	50	3,280	\$39,416	\$18.95	165
Plumbers, Pipefitters, & Steamfitters	670	\$38,711	\$18.61	30	2,570	\$41,252	\$19.83	100
Automotive Service Technicians & Mechanics	1,110	\$37,519	\$18.04	45	3,300	\$40,289	\$19.37	120
Heating, A/C & Refrigeration Mechanics & Installers	380	\$40,039	\$19.25	35	1,570	\$39,315	\$18.90	110
Electrical Power-Line Installers & Repairers	350	\$40,743	\$19.59	15	660	\$43,924	\$21.12	30
	SUM 3,290	AVG \$39,088	AVG \$18.79	SUM 175	SUM 11,380	AVG \$40,839	AVG \$19.63	SUM 525

## **Additional Potential Occupations Suggested**

### **Health Care**

- Dental Hygienist (Capital IDEA)
- Emergency Medical Services (Capital IDEA)
- Medical Coder/ Health Information Technology (Capital IDEA/AARO)
- Certified Ophthalmic Assistant (Capital IDEA)
- Polysomnography Technician/Technologist (Capital IDEA)

### **Information Technology**

- Computer Augmented Design (CAD) (Capital IDEA)
- Video Game Developer (Capital IDEA/AARO)

### **Trades**

- Renewable Energy Technician (Capital IDEA)
- Police and Sheriff's patrol officers (Brian Kelsey)
- Firefighters (Brian Kelsey)
- Bus and Truck Mechanics & Diesel Specialists (Brian Kelsey; Rural Capital WIB)
- Welders (AARO)
- Machinists (Rural Capital WIB)
- Sheet metal Workers (Rural Capital WIB)
- Auto Body and Related Repairers (Rural Capital WIB)
- Civil Engineering Technicians (Rural Capital WIB)
- Electrical and Electronic and Engineering Technicians (Rural Capital WIB)
- Industrial Machinery Mechanics (Rural Capital WIB)
- Inspectors, Testers, Sorters, Samplers, and Weighers (Rural Capital WIB)
- Surveying and Mapping Technicians (Rural Capital WIB)
- Telecommunications Equipment Installers and Repairers, Except Line Installers (Rural Capital WIB)
- Building Information Management or Building Information Modeling (Ali Khataw of Encotech)

### **Business Services and Administrative Occupations**

- Eligibility Interviewers, government programs (Brian Kelsey)
- Sales Representatives (Brian Kelsey)
- Hospitality, Travel & Tourism, and Meeting & Event Planning. (Michelle Constanzo, ACC)

### **Paralegals** (Barbara Johnson, AARO)

**Target successful Austin-based companies** whose employment align with selected occupations, such as:

- Dell
- National Instruments
- Silicon Laboratories
- Cirrus Logic
- Solar Winds, Inc.
- Medical Devices/Equipment (ArthroCare Corp, HealthTronics, Luminex)

Mary Daigle, a local staffing recruiter, confirmed that National Instruments, Luminex, Dell, and Ultra-ATS all have jobs that pay \$18 or more and either do not require a college degree or require only a 2-year degree.

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## Internet Resources

The following Internet tools and sources of data were used to compile research for this project. Listed below each source is the geographical area covered.

### O\*NET

National

### SOCRATES

Capital Area Workforce Development Area

Rural Capital Area Workforce Development Area

### SWAP

Capital Area Workforce Development Area

Rural Capital Area Workforce Development Area

### TRACER

Austin-Round Rock-San Marcos Metropolitan Statistical Area (MSA)

### U.S. Bureau of Labor Statistics

Austin-Round Rock-San Marcos Metropolitan Statistical Area (MSA)

### U.S. Census Bureau

Austin-Round Rock-San Marcos Metropolitan Statistical Area (MSA)

### Workforce Solutions

Capital Area Workforce Development Area

Rural Capital Area Workforce Development Area

## Interviews and Meetings Conducted

<u>Name</u>	<u>Type</u>	<u>Title, Employer/Affiliation</u>
Tamara Atkinson	Analyst	EO Officer, Workforce Solutions-Capital Area
Frances Deviney	Analyst	KIDS COUNT Director, CPPP
Richard Froschele	Analyst	Director, Labor Market and Career Information (LMCI), Texas Workforce Commission
Jon Hockenyos	Analyst	President, TXP
Steve Jackobs	Analyst	Executive Director, Capital IDEA
Bruce Kellison	Analyst	Associate Director of the Bureau of Business Research, IC <sup>2</sup>
Brian Kelsey	Analyst	Principal, Civic Analytics LLC
Al Lopez	Analyst	Planner, Workforce Solutions-Rural Capital Area
Ron Modesty	Analyst	Senior Employer Coordinator, Capital IDEA
John Rees	Analyst	Economic Development Program Manager, CAPCOG
Jane Billingsley	Educator	Hector Aguilar Educator Dean of Continuing Education, ACC
Michelle Costanzo	Educator	Department Chair/Professor of Office Administration, ACC
Warren Donworth	Educator	Department Chair/Professor of Hospitality Management, ACC
Gary Hampton	Educator	Professor, Welding Department, ACC
Eileen Klein	Educator	Dean of Applied Tech/Multimedia/Public Service, ACC
Mary Kohls	Educator	Dean of Health Sciences, ACC
Ana Mejia-Dietche	Educator	Dept Chair of Computer Science/Computer Information Systems, ACC
Mike Midgley	Educator	Director, HISC Workforce Solutions-Capital Area; Faculty, ACC
Reed Peoples	Educator	Vice President for Instruction, ACC
Charles Quinn	Educator	Chair of Accounting, ACC
Patricia Recek	Educator	Dean of Business Administration, ACC
Mike Shoebroek	Educator	Assistant Dean, Health Sciences, ACC
Linda Smarzik	Educator	Department Chair/Professor of Automotive Technology, ACC
Don Tracy	Educator	Dean of Computer Studies and Advanced Technology, ACC
W. Brian Voss	Educator	Workforce Education & Business Development, ACC
Bonnie Clipper	Employer	Vice Chair of Accounting, ACC
Ashton Cumberbatch	Employer	Gail Acuna Employer Director of Workforce Development, St. David's HealthCare
Mary Daigle	Employer	AVP of Professional Nursing Practice and Development, St. David's
Paul Dubiel	Employer	Jr. VP of Advocacy & Community Relations, Seton Healthcare Family
Michael Garcia	Employer	CEO, OnRamp Access; Nelson & Daigle Associates Imaging, Seton Healthcare Family
Bobby Jenkins	Employer	Senior Network Director of Surgical Services, Seton Family of Hospitals
James McElroy	Employer	President and CEO, ABC Home and Commercial
Cheryl Mele	Employer	Director, UT Human Resource Service Center
Nora Murillo	Employer	COO, Austin Energy
Heath Naquin	Employer	HRS Coordinator, UTemp
Bodie Nash	Employer	COO, Green Technology Alliance
		Director of Human Resources, Apple

Susan Neisinger	Employer	Seton Healthcare Family
Chris Noak	Employer	Financial Manager, Austin Energy
Jessica Ruiz	Employer	Director of Nursing at Westminster Manor Retirement Community
James Silvis	Employer	Tax Manager, Godwin & Associates
Claudette, Allan Walker	Employer	Owners, Rising Sun Automotive

***Health Industry Steering Committee (HISC)***

Ana Mejia-Dietche	Analyst	Director, HISC Workforce Solutions-Capital Area; Faculty, ACC
Alfonso Bermea	Educator	Director, Texas Area Health Education Center—Capital Region (AHEC))
Ashley King	Educator	Texas AHEC East—Capital Region
Donna Crenshaw	Analyst	Business Development Manager, Workforce Solutions-Capital Area
Gail Acuna	Employer	Director of Workforce Development, St. David's HealthCare
Lauren Nichols	Employer	Director of Education & Development for Diagnostics & Therapeutics, Seton
Nancy Laudenslager	Educator	Director, Workforce Development Center, ACC
Pam Stone	Educator	Professor of Vocational Nursing, ACC
Ron Modesty	Analyst	Senior Employer Coordinator, Capital IDEA

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