Key Occupations in Texas:
A Labor-Market Informed Applied Research Project

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Agenda

• Guiding Principles Grounded in Texas Pathways

• Applied Research Partnership
  • TACC and EMSI-Burning Glass

• Phase 1: Key Occupations and Career Pathways in Texas
  • Impact of Phase 1

• Phase 2: Regional Key Occupations and Career Pathways
  • A look under the hood!
PATHWAYS FRAMEWORK

**Connect**
Easily shop and select career-focused pathways that include industry-based certificates within the metamajor.

**Enter**
Onboard with a clear initial completion plan which could span less than 6 months.

**Progress**
Gain skills and work-related experiences in all targeted programs.

**Succeed**
Complete credentials in high-demand occupations aligned with further education without the loss of time or credit.

Learners From Multiple Entry Points
Enter Good Careers with Living Wages & Further Education Plan

Systemic whole-college reform helping students reach their goals
COVID-19 delivers a devastating blow to the Texas economy, forcing businesses across our state to shift, suspend, and in many cases close operations.

Why TRUE Pathways? An innovative response to a pandemic crisis

- Millions of Texans lost their jobs with a record number of more than 4 million filing initial claims for unemployment insurance at its height. Many of these workers lack skills to effectively transition back to work.

- Workers with only a high school diploma reached an unemployment rate of 19 percent in April 2020 that declined but remains significantly higher than the rate for credentialed workers. The incumbent workforce will also continue to face new skills requirements.

- The pandemic’s impact began with deep employment reductions in several industry sectors. It has now transitioned into the severe lack of skilled workforce with most businesses urgently in need of new applicants to fill large numbers of unfilled jobs.
• Significant shifts in businesses have resulted in a serious mismatch between workforce needs and unemployed and underemployed worker skills.

• A pre-pandemic national skills gap conflated with crisis related workplace transformations yield new skills alignment challenges for many Texans, including the incumbent workforce.

• Community college leaders, understanding the plight of our workforce, employers and economy, form a compact to offer solutions to meet the challenge, a TRUE solution for Building a Talent Strong Texas.

Why TRUE Pathways? An innovative response to a pandemic crisis...
The Knowledge Development objective is to **conduct research that creates actionable knowledge** to support the redesign of the student experience at all community colleges in Texas.

The Center, with guidance from the Knowledge Development Steering Committee designs, commissions, and conducts research studies and related activities to:

- **build the knowledge base** concerning Texas Pathways reform efforts,
- **enhance the impact** of community colleges’ Texas Pathways strategies, and
- **increase Texas community college research capacities**.
Research Partnership

Texas Association of Community Colleges

Emsi’s mission in higher education is to provide data and analytics that help colleges and universities:

- **Optimize**
  - Program offerings

- **Connect**
  - Students to programs and careers

- **Communicate**
  - Outcomes and impact
Phase 1: State Labor Market Insights
# Phase 1: State-Level Key Occupations

**PROJECT GOALS**

1. Determine **15 Key Occupations** in Texas
2. Create Key Occupation **Snapshots**
3. Create Skills-Based **Career Pathways**
4. Design **Clear and Informative Materials** to Communicate Goals to Stakeholders
5. Utilize Key Occupation Snapshots and Career Pathways to **Inform Practice and Policy**
Phase 1: Considerations for Key Occupations at the State Level

- High demand: Demand in job postings (Dec 1, 2019 – Nov 30, 2020)
- High growth: Projected employment growth, 10-year¹
- Living wage salary: MIT living wage calculator (2 adults 1 child)², at least $26,380 annually based on median BLS wages³
- Low automation risk⁴
- Entry-level and focus on sub-BA jobs
- In sync with top 10 Texas Workforce Commission job targets⁵

1: https://www.bls.gov/emp/
2: https://livingwage.mit.edu/states/48
3: https://www.bls.gov/bls/blswage.htm
5: https://www.twc.texas.gov/partners/target-occupations#overview Under resources: ‘Statewide Target Occupations List’, then ‘Top 10 Targeted Occupation’ tab
Phase 1: Understanding Career Pathways

- Burning Glass uses its vast database of job descriptions, occupations, and skills to map plausible career pathways from starter to next-step occupations.
- The pathways analysis considers:
  - Job similarity and skill overlap between occupations
  - Education and experience requirements
  - Once jobs have been mapped using this analysis, we consider other factors, such as salary, to create upwardly mobile pathways.
    - Salary data is based on BLS data for Texas using median salary
- By understanding the similarities between occupations, BGT recommends pathways that build upon the knowledge and skills acquired in the previous role.
  - As such, pathways are a blueprint that educational institutions can use to efficiently upskill workers.

**Cardiovascular Technologists and Technicians***

- **Starter Occupation:** Pharmacy Technicians
  - Salary: $35,110 (37,240 workers)
- **Skills to Acquire:**
  - Electrocardiogram (EKG / ECG)
  - Stress Testing
  - Catheterization Laboratory (CATH LAB)
- **Salary Boost for Next Occupation:** +$17,450
- **Next-step Occupation:** Magnetic Resonance Imaging Technologists*
  - Salary: $73,300 (sub-BA) (2,589 job posts)
- **Skills to Acquire:**
  - Computed Tomography (CT)
  - Radiology
  - Diagnostic Imaging
  - Patient Positioning
  - +$20,740

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* By understanding the similarities between occupations, BGT recommends pathways that build upon the knowledge and skills acquired in the previous role. As such, pathways are a blueprint that educational institutions can use to efficiently upskill workers.
Profile: Statewide
Key Occupation: Cardiovascular Technologists and Technicians*

4,197
Job Postings
Dec 1, 2019 - Nov 30, 2020

$52,560
Median Salary
Based on BLS data for Texas

16%
Projected Growth
Estimated growth in employment, 2020-2030

85%
Entry Level
Percent of job postings calling for 0-2 years of experience

10%
BA+ Level
Percent of job postings calling for a BA or higher

23% (Low)
Automation Risk
Based on Osborn and Frey’s methodology

This occupation is important to the following industries:
- Health Care and Social Assistance
- Professional, Scientific, and Technical Services
- Other Services (except Public Administration)

Top 5 Specialized Skills
1. Cardiopulmonary Resuscitation
2. Patient Care
3. Electrocardiogram
4. Cardiology
5. Catherization Laboratory (Cath Lab)

Top 5 Certifications
1. First Aid CPR AED
2. Basic Life Saving (BLS)
3. Advanced Cardiac Life Support Certification
4. Basic Cardiac Life Support Certification
5. American Registry of Radiologic Technologists Certification

Top 5 Employers
1. Hospital Corporation of America
2. Christus Health
3. Baylor Scott & White Health
4. Texas Health Resources
5. Houston Methodist

*License typically required
TRUE Pathways Map
Industry Area of Study: Health Sciences

**Starter Occupation**

- **Phlebotomists***
  - $33,090
  - (9,410 workers)

- **Pharmacy Technicians**
  - $35,110
  - (37,240 workers)

**Key Occupation**

**Cardiovascular Technologists and Technicians***
- $52,560
- (4,197 job posts)

**Skills to Acquire**

- Electrocardiogram (EKG / ECG)
- Stress Testing
- Catheterization Laboratory (CATH LAB)
- Ultrasound Radiology
- Patient Positioning
- Magnetic Resonance Imaging Technologists***
  - $73,300
  - (sub-BA)
  - (2,589 job posts)

**Salary Boost for Next Occupation**

- $19,470
- $17,450
- $20,740
- $7,620

**Next-step Occupation**

- Diagnostic Medical Sonographers***
  - $72,080
  - (sub-BA)
  - (2,495 job posts)

**TRUE Credential Example:**
North Central Texas College’s EKG Technician Certification has 2 courses, can be completed in 15 weeks, and costs $1,199 for tuition, textbook, practical lab materials, and CET certificate testing fee.

*License typically required
### Profile: Statewide

**Key Occupation:** Heating, Air Conditioning, and Refrigeration Mechanics and Installers**

<table>
<thead>
<tr>
<th>Job Postings</th>
<th>Median Salary</th>
<th>Projected Growth</th>
<th>Entry Level</th>
<th>BA+ Level</th>
<th>Automation Risk</th>
</tr>
</thead>
<tbody>
<tr>
<td>9,235</td>
<td>$45,510</td>
<td>16%</td>
<td>38%</td>
<td>0%</td>
<td>65% (Med)</td>
</tr>
</tbody>
</table>

**Based on BLS data for Texas**

**Estimated growth in employment, 2020-2030**

**Percent of job postings calling for 0-2 years of experience**

**Percent of job postings calling for a BA or higher**

Based on Osborn and Frey’s methodology

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**Top 5 Specialized Skills**

1. HVAC
2. Repair
3. Plumbing
4. Ventilation
5. Predictive/Preventative Maintenance

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**Top 5 Certifications**

1. Drivers License
2. Environmental Protection Agency Certification
3. EPA/CFC/HCFC Certification
5. Occupational Safety and Health Administration Certification

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**Top 5 Employers**

1. Sears
2. TDindustries
3. Lochridge Priest Industries
4. Johnson Controls Incorporated
5. Cxc Talent Solutions

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*License typically required
+Texas Workforce Commission

**Target Occupation**

This occupation is important to the following industries:

- Construction
- Manufacturing
- Retail Trade

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*Target Occupation*
TRUE Pathways Map
Industry Area of Study: Design, Manufacturing, Construction & Applied Technologies

Starter Occupation

- Maintenance and Repair Workers, General
  - $36,560
  - (117,760 workers)

- Home Appliance Repairers
  - $30,420
  - (2,640 workers)

- Outdoor Power Equipment and Other Small Engine Mechanics
  - $37,400
  - (2,670 workers)

Skills to Acquire

- HVAC Ventilation Duct Work
- Boilers

Salary Boost for Next Occupation

- +$8,950

Skills to Acquire

- Transformers
- Wiring
- Schematic Diagrams
- Test Equipment
- Circuit Breakers

Skills to Acquire

- Welding
- Hydraulics
- Programmable Logic Controller (PLC)
- Programming
- Conveyor Systems
- Machining
- Pipe Fitting
- Pipe Systems
- Residential & Commercial Plumbing
- Drain Cleaning

Key Occupation

Heating, Air Conditioning, and Refrigeration Mechanics and Installers*

- $45,510
- (9,235 job posts)

Salary Boost for Next Occupation

- +$5,610

Skills to Acquire

- Electricians*
  - $51,120
  - (sub-BA)
  - (4,780 job posts)

Skills to Acquire

- Industrial Machinery Mechanics
  - $54,110
  - (sub-BA)
  - (2,767 job posts)

Skills to Acquire

- Plumbers, Pipefitters, and Steamfitters*
  - $50,780
  - (sub-BA)
  - (4,406 job posts)

TRUE Credential Example:
Austin Community College HVAC Certification has 4 courses, can be completed in 16-20 weeks, and costs $1,450 in tuition. 96% of students complete the program and 93% of completers are placed in HVAC jobs.

*License typically required
Phase 1: Impact
Driver Diagram Discussion Starter for TRUE colleges:
What’s Your Focus, What’s the Work to Be Done between Now & September?

**OVERALL AIM**
- Build and scale a robust suite of (truly) stackable, high-value short-term credentials that align to regional labor market needs

**S.M.A.R.T. AIM**
- Launch three micro-credentials in September

**PRIMARY DRIVERS**
- Refining curriculum & aligning to pathways
  - Marketing & recruitment to ensure key partners are able to make sure potential students are aware of the opportunity & supported to enroll
- Advisor preparation
  - Designing the learner experience

**Actions**
- Partnering with VPASs & Deans
- Micro pathways visualizations
- Streamline Articulation Agreements/Equivalencies
- Testing messages
- Providing marketing materials
- Creating a video library of curriculums
- Engaging Industry-focus groups
- Weekly meeting with Student Success: enrollment and advisors (creating advising model from non-credit to credit)
- Hosting design sessions to complete student journey mapping
- Focus groups with potential learners
TRUE Pathway

Logistics Technician

ASSOCIATE OF APPLIED SCIENCE
Logistics and Manufacturing Technology AAS

LEVEL 1 CERTIFICATE
Logistics Distribution Technician Certificate

FAST-TRACK CE
Logistics Technician

- CNSE 1003 Forklift Operator Certification
- OSH 1000 Basic Safety and Health
- MSSC Certified Forklift Technician (CFT)
- OSHA 10 Certificate
- LMGT 1010 Intro to Business Logistics
- LMGT 1021 Intro to Materials Handling
- MSSC Certified Logistics Associate (CLA)
- LMGT 1025 Warehouse and Distribution Center Management
- MSSC Certified Logistics Technician (CLT)
- LMGT 1040 Contemporary Logistics Issues
- IBUS 1000 Global Logistics Management
- SMGT 2084 Experiential Learning

MSSC Certified Forklift Technician (CFT), Certified Logistics Associate (CLA), and Technician (CLT)

Level I Certificate Occupation Opportunity
FIRST-LINE SUPERVISORS OF PRODUCTION AND OPERATING WORKERS
Median Salary > $62,088

Up to 14 Credits Articulated CEU
LEVEL 1 CERTIFICATE
Logistics Distribution Technician Certificate

- LMGT 1319 Intro to Business Logistics
- LMGT 1321 Intro to Materials Handling
- MSSC Certified Logistics Associate (CLA)
- LMGT 1325 Warehouse and Distribution Center Management
- MSSC Certified Logistics Technician (CLT)
- LMGT 1340 Contemporary Logistics Issues
- IBUS 1000 Global Logistics Management
- SMGT 2084 Experiential Learning
- or LMGT 2384 Principles of Traffic Management

15 Credits Articulated CEU + 3 Earned Credits + 39 Credits
(Total 68 Credit Hours)

ASSOCIATE OF APPLIED SCIENCE
Logistics and Manufacturing Technology AAS

7 Courses Specialization
- LMGT 2330 International Logistics Management
- ENGL 1301 Composition I
- MATH 13xx College Algebra or Elem Stats or Math for Business & Social Sci
- SPCH 11xx Speech of Public Speaking
- Elective Humanities/Fine Arts
- ECON 2301 Principles of Microeconomics
- or ECON 2302 Principles of Macroeconomics

LEVEL 1 CERTIFICATE

FAST-TRACK CE
SB1102 and TRUE Program Uses

By statute, funding for TRUE must be used to:

- Support **industry-aligned, high-demand** postsecondary workforce credentials or industry certifications in growing occupations than can be completed in 6 months or less;
- Provide training through **existing, new, or redesigned programs** focused on high-demand skills and leading to workforce credentials or industry certifications in growing occupations;
- **Expand institutional capacity** to provide stackable postsecondary workforce and industry certifications in high-demand pathways;
- **Provide student aid awards** to incentivize enrollment and completion of industry-aligned, high-demand postsecondary workforce credentials and industry certifications; and
- **Cover the cost of tracking and reporting** enrollment, credential completion, and employment outcomes of students.
Accelerating the Production of High Value Credentials

Additional GEER Funding July 2021:
$25 million - TRUE Program Start Up

Purpose:
Institutional capacity building to rapidly create, redesign and expand education and training programs in high value occupations that are tightly aligned with employer and industry needs.
Phase 2: Regional Labor Market Insights
A Look Under the Hood: **Target Index**

- **Typical education**
- **Unique job postings & number of jobs**
- **10th percentile & median earnings**
- **Regional and state Location Quotient**
- **Automation Index**
- **5-year & 10-year projections**
Regional Labor Market Snapshots

**East**
- Electrical and Electronics Repairers
- Physical Therapy Assistants
- Surgical Technologists
- Dental Hygienists
- Industrial Engineering Technologists and Technicians

**North**
- Aircraft Mechanics and Service Technicians
- Insurance Appraisers, Auto Damage
- Dental Hygienists
- Architecture and Civil Drafters
- Paralegals and Legal Assistants
Regional Labor Market Snapshots

**Central**
- Computer User Support Specialists
- Industrial Engineering Technologists and Technicians
- Telecommunications Equipment Installers and Repairers
- Computer Network Support Support Specialists
- Licensed Practical and Vocational Nurses

**Southeast**
- Cardiovascular Technologists and Technicians
- Dental Assistants
- Diagnostic Medical Sonographers
- Calibration Technologists and Technicians
- Computer Network Support Support Specialists
Regional Labor Market Snapshots

**West**
- Heavy and Tractor-Trailer Truck Drivers
- Radiologic Technologists and Technicians
- Health Information Technologists
- Electrical and Electronic Engineering Technologists
- Respiratory Therapists

**South**
- Web Developers
- Fire Inspectors and Investigators
- Occupational Therapy Assistants
- Licensed Practical and Vocational Nurses
- Computer Network Support Specialists
Phase 2: Regional Labor Market Insights: Coming Soon!
Thank you!

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Texas Association of Community Colleges
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