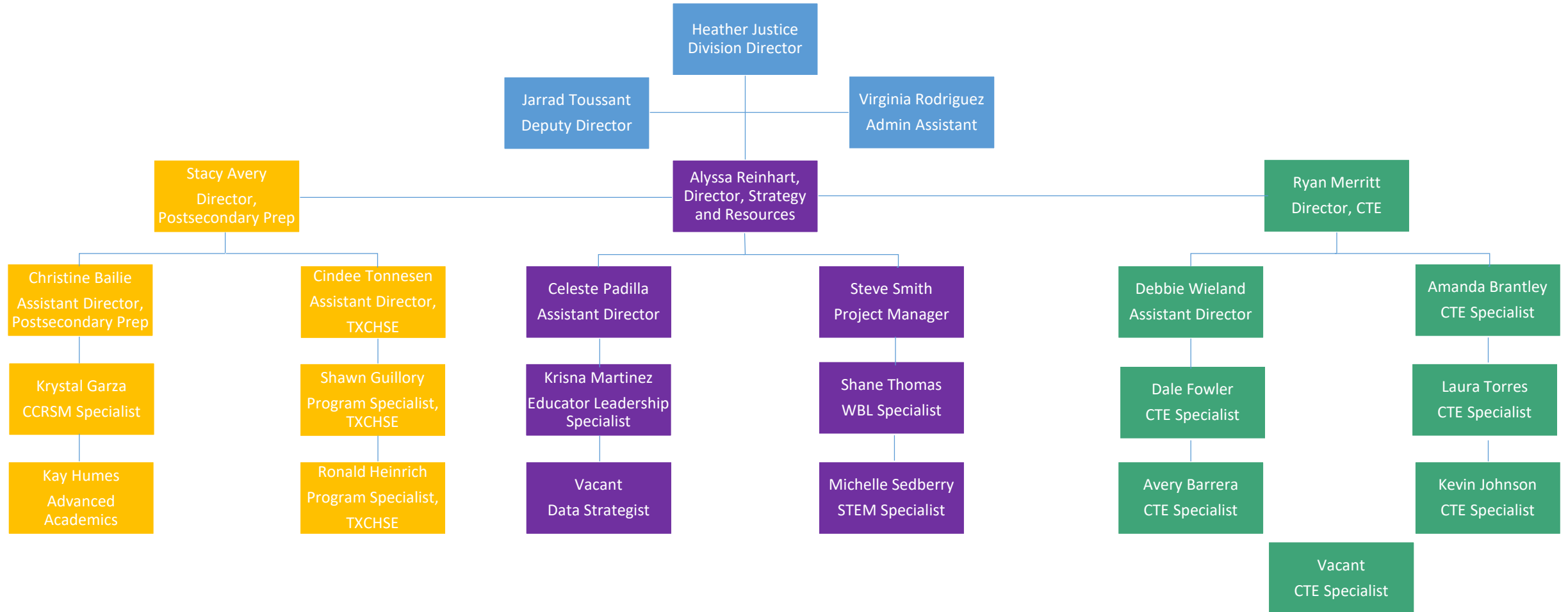


The background of the slide is a photograph of a group of diverse students smiling. In the foreground, three students are prominently featured: a white girl on the left, a white girl in the center, and a Black girl on the right, all smiling broadly. Other students are visible in the background, slightly out of focus.

# **Division of College, Career, and Military Preparation (CCMP)**

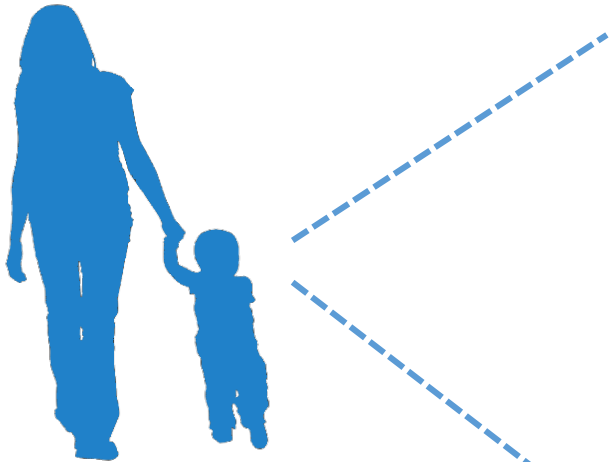
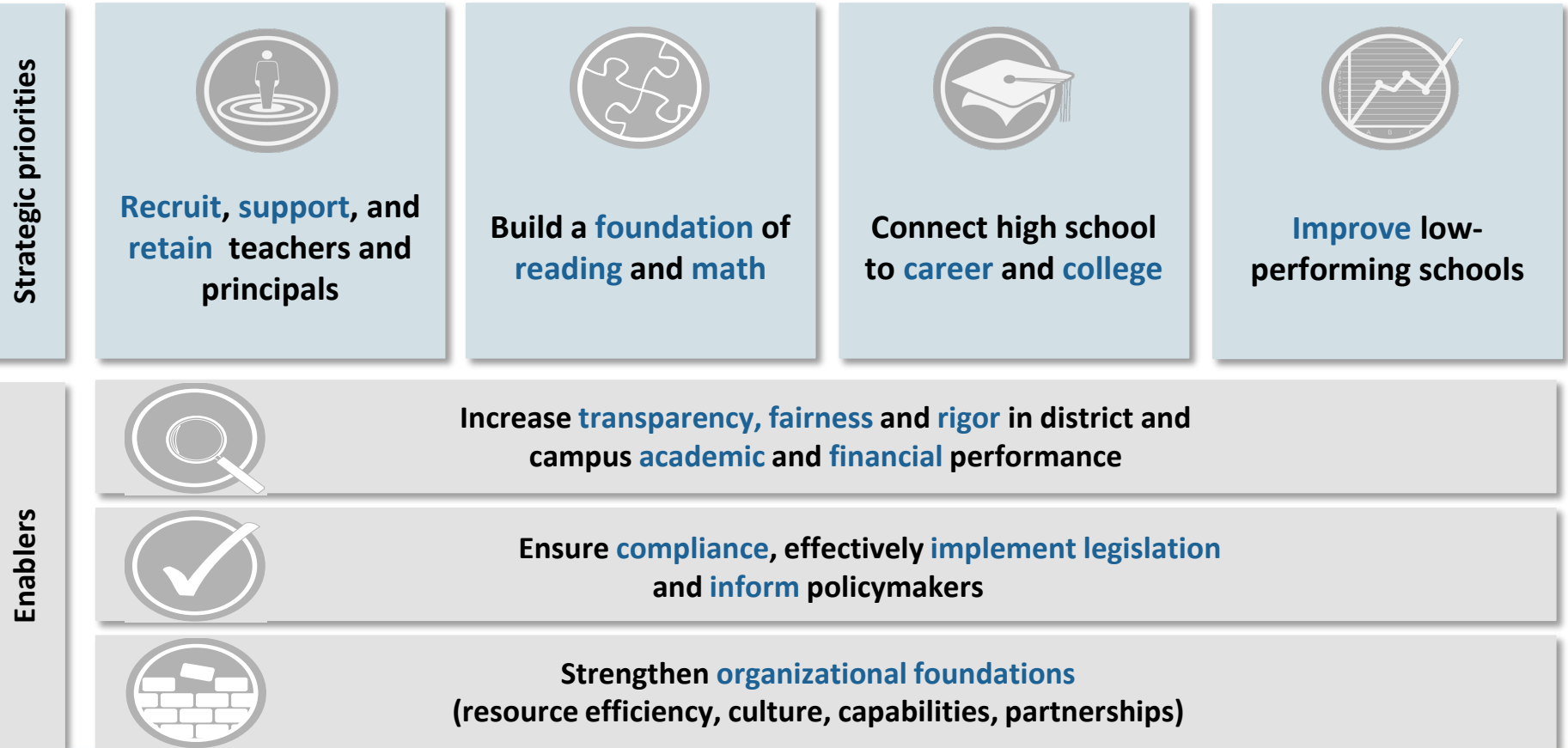
# College, Career, & Military Prep Division



# TEA Strategic Priorities

**One Mission. One Strategy.**

Every child, prepared for success in college, a career or the military.



# Connect High School to Career and College: Division of CCMP

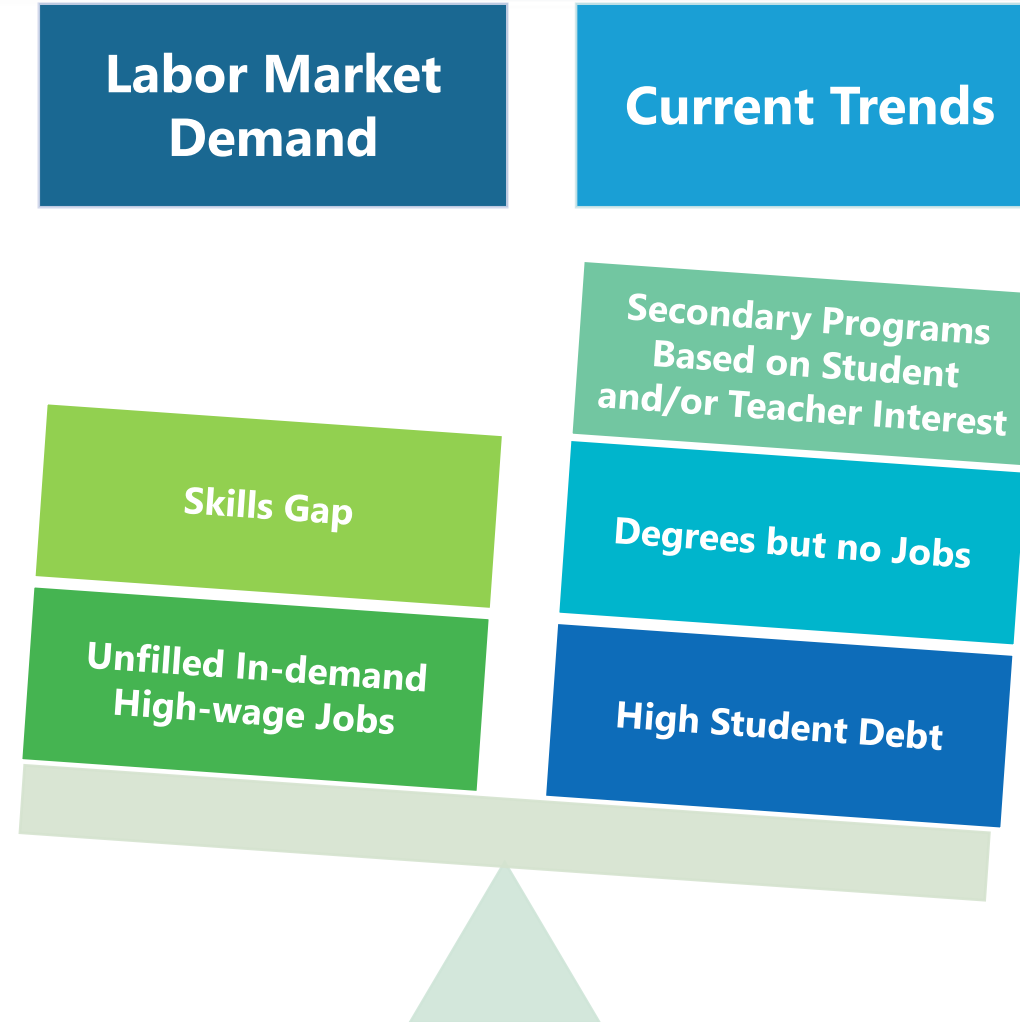
*Aligning Texas's Educational Goals with Its Diverse Industry Needs and Opportunities*



# Mismatch Between Labor Supply Pipeline and Demand

## What the Labor Market Needs



- Alignment between programs of study, postsecondary programs, and local labor market



## How Program Decisions are Made

- Student Interest
- Teacher endorsements

# Connect High School to College and Career: CCMP Projects

Category	Initiative	Description
<b>Identify</b> 	<b>1 Identify &amp; Verify Industry-Based Certifications (IBCs)</b>	<ul style="list-style-type: none"> <li>• Create process for identification and verification of IBCs to include employer input</li> <li>• Align IBCs to high wage and high demand occupations and vertically aligned postsecondary programs in Texas</li> <li>• Establish revised list of IBCs for implementation in 2019-2020</li> </ul>
	<b>2 Identify &amp; Refine Pathways</b>	<ul style="list-style-type: none"> <li>• Conduct research on Texas Labor Market Information (LMI) to identify high wage and high demand occupations</li> <li>• Cultivate external stakeholders and leverage existing Tri-Agency efforts to form Texas Regional Pathways Advisory/Steering Committee</li> <li>• Refine components of effective P-20 student pathways</li> </ul>
	<b>3 CTE Programs</b>	<ul style="list-style-type: none"> <li>• Conduct CTE statewide evaluation</li> <li>• <b>Align CTE programs of study (coherent sequences of courses) with Texas high wage, high demand occupations and postsecondary programs. Embed IBCs, postsecondary programs, and work-based learning in CTE programs of study</b></li> <li>• Create new statewide industry advisory councils for each career cluster to assist in program of study revisions</li> <li>• <b>Perkins V</b></li> </ul>
<b>Models &amp; Courses</b> 	<b>4 College and Career Readiness School Models (CCRSM)</b>	<ul style="list-style-type: none"> <li>• Revise blueprints and Outcome Based Measures for Early College High Schools, Pathways in Technology Early College High Schools, Texas-STEM Academies, and Industry Cluster Innovative Academies</li> <li>• Provide technical assistance to districts to implement CCRSM</li> <li>• Expand and create advanced course offerings (AP, IB, dual credit, other opportunities)</li> <li>• Provide expanded access for students to demonstrate college and career readiness (ACT, SAT, TSIA)</li> </ul>
	<b>5 Work-Based Learning (WBL) and STEM</b>	<ul style="list-style-type: none"> <li>• Conduct research on existing best practices in WBL models across Texas and United States</li> <li>• <b>Establish a flexible statewide K-12 WBL framework from career awareness and exploration through career preparation</b>, inclusive of externships, internships, and apprenticeships</li> <li>• <b>Establish a statewide plan for increasing access to STEM subjects and methodology across K-12</b></li> </ul>



# Listening Session

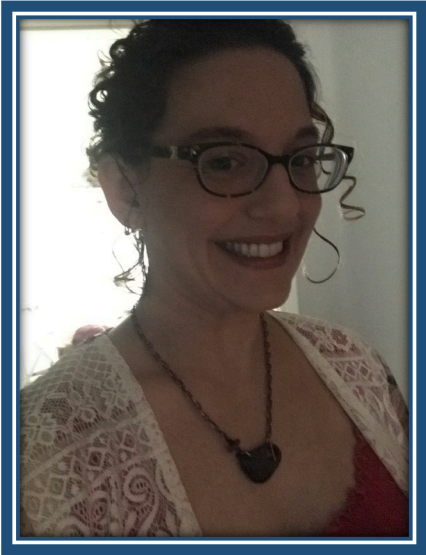
## Designing Statewide Frameworks for Work-Based Learning and STEM

Michelle Sedberry  
STEM Program Specialist  
[michelle.sedberry@tea.texas.gov](mailto:michelle.sedberry@tea.texas.gov)

Shane Thomas  
Work-Based Learning Program Specialist  
[shane.thomas@tea.texas.gov](mailto:shane.thomas@tea.texas.gov)

# Presenter Background

## Michelle Sedberry



- Taught Science for 8 years
- District Level Science Specialist with Lubbock ISD for 4 years
- K-12 Science Specialist at ESC 17 for 6 years
- Aerospace/STEM Officer for USAF Civil Air Patrol for 4 years
- Adjunct Science Professor at TTU for Preservice Science Teachers
- TEA STEM Program Specialist since June 1, 2018



## Presenter Background

### Shane Thomas



- Taught Marketing courses in Fairfax County, Virginia for 6 years
- Director of Competitive Events for DECA Inc. for 8 years
- Career and Technical Education Coordinator for Dallas ISD for 2+ years
- TEA Work-Based Learning Program Specialist since July 16, 2018

Obtain information from stakeholders across the state to help develop flexible statewide frameworks for Work-Based Learning (WBL) and STEM.

# Session Purpose

## IS:

- To hear the voice from the field
- To identify innovative and promising practices
- To identify obstacles and barriers for implementation
- To start an ongoing, two-way dialogue

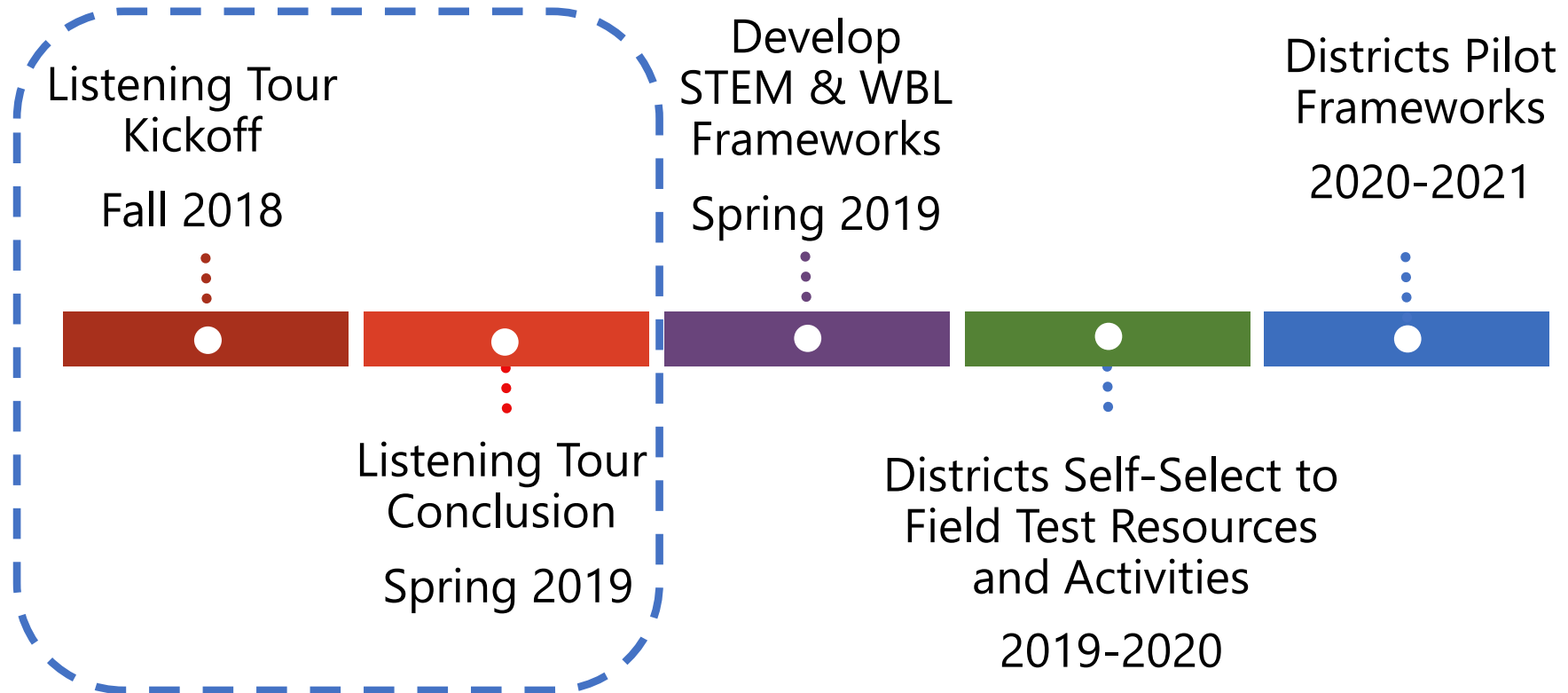
## IS NOT:

- To create the final frameworks
- To mandate implementation
- To create curriculum

# Session Norms

- Stay **student focused**
- Stay **solutions-focused** and think **outside the box**
- Ensure everyone gets a chance to have their **voice heard**
- Assume **positive intent**
- Speak freely, but **respect** and **appreciate** different ideas
- Use **technology** in learning mode (be present)
- Use **parking lot** for questions not connected to current conversation

# Timeline



Development of K-12 STEM and Work-Based Learning Frameworks

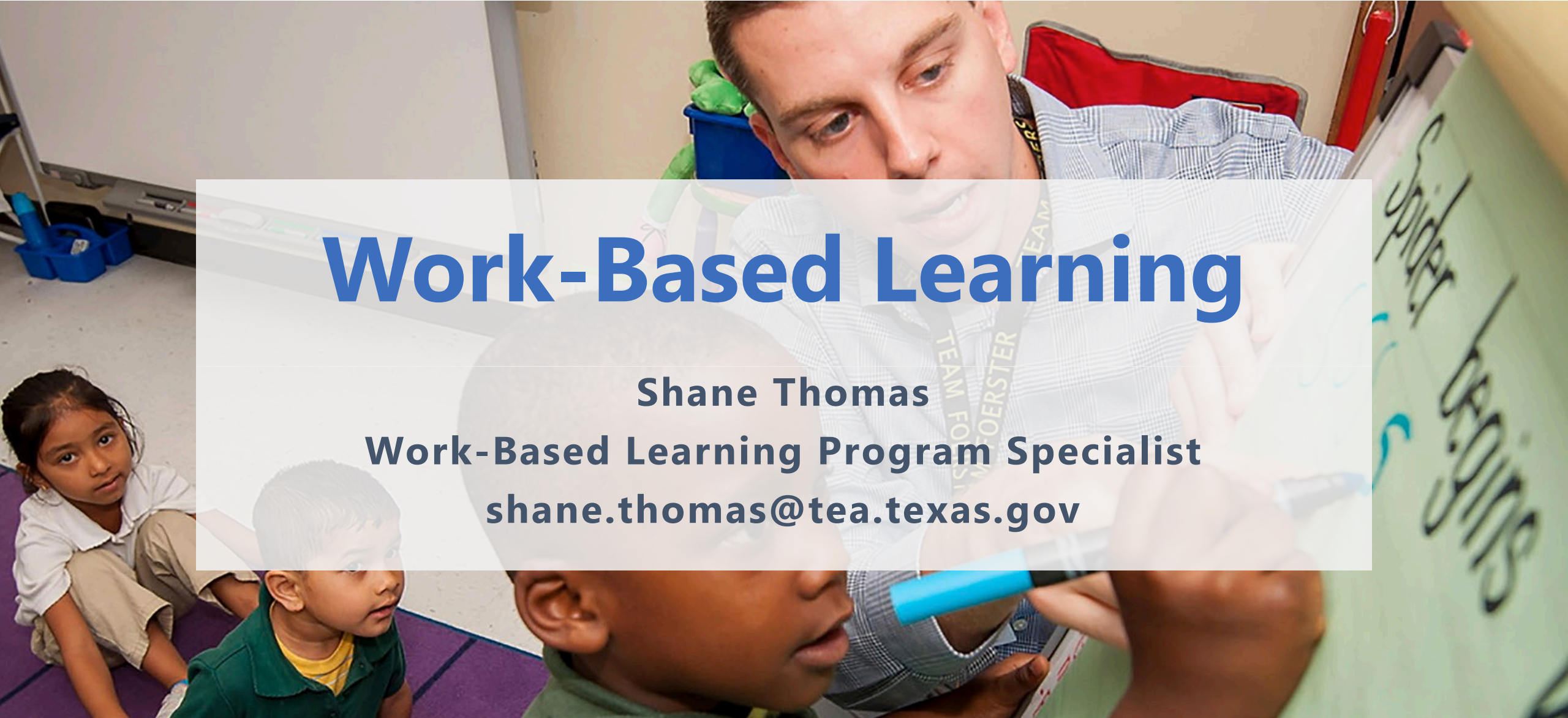


# Work-Based Learning

**Shane Thomas**

**Work-Based Learning Program Specialist**

**[shane.thomas@tea.texas.gov](mailto:shane.thomas@tea.texas.gov)**





TEXAS HAS ADDED THE  
MOST PRIVATE SECTOR JOBS  
OVER THE LAST 10 YEARS  
THAN ANY OTHER STATE

**1,776,400**

**JOBS**

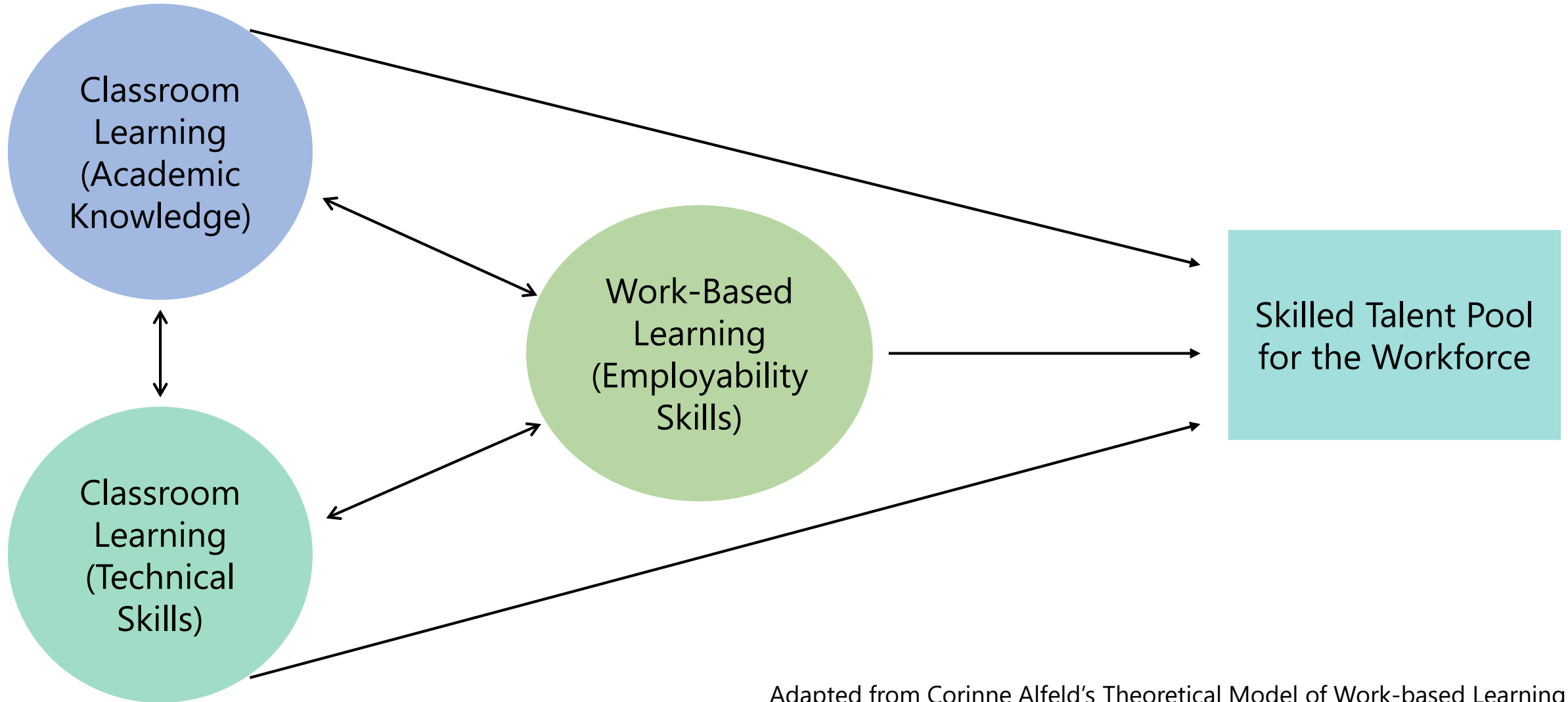
TEXAS WORKFORCE COMMISSION  
[texasworkforce.org](http://texasworkforce.org)



Source: Labor Market and Career Information Department, Texas Workforce Commission

**Goal:**  
Align Texas's  
educational goals  
with its diverse  
industry needs and  
opportunities.

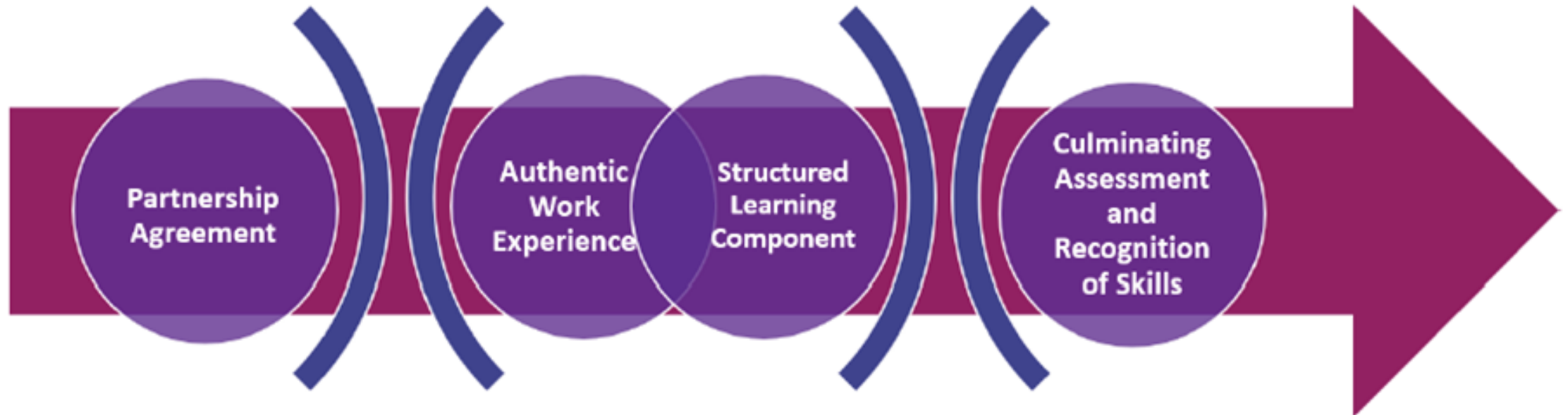
# Theoretical Model of Work-Based Learning



Adapted from Corinne Alfeld's Theoretical Model of Work-based Learning



# Elements of High-Quality Capstone Work-Based Learning Experiences



Source: Hauge, K. (2018). *States Continue Advancing Strategies to Scale Work-Based Learning*. Washington, DC: National Governors Association.

# Based on the Research...

Work-Based Learning is a P-20 continuum of intentional activities and experiences designed to expand the boundaries of the classroom and prepare students for future career opportunities.

## **Work-Based Learning provides opportunities for students to:**

Develop essential  
employability skills

Engage with  
business and  
industry  
professionals

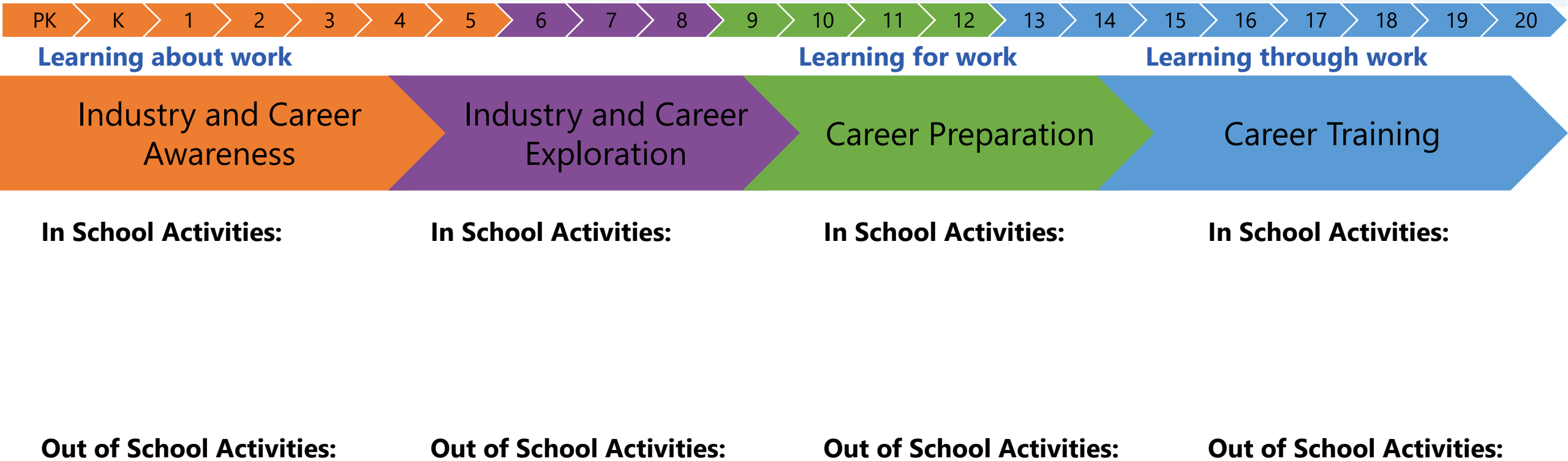
Explore potential  
career options

Apply knowledge  
learned in the  
classroom

# Work-Based Learning (WBL) Continuum




# Work-Based Learning (WBL) Continuum



# Your Voice Matters

CCMP Listening Tour



1. Which of the following best describes your primary role in education? (Check one.)
 

☐ Education Administrator (Superintendent, Principal, Assistant Principal)  
☐ Counselor (Guidance, Career, Transition)  
☐ Director/Specialist (Curriculum/Content, CTE, ESC Staff)  
☐ Teacher (Academic, CTE, Special Populations)  
☐ Other \_\_\_\_\_
  
2. In your school or district, who is primarily responsible for coordinating work-based learning experiences for students? (Check one.)
 

☐ Principal  
☐ Counselor  
☐ Teacher  
☐ Career and Technical Education Department Staff  
☐ Work-Based Learning Coordinator  
☐ Curriculum Coordinator  
☐ Other \_\_\_\_\_
  
3. Of the parties listed below, which are you likely to have formalized relationships or agreements such as a memorandum of understanding? (Check all that apply.)
 

☐ Chamber(s) of Commerce  
☐ Institution(s) of Higher Education  
☐ Specific business/industry partner(s)  
☐ Local Workforce Development Area Board(s)  
☐ Local non-profit organizations  
☐ Other \_\_\_\_\_  
☐ We do not have formalized relationships or agreements established at this time.
  
4. What are the current strengths of your work-based learning efforts?
  
5. How are you currently measuring the success of your work-based learning efforts?
  
6. What challenges/barriers are you currently facing related to offering high-quality work-based learning experiences to your students?
  
7. What help/assistance from TEA do you need in order to improve work-based learning efforts?

- What are the strengths of your current work-based learning efforts?
- How are you currently measuring the success of your work-based learning efforts?
- What challenges/barriers are you currently facing related to offering high-quality work-based learning experiences to your students?
- What help/assistance from TEA do you need in order to improve work-based learning efforts?

Shane Thomas  
Work-Based Learning Program Specialist  
[shane.thomas@tea.texas.gov](mailto:shane.thomas@tea.texas.gov)



BREAK





# Science, Technology, Engineering, Math (STEM)

**Michelle Sedberry**

**STEM Program Specialist**

**[michelle.sedberry@tea.texas.gov](mailto:michelle.sedberry@tea.texas.gov)**

"The industrial revolution made it necessary for all children to learn to read, the technology revolution has made it critical for all children to understand STEM."

National Science Foundation 2017 Executive Summary

# Based on the Research...

## **STEM Education is...**

- A way of thinking about content
- A method of delivering integrated content
- Teaching STEM fluency Skills that are transferrable
- Real-world problems presented as part of the curriculum and students are challenged to apply each of the four content areas seamlessly.

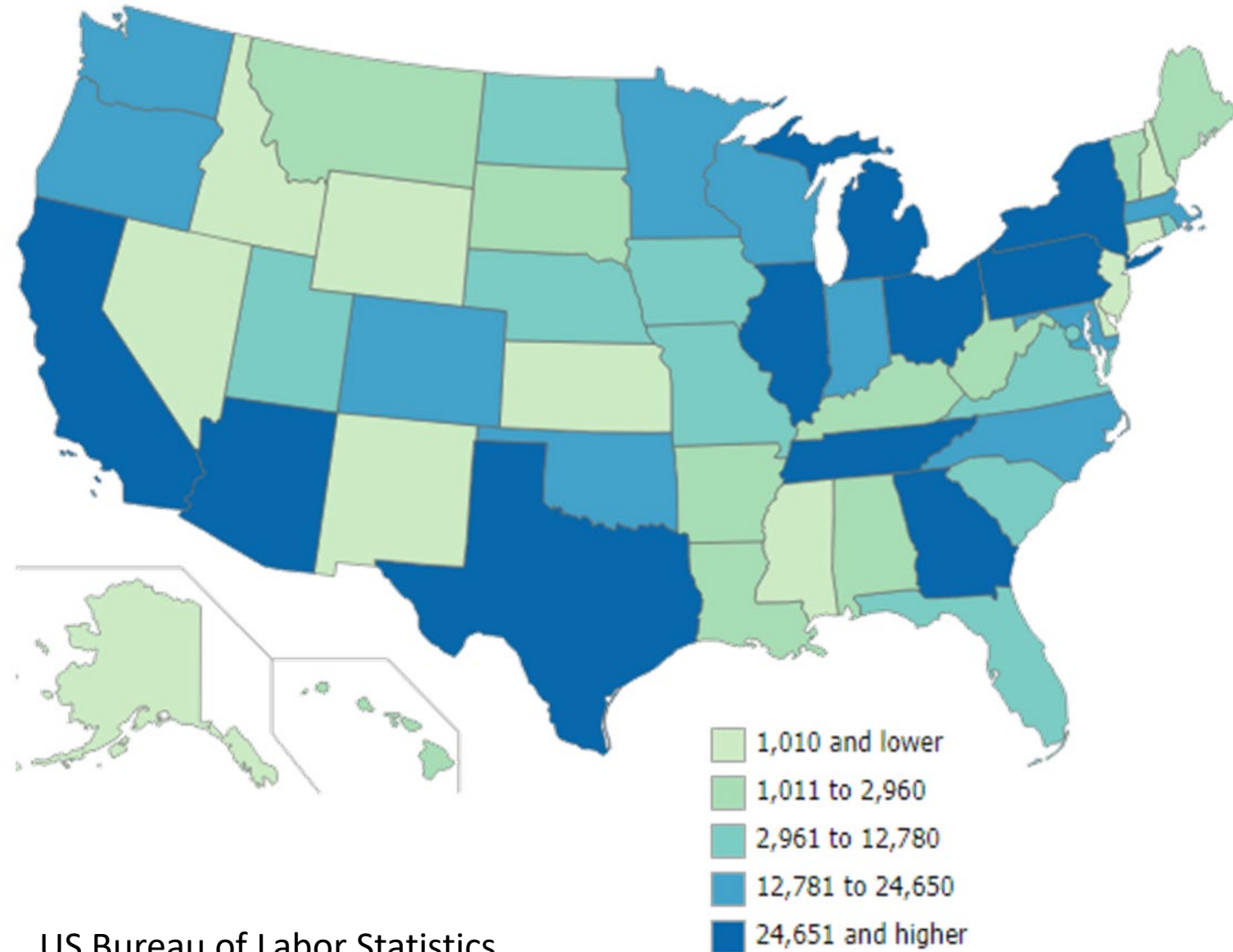
## **STEM Education is not:**

- A course or program
- Turning all students into engineers
- A buzz word
- A fad or short-term endeavor

Texas is expected to have the **second**-highest percentage of the nation's future STEM job opportunities.

*Source: Texas Workforce Commission*

Employment change for STEM occupations by state, May 2009 to May 2015



US Bureau of Labor Statistics

Regardless of geography, race, gender, ethnicity, socioeconomic status, veteran status, parental education attainment, disability status, learning challenges, and other social identities, **all** Americans **deserve** the chance to master STEM skills and methods, both for their own success and for America's competitiveness.

Executive Office of the President of the United States Dec. 2018



# STEM Education Goals

- Ensure **equitable** access to STEM programming across Texas
- Increase **student outcomes** and help guide students into relevant, and engaging pathways that lead to postsecondary success
- Vertically align efforts to allow **earlier exposure** to STEM integrated thinking

# What is STEM Integrated Thinking?

It is the integration of  
**science** and **math**  
knowledge to **design**  
products or  
processes to solve  
problems using  
**technology**.



# Examples of STEM Integrated Thinking in High School

- Networking Lab
- Digital Media
- Computer Programming I and II
- Robotics I and II
- Advanced Animal Science
- World Health Research
- Forensic Science
- AC/DC Electronics
- Agricultural Equipment Design and Fabrication
- Construction Management II
- Metal Fabrication and Machining II
- Engineering Design and Problem Solving
- Mathematical Applications in Ag, Food and Natural Resources
- Mathematics for Medical Professionals





# Texas STEM Education Continuum



Awareness

Exploration

Career Preparation

Career Training

**Learning STEM Integrated Thinking through  
Content Application**

**Communication, Creativity, Collaboration, Critical  
Thinking, Resilience**

**STEM Application  
through Work**

**Promptness, Time  
Management,  
Flexibility, Problem  
Solving, Collaboration**



# Tour of Knowledge

**Poster 1:** What would you consider to be the **gold standard** for a STEM program?

**Poster 2:** What are the **obstacles** for implementing STEM in Elem/Middle/High School?

**Poster 3:** How are you **measuring** the success of your K-12 STEM program (short-term, long-term)?

**Poster 4:** What **assistance and support** do you need from TEA for implementation of high-quality STEM programming?

**Poster 5:** What is your district currently doing that **promotes** STEM integrated thinking?

**Poster 6:** What else do you want TEA to know before we start developing the STEM Framework?

1. Number off 1-6
2. Rules of engagement:
  - 1 idea per post-it note
  - Everyone must participate at each poster
3. 1 minute to capture your response
4. 2 minutes to discuss group post-its or add new ideas
5. Move to the next poster when you hear the chime

- **Administrator:**

- Superintendent
- Principal
- Assistant Principal

- **Counselor:**

- Guidance
- Career
- Transition

- **Specialist/Director:**

- Curriculum/Content
- CTE
- ESC Staff

- **Teacher:**

- CTE
- Academic
- Special Populations



# Tour of Knowledge

**Poster 1:** What would you consider to be the **gold standard** for a STEM program?

**Poster 2:** What are the **obstacles** for implementing STEM in Elem/Middle/High School?

**Poster 3:** How are you **measuring** the success of your K-12 STEM program (short-term, long-term)?

**Poster 4:** What **assistance and support** do you need from TEA for implementation of high-quality STEM programming?

**Poster 5:** What is your district currently doing that **promotes** STEM integrated thinking?

**Poster 6:** What else do you want TEA to know before we start developing the STEM Framework?

# Affirmation Gallery Walk

Put a dot next to the statement you most agree with on each poster.



**Michelle Sedberry**  
**STEM Program Specialist**  
**[michelle.sedberry@tea.texas.gov](mailto:michelle.sedberry@tea.texas.gov)**

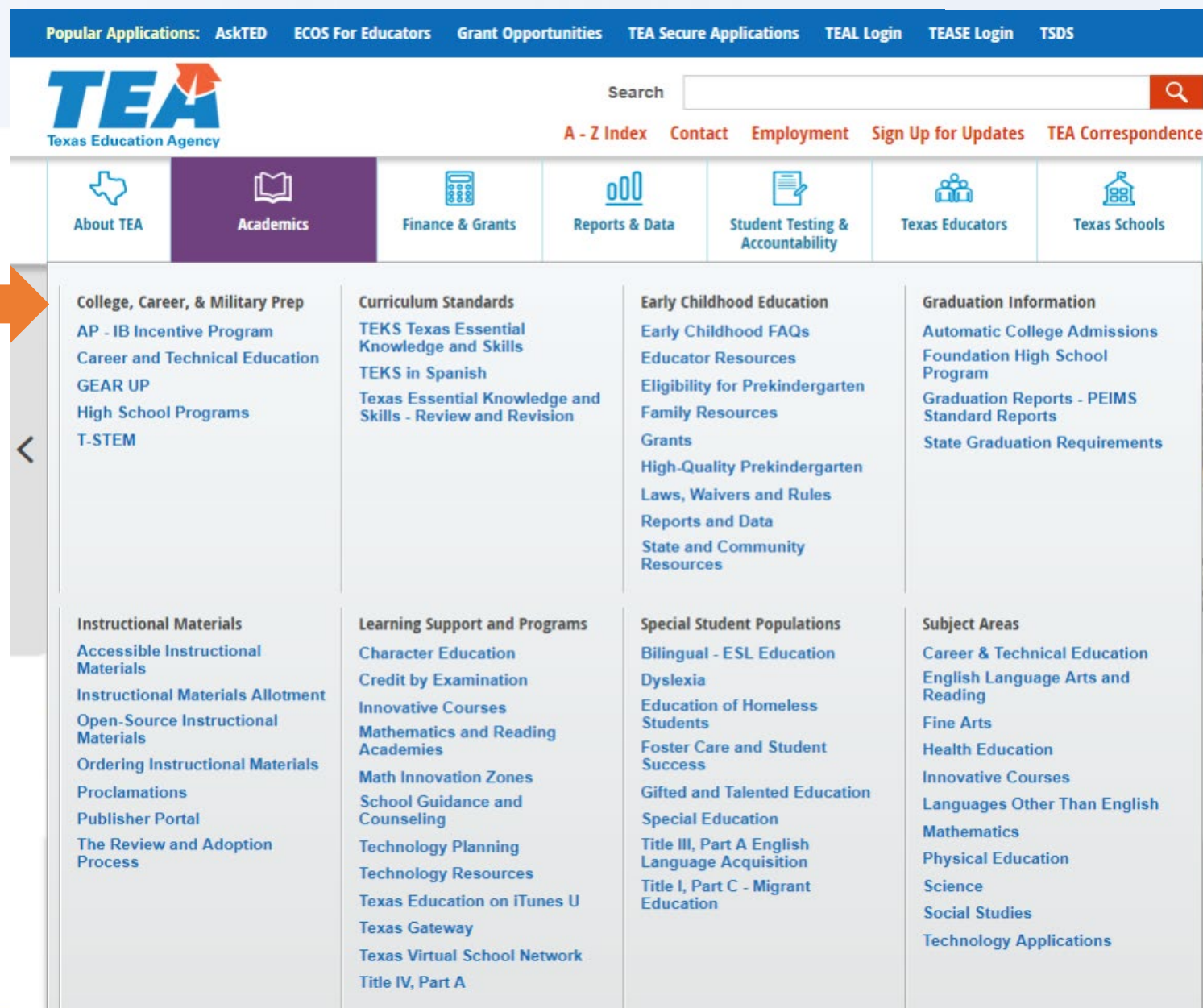
# Next Steps

- TEA Website
- CCMP Listserv
- College, Career, and Military Prep Updates:** [bit.ly/2RBmbfo](http://bit.ly/2RBmbfo)

**Career and Technical Education:** [bit.ly/2Qg4wxi](http://bit.ly/2Qg4wxi)

**College and Career Readiness School Models:** [bit.ly/2rkM5c5](http://bit.ly/2rkM5c5)

- ESC Updates



Popular Applications: [AskTED](#) [ECOS For Educators](#) [Grant Opportunities](#) [TEA Secure Applications](#) [TEAL Login](#) [TEASE Login](#) [TSDS](#)

Search

[A - Z Index](#) [Contact](#) [Employment](#) [Sign Up for Updates](#) [TEA Correspondence](#)

**TEA**  
Texas Education Agency

[About TEA](#)
[Academics](#)
[Finance & Grants](#)
[Reports & Data](#)
[Student Testing & Accountability](#)
[Texas Educators](#)
[Texas Schools](#)

**College, Career, & Military Prep**  
[AP - IB Incentive Program](#)  
[Career and Technical Education](#)  
[GEAR UP](#)  
[High School Programs](#)  
[T-STEM](#)

**Curriculum Standards**  
[TEKS Texas Essential Knowledge and Skills](#)  
[TEKS in Spanish](#)  
[Texas Essential Knowledge and Skills - Review and Revision](#)

**Early Childhood Education**  
[Early Childhood FAQs](#)  
[Educator Resources](#)  
[Eligibility for Prekindergarten](#)  
[Family Resources](#)  
[Grants](#)  
[High-Quality Prekindergarten](#)  
[Laws, Waivers and Rules](#)  
[Reports and Data](#)  
[State and Community Resources](#)

**Graduation Information**  
[Automatic College Admissions](#)  
[Foundation High School Program](#)  
[Graduation Reports - PEIMS](#)  
[Standard Reports](#)  
[State Graduation Requirements](#)

**Instructional Materials**  
[Accessible Instructional Materials](#)  
[Instructional Materials Allotment](#)  
[Open-Source Instructional Materials](#)  
[Ordering Instructional Materials](#)  
[Proclamations](#)  
[Publisher Portal](#)  
[The Review and Adoption Process](#)

**Learning Support and Programs**  
[Character Education](#)  
[Credit by Examination](#)  
[Innovative Courses](#)  
[Mathematics and Reading Academies](#)  
[Math Innovation Zones](#)  
[School Guidance and Counseling](#)  
[Technology Planning](#)  
[Technology Resources](#)  
[Texas Education on iTunes U](#)  
[Texas Gateway](#)  
[Texas Virtual School Network](#)  
[Title IV, Part A](#)

**Special Student Populations**  
[Bilingual - ESL Education](#)  
[Dyslexia](#)  
[Education of Homeless Students](#)  
[Foster Care and Student Success](#)  
[Gifted and Talented Education](#)  
[Special Education](#)  
[Title III, Part A English Language Acquisition](#)  
[Title I, Part C - Migrant Education](#)

**Subject Areas**  
[Career & Technical Education](#)  
[English Language Arts and Reading](#)  
[Fine Arts](#)  
[Health Education](#)  
[Innovative Courses](#)  
[Languages Other Than English](#)  
[Mathematics](#)  
[Physical Education](#)  
[Science](#)  
[Social Studies](#)  
[Technology Applications](#)





# Listening Session

## Designing Statewide Frameworks for Work-Based Learning and STEM

Michelle Sedberry  
STEM Program Specialist  
[michelle.sedberry@tea.texas.gov](mailto:michelle.sedberry@tea.texas.gov)

Shane Thomas  
Work-Based Learning Program Specialist  
[shane.thomas@tea.texas.gov](mailto:shane.thomas@tea.texas.gov)