



Career And Technical Enrollment And Subsequent Employment By Sector

Presentation to the
Education Assessment and Accountability Review Subcommittee by the
Office of Education Accountability
November 12, 2019

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Major Conclusions

- Higher wages for CTE pathway completers in all program areas
- Of the high-wage high-demand (HWHD) program areas:
 - Highest wages for manufacturing, transportation, and construction pathway completers
 - Relatively lower wages for health pathway completers; more completers in health than in any other program area
- Pathway completers in some non-HWHD CTE program areas—especially agriculture—earn much more than health pathway completers
- CTE wage premiums vary by student demographic group

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Presentation Outline

- **Background**
- CTE Pathway Completion And Demand
- Workforce Outcomes
- Conclusions And Future Considerations

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Data Used For The Report

KENTUCKY CENTER FOR STATISTICS

KDE

CTE pathway,
industry certificate/KOSSA,
dual credit, co-op participation,
demographics,
ACT, GPA

CPE

Postsecondary
degrees and
credentials

Workforce Data

Wages
Sector

Linked and
de-identified
KYSTATS

OEA

- 2019 survey of principals in all ATCs, LAVECs, and comprehensive high schools
- Site visits and interviews with superintendents and principals in 4 districts

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Limitations

- Wage data
 - Reveal sector but not occupation
 - Do not indicate full- versus part-time status
- CTE may have benefits not captured by wage data alone
- Wage benefits of college degrees not fully captured in this study

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Career And Technical Education (CTE) High School Indicators

- Career Pathways
 - 172 individual pathways
 - Grouped into 12 program areas in report
 - Graduates completing four courses considered “completers”
- Performance-based assessments
 - Industry certificates
 - State-approved assessments
- Work-based learning
- Dual credit

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Career ready indicators in previous accountability system*



*Previous system required completion of at least two courses in a pathway and also required a career ready academic component.

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Transition ready indicators in current accountability system



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Major CTE Program Areas

PROGRAMS ALIGNED WITH HWHD SECTORS*

- Business
- Construction
- Health
- Information technology (IT)
- Manufacturing
- Transportation and logistics

ADDITIONAL PROGRAM AREAS

- Agriculture*
- Arts/AV
- Human services
(consumer family sciences,
food, education*, etc.)
- Law/public safety
- Retail
- STEM*

* KDE list of HWHD industry certificates revised annually and currently includes certificates aligned with some pathways in these areas

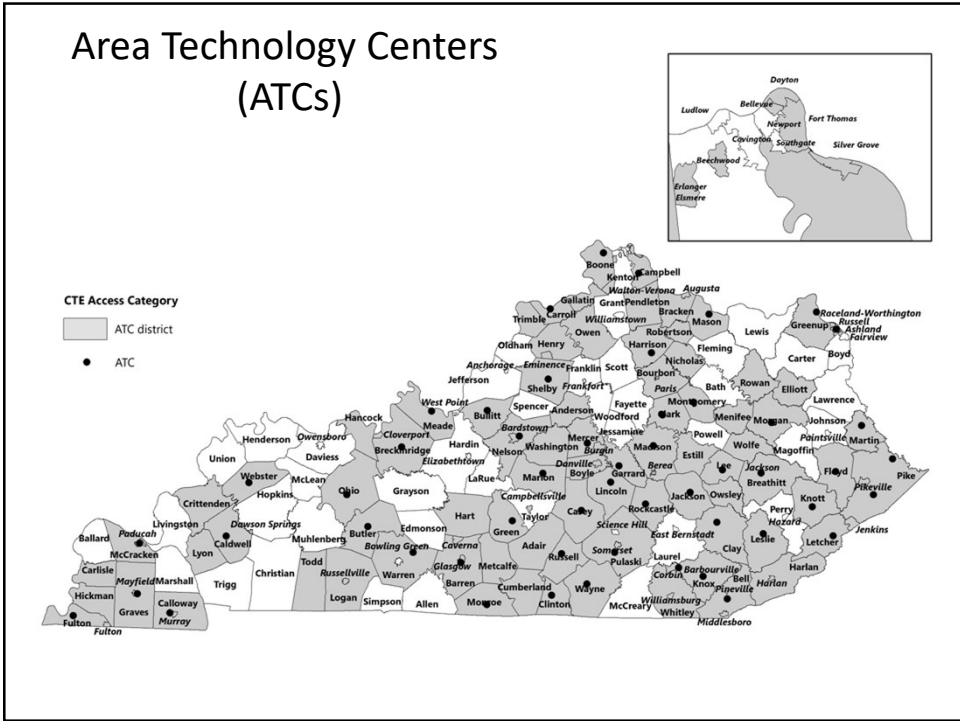
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CTE Delivery

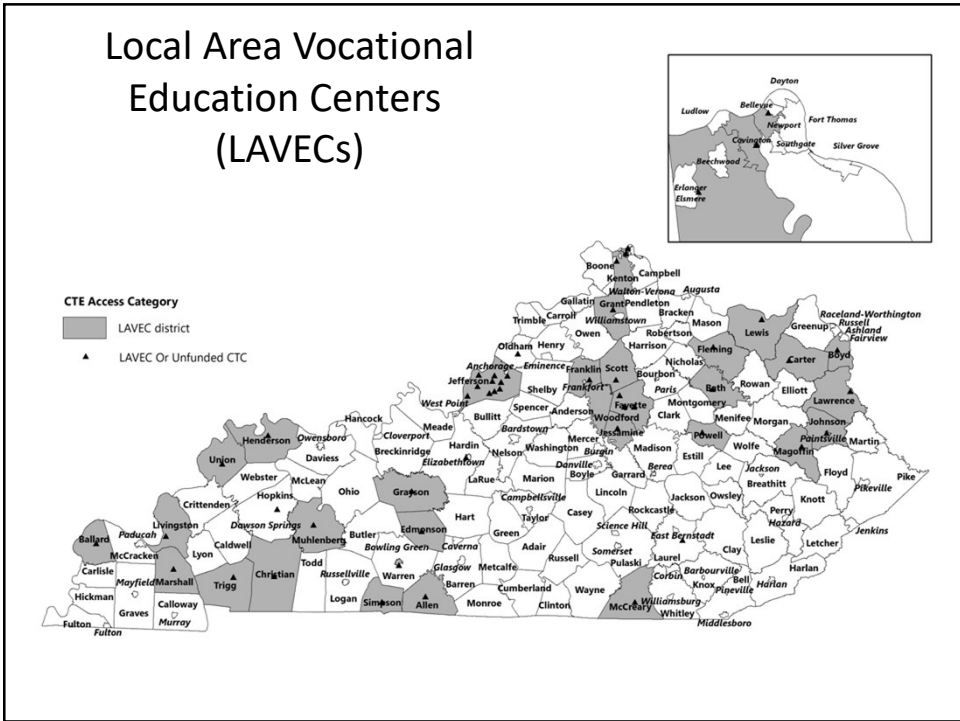
- State-operated Area Technology Centers (ATCs)
 - 53 serving 124 districts
- Local Area Vocational Education Centers (LAVECs)
 - 42 serving 34 districts
- Comprehensive high schools
 - Greatest number of CTE pathway completers
- Other
 - District-funded CTE centers (8)
 - Kentucky Community and Technical College System (KCTCS)

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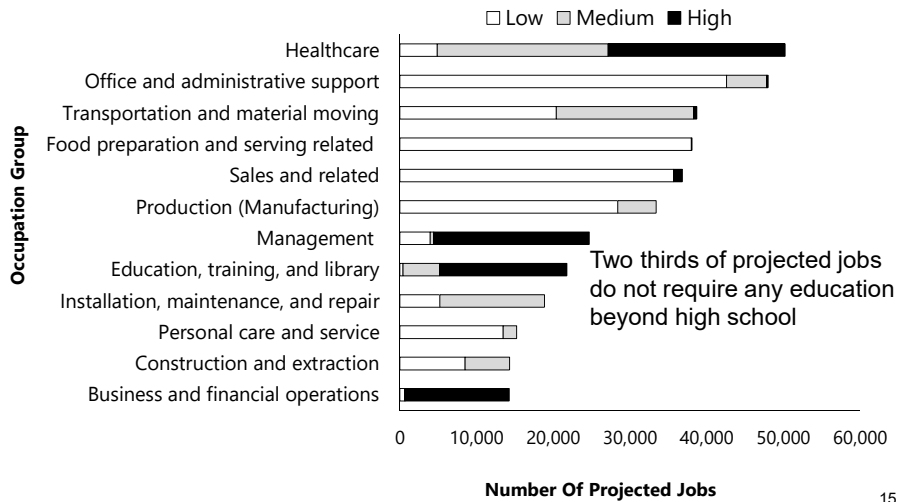
Area Technology Centers (ATCs)



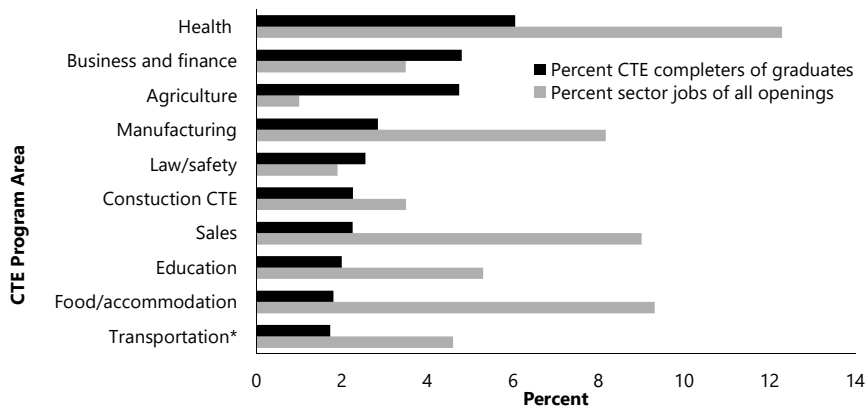
Local Area Vocational Education Centers (LAVECs)



Projected Job Openings 2018-2022 By Major Occupation Group And Skill Level



CTE Pathway Completers 2018 Versus Projected Job Occupations 2018-2022



Note: this slide shows only those CTE areas that align well with major occupation groups reported in the Kentucky Future Skills Report. See full OEA report for pathways completed in all program areas.
*OEA used the installation, maintenance and repair occupation group as the best indication of demand for CTE transportation pathway completers.

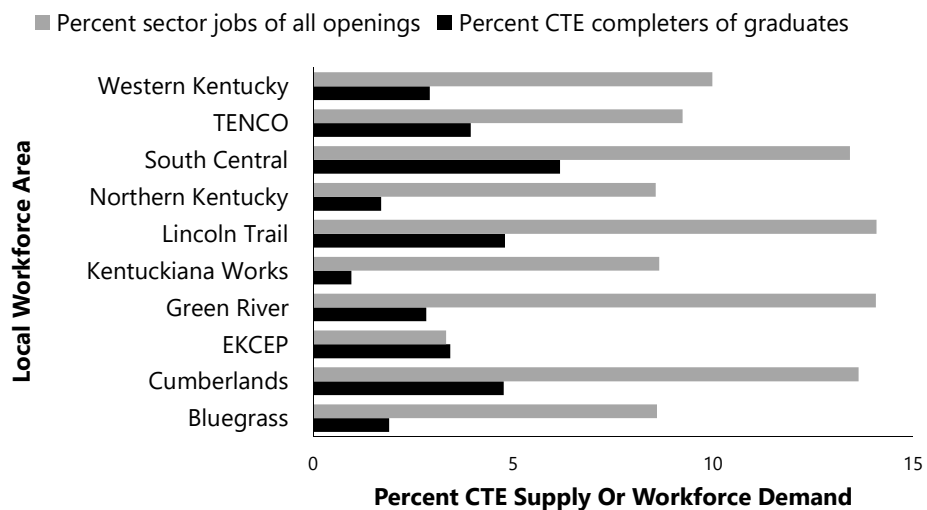
Variation In Pathway Completion Highest-Wage Program Areas

The percentage of graduates completing CTE pathways in manufacturing, transportation and construction varies by:

- Region
- CTE delivery in ATC, LAVEC or comprehensive high school
- Student demographic group

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CTE Manufacturing Completers 2018 And 2018-2022 Projected Demand By Local Workforce Area



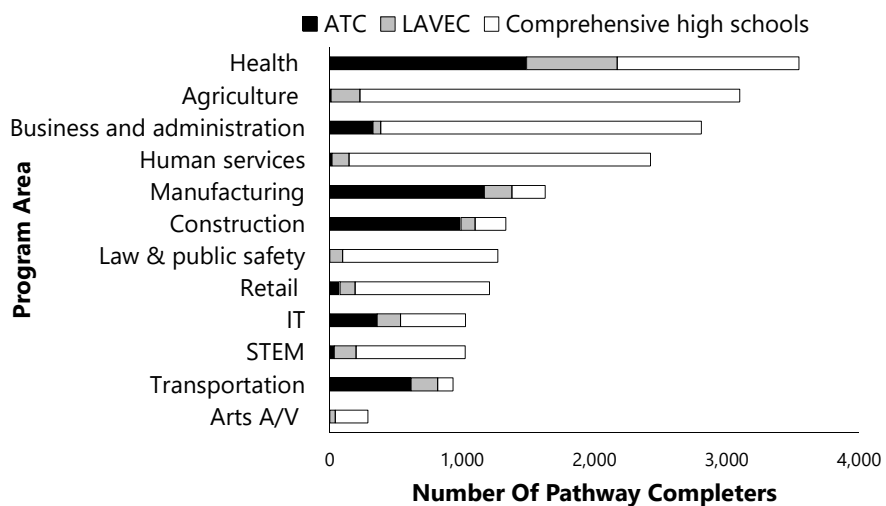
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Factors In Pathways Offered

- Local industry demand
- Cost of supplies and equipment
 - Higher-wage pathways costly
 - Higher-wage pathways concentrated in ATCs
- Availability of qualified teachers
- Student interest
 - New pathways not always well enrolled

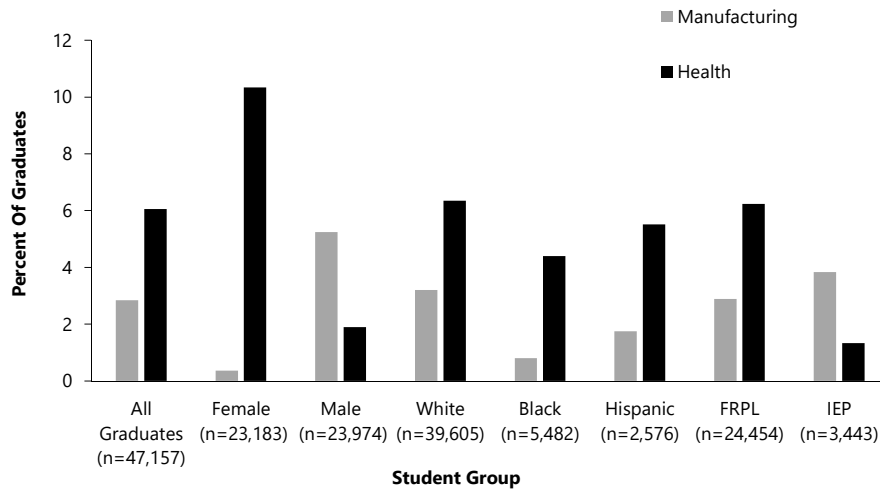
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Pathway Completion And CTE Delivery Location



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Percentage Of All Pathway Completers In Manufacturing Or Health Pathways By Student Demographic Characteristics, 2018



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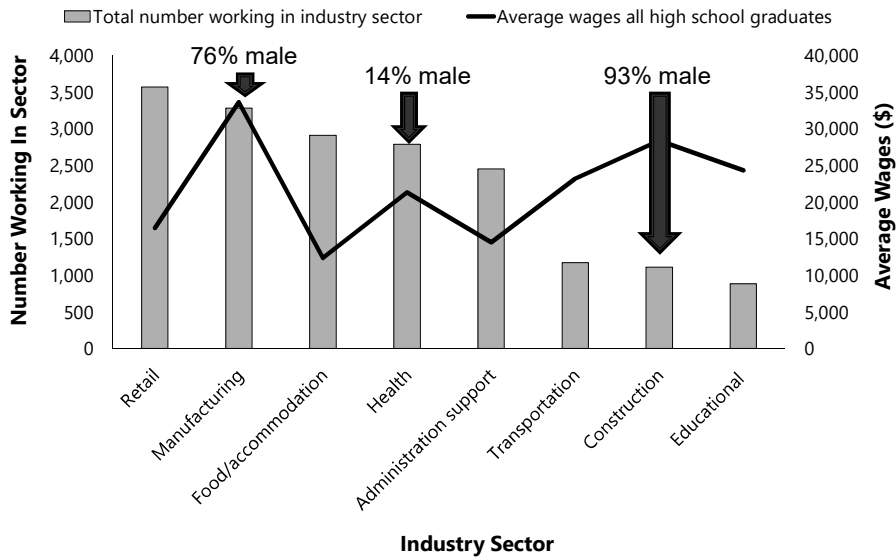
Presentation Outline

Background

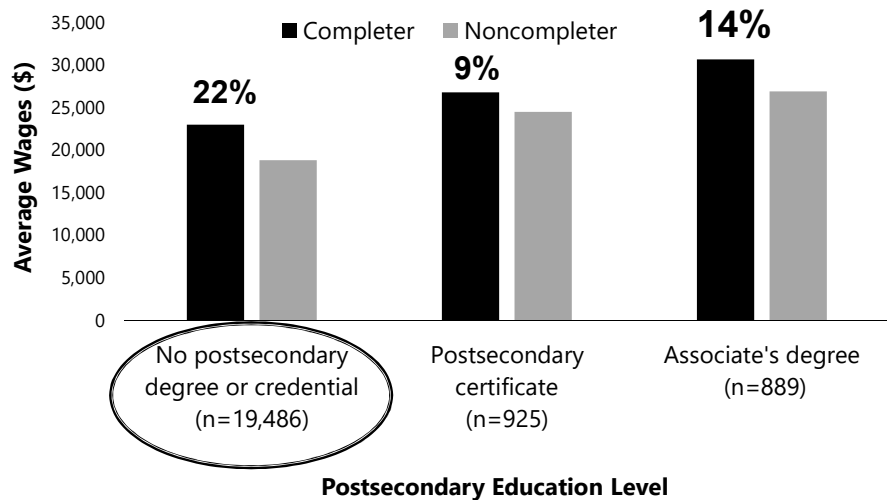
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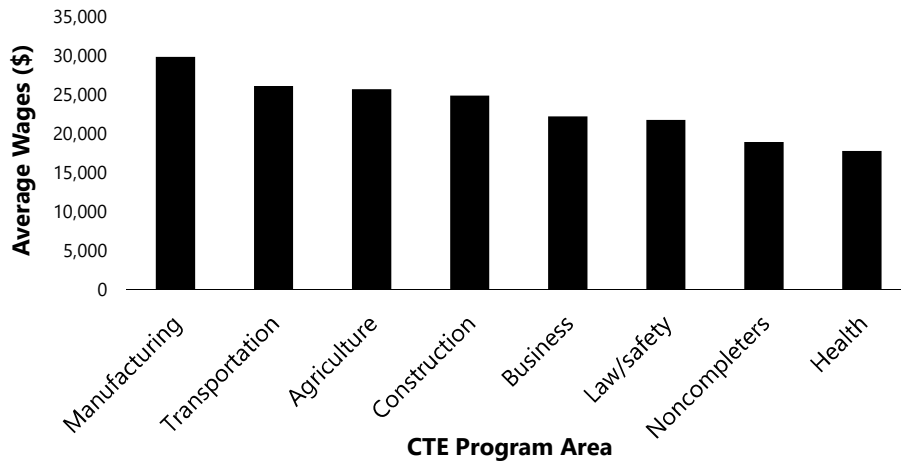
Number Of 2013 Graduates Employed And Average Wages By Industry Sector, 2018



Wages 2013 Graduates By CTE Completion And Postsecondary Education, 2018

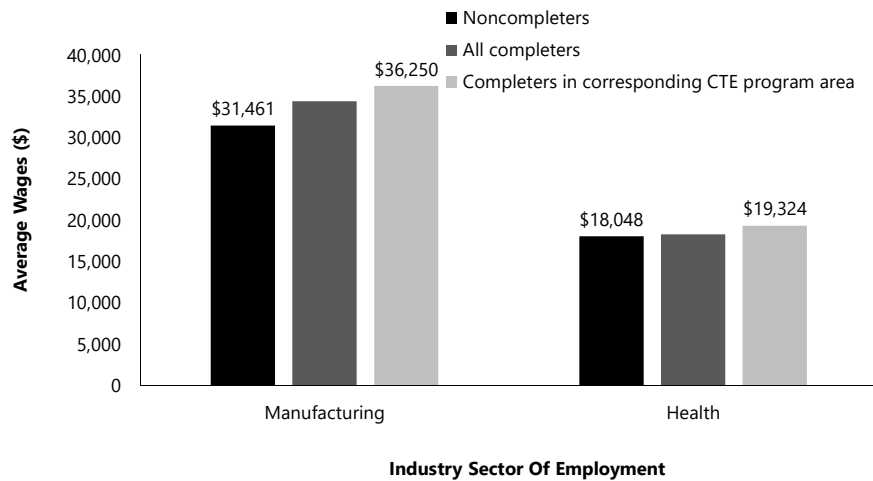


Average Wages Of 2013 CTE Completers With No Postsecondary Credential Or Degree By CTE Program, 2018

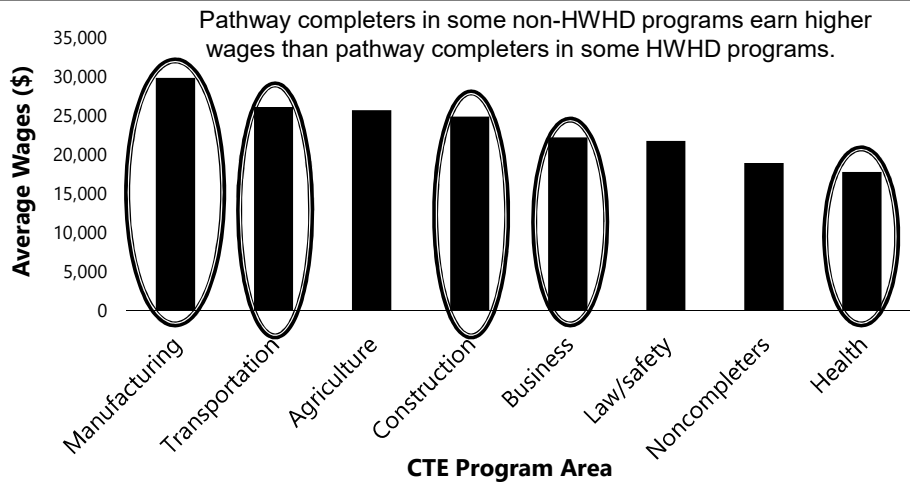


Note: see page 45 of the full report for wages in all program areas.

Average Wages Of 2013 CTE Completers With No Postsecondary Credential Or Degree By CTE Program And Industry Sector, 2018



Average Wages Of 2013 CTE Completers With No Postsecondary Credential Or Degree By CTE Program Area, 2018



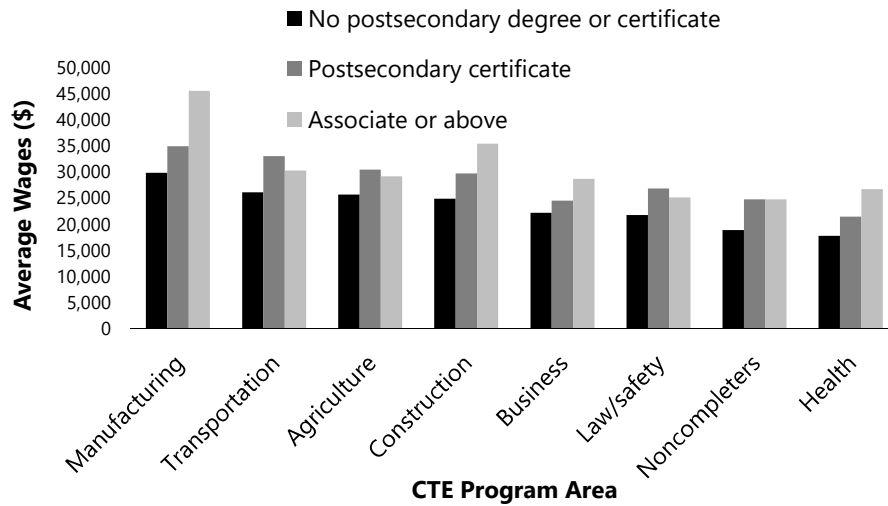
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Agriculture Pathways

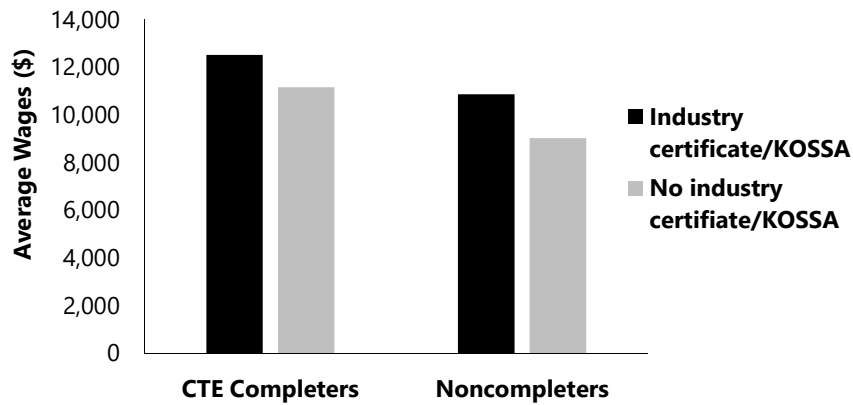
Possible explanations for higher wages:

- May have greater opportunities for work-based learning (WBL)
- Agriculture teachers work 12 months, in order to supervise student clubs and WBL
- Some pathways include technical skills like welding and carpentry that might transfer to other sectors

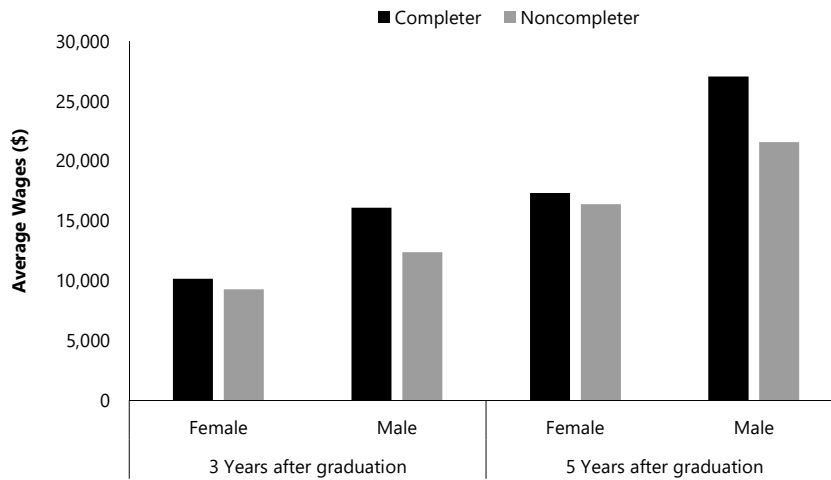
Average Wages Of 2013 CTE Completers By Level Of Education And Program, 2018



Wages Of 2017 Graduates By CTE Completion And Industry Certificate Or KOSSA, 2018



CTE Wage Premiums By Gender, 2013 Graduates No Postsecondary Degree Or Credential



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CTE Wage Premiums By Race, Ethnicity, And FRPL

Student Group	Wages For CTE Completers	Wages For CTE Noncompleters	CTE wage premium
Black	\$15,090	\$12,526	20%
Hispanic	19,657	17,249	14
White	18,671	15,333	22
FRPL	16,994	14,328	19
Not FRPL	20,737	15,944	30

Note: Table includes 2018 wages of 2015 graduates.

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Conclusion

- Clear and unmet demand for workers prepared to work in higher-wage sectors like manufacturing, transportation, and construction
- Program completion in related sectors uneven among regions, CTE delivery types, and student groups
- State investment in health pathways alone insufficient in itself to produce higher-wage workers; higher-wage health jobs required college degrees

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Considerations For CTE Policies And Programs

- Access to higher-wage pathways
 - ATCs versus LAVECs and others
 - Underrepresented student groups
- Local decision making
 - In some cases, non-HWHD pathways may better reflect local needs and be associated with higher wages than HWHD pathways
 - CTE opportunities offered to high school students may not always be aligned with workforce demand
- Use workforce data to evaluate outcomes
 - Program completion and wages
 - Industry and state-approved assessments and wages

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END

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