



PORTLAND PUBLIC SCHOOLS
OFFICE OF TEACHING AND LEARNING

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Date: Tuesday, September 25, 2018

To: The Board of Education, Portland Public Schools

From: Dr. Luis Valentino, Chief Academic Officer, Office of Teaching and Learning

Subject: Career and Technical Education

Portland Public Schools is committed to preparing its students for successful futures. One way is through Career & Technical Educational Programs of Study. CTE programs are a series of courses that help students develop the technical skills, academic knowledge and real-world experiences needed to prepare them for the high-skill, high-demand, high-wage careers of the 21st century and make informed choices about their post-secondary options.

A key component to the success of CTE programs is that students can find connections between their academic coursework and their career goals. Making high school a more relevant, and engaging, experience for students is a key element of our district goals and high school success plan.

The Governor's Future Ready Oregon policy agenda lays out pathways to: a) ensure every Oregon student graduates high school with a plan for their future, and b) provide opportunities for adult Oregonians to "skill-up" and land a better job, one that local businesses need filled.

Oregon's current high school graduation rate in Oregon is 76.7 percent. Portland Public School's current high school graduation rate is 76 percent as well. There are multiple strategies being implemented across the state to improve this rate, including an increase in career and technical education (CTE) programs. According to data compiled by the Oregon Department of Education, CTE is improving the graduation rate across the state with 90 percent of CTE Concentrators (students who take one or more credits in an approved CTE Program of Study) graduating from high school on time. PPS students completing 1 credit in CTE are graduating at a rate of 89 percent.

Technical training and the hands-on skills provided in CTE courses can enhance every student's experience and competitiveness, whether they are interested in pursuing a career in construction, computer science or finance. CTE courses are generally more hands on than traditional academic coursework, and can help improve employer valued skills such as teamwork, problem solving, and communication in students. The benefits of CTE programs go well beyond job training. Students from all backgrounds benefit

from a diversified approach to their education and CTE programs can enrich the educational experience. CTE programs engage ALL students including those who plan to pursue a four year college degree, community college, apprenticeship, trade school or career immediately after high school.

We are providing information on the state of CTE in PPS so the Board of Education can make informed decisions about the modernization of our district high schools, and most immediately, Benson Polytechnic High School. We would like for the board to inform the administration on:

- What career preparation and CTE experiences should every student in PPS have?
- What is the board vision for district-wide CTE programming, facilities and resources?
- Given Benson Polytechnic High School's role as a combined CTE and comprehensive high school, what should the career preparation and CTE experience be for Benson students?

Attachments:

1. PPS CTE Power-point Slides
2. PPS CTE Programming matrix
3. ODE CTE POS Program Quality Rubric
4. Oregon Employment Department Data
5. Future Ready Oregon Executive Summary
6. Career & Technical Education in Oregon Infographic
7. National Career Clusters



PORTLAND PUBLIC SCHOOLS | CAREER AND TECHNICAL EDUCATION

Career Technical Education in Portland Public Schools



Portland Public Schools
September 25, 2018

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Objective for Today

We are providing information on the state of CTE in PPS so the Board of Education can make informed decisions about the modernization of our district high schools, and most immediately, Benson Polytechnic High School.

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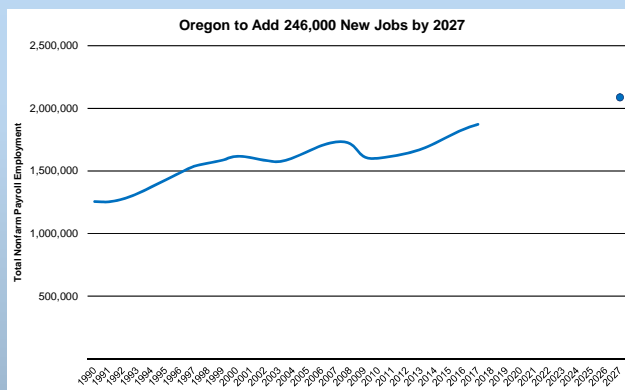


Labor Market Employment Data

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Oregon's total employment is expected to grow by 12 percent



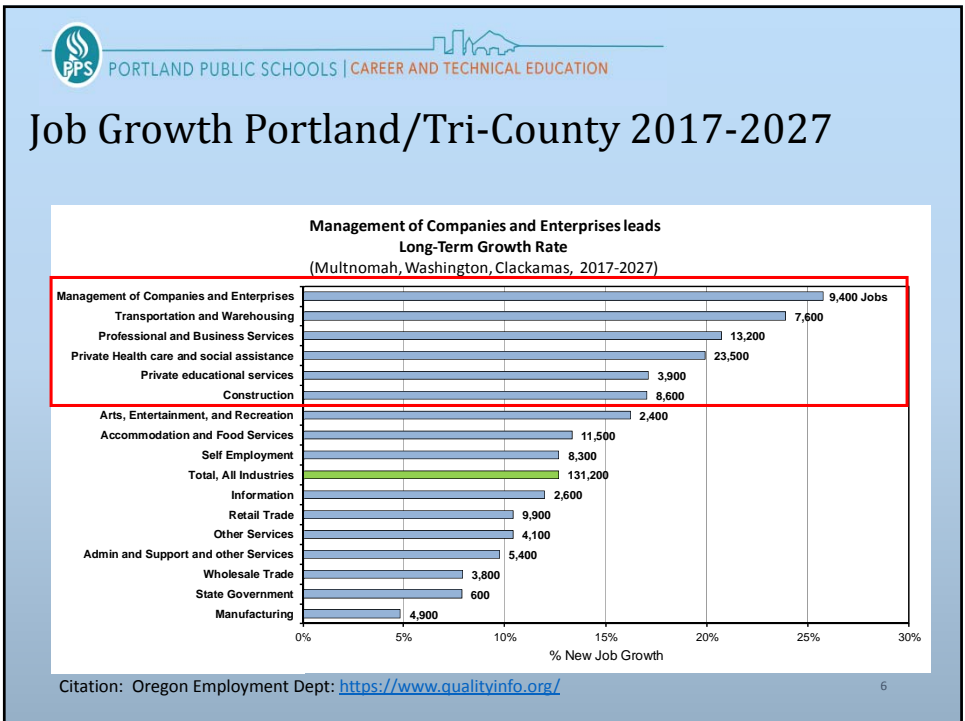
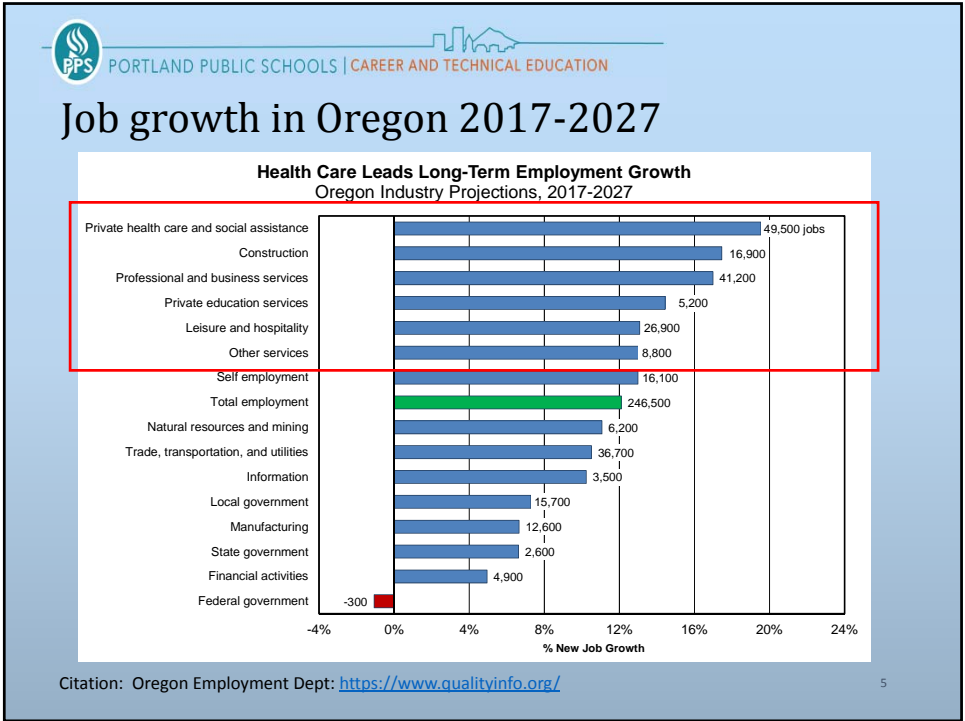
Private-sector growth of 212,000 jobs (13%)


Slower growth in government, adding 18,000 jobs (6%)

Additional 16,000 self-employed Oregonians (13%)

Citation: Oregon Employment Dept: <https://www.qualityinfo.org/>

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Top Occupations by Total Projected Job Openings Oregon 2017-2027

Typical Entry-Level Education More than HS Diploma

	2017 Employment	2027 Projected Job Openings (new + replacement)	Typical Entry-Level Education
General & Operations Managers	33,577	33,958	Bachelor's degree
Truck Drivers, Heavy and Tractor Trailer	24,289	29,676	Postsecondary training (non-degree)
Bookkeeping, Accounting & Auditing Clerks	25,127	28,820	Postsecondary training (non-degree)
Registered Nurses	37,353	26,635	Bachelor's degree
Education, Training & Library Workers, All Other	20,989	22,299	Bachelor's degree
Nursing Assistants	13,269	17,273	Postsecondary training (non-degree)
Business Operations Specialists, All Other	15,352	16,669	Bachelor's degree
Medical Assistants	11,166	16,624	Postsecondary training (non-degree)
Managers, All Other	18,485	16,431	Bachelor's degree
Accountants & Auditors	13,613	15,081	Bachelor's degree
Software Developers, Applications	13,253	13,991	Bachelor's degree
Real Estate Agents	13,253	13,150	Postsecondary training (non-degree)
Substitute Teachers	10,907	12,964	Bachelor's degree
Elementary School Teachers, Except Special Education	12,105	9,901	Bachelor's degree
Preschool Teachers, Except Special Education	6,992	8,409	Associate's degree


Citation: Oregon Employment Dept: <https://www.qualityinfo.org/>



CTE National Career Clusters

Agriculture, Food & Natural Resources	Education & Training	Hospitality & Tourism	Manufacturing
Architecture & Construction	Finance	Human Services	Marketing
Arts, A/V Technology & Communications	Government & Public Administration	Information Technology	Science, Technology, Engineering & Mathematics
Business Management & Administration	Health Science	Law, Public Safety, Corrections & Security	Transportation, Distribution & Logistics


Citation: Advance CTE: <https://careertech.org/career-clusters>



CTE Programming: **Hard to Fill**

Agriculture, Food & Natural Resources (3)	Education & Training	Hospitality & Tourism (3)	Manufacturing
Architecture & Construction (7)	Finance	Human Services	Marketing
Arts, A/V Technology & Communications	Government & Public Administration	Information Technology	Science, Technology, Engineering & Mathematics
Business Management & Administration	Health Science (4)	Law, Public Safety, Corrections & Security	Transportation, Distribution & Logistics (2)


Citation: Advance CTE: <https://careertech.org/career-clusters> 9



CTE Programming: **High Growth**

Agriculture, Food & Natural Resources	Education & Training	Hospitality & Tourism	Manufacturing
Architecture & Construction (7)	Finance	Human Services	Marketing
Arts, A/V Technology & Communications	Government & Public Administration	Information Technology (8)	Science, Technology, Engineering & Mathematics (4)
Business Management & Administration (4)	Health Science (4)	Law, Public Safety, Corrections & Security	Transportation, Distribution & Logistics


Citation: Advance CTE: <https://careertech.org/career-clusters> 10

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CTE Programming: **High Wage**

Agriculture, Food & Natural Resources	Education & Training (4)	Hospitality & Tourism	Manufacturing
Architecture & Construction	Finance	Human Services	Marketing
Arts, A/V Technology & Communications	Government & Public Administration	Information Technology	Science, Technology, Engineering & Mathematics (4)
Business Management & Administration (4)	Health Science (4)	Law, Public Safety, Corrections & Security	Transportation, Distribution & Logistics (2)


Citation: Advance CTE: <https://careertech.org/career-clusters> 11

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CTE Programming: **High Demand**

Agriculture, Food & Natural Resources	Education & Training	Hospitality & Tourism (3)	Manufacturing
Architecture & Construction (7)	Finance	Human Services	Marketing
Arts, A/V Technology & Communications	Government & Public Administration	Information Technology	Science, Technology, Engineering & Mathematics
Business Management & Administration (4)	Health Science (4)	Law, Public Safety, Corrections & Security	Transportation, Distribution & Logistics (2)


Citation: Advance CTE: <https://careertech.org/career-clusters> 12



CTE Programming: **High Skill**

Agriculture, Food & Natural Resources	Education & Training (4)	Hospitality & Tourism	Manufacturing
Architecture & Construction (7)	Finance	Human Services	Marketing
Arts, A/V Technology & Communications	Government & Public Administration	Information Technology (8)	Science, Technology, Engineering & Mathematics
Business Management & Administration (4)	Health Science (4)	Law, Public Safety, Corrections & Security	Transportation, Distribution & Logistics

Citation: Advance CTE: <https://careertech.org/career-clusters> 13



CTE Programs of Study

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CTE Programs of Study

Business Management & Administration

Business Management

Architecture & Construction

Architecture Construction Electrical

Hospitality & Tourism

Culinary

Arts, A/V Technology & Communications

Digital Media Radio Mass Communications Graphic Design Applied Arts Video Production

Health Science

Dental Bio-Medical Nursing Emergency Services

Information Technology

Computer Science

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CTE Pathway

Cluster area

↓

Program of Study

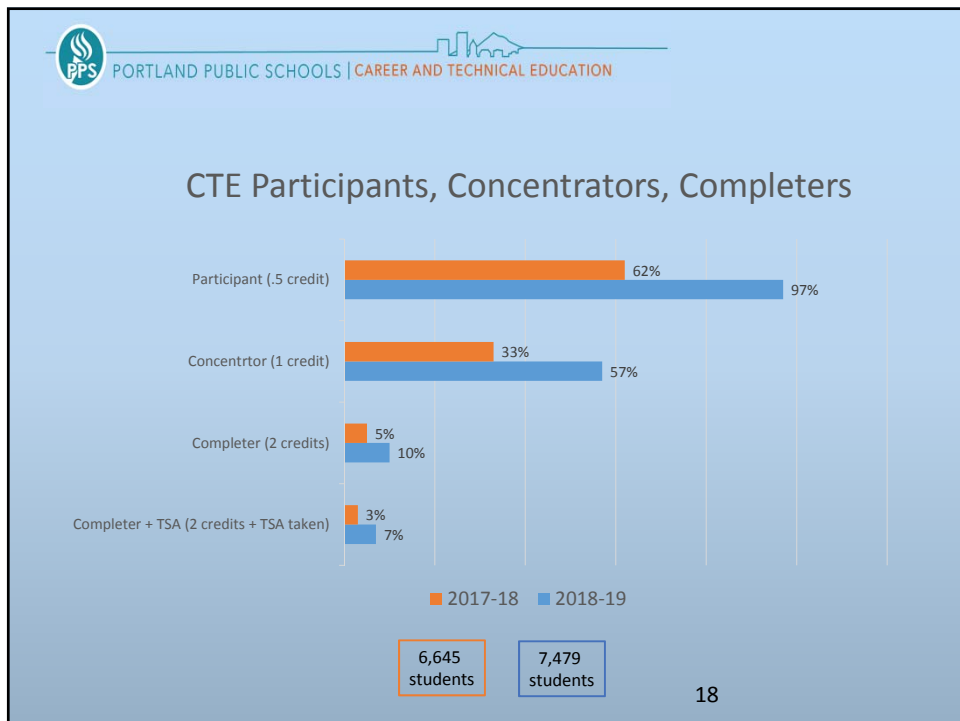
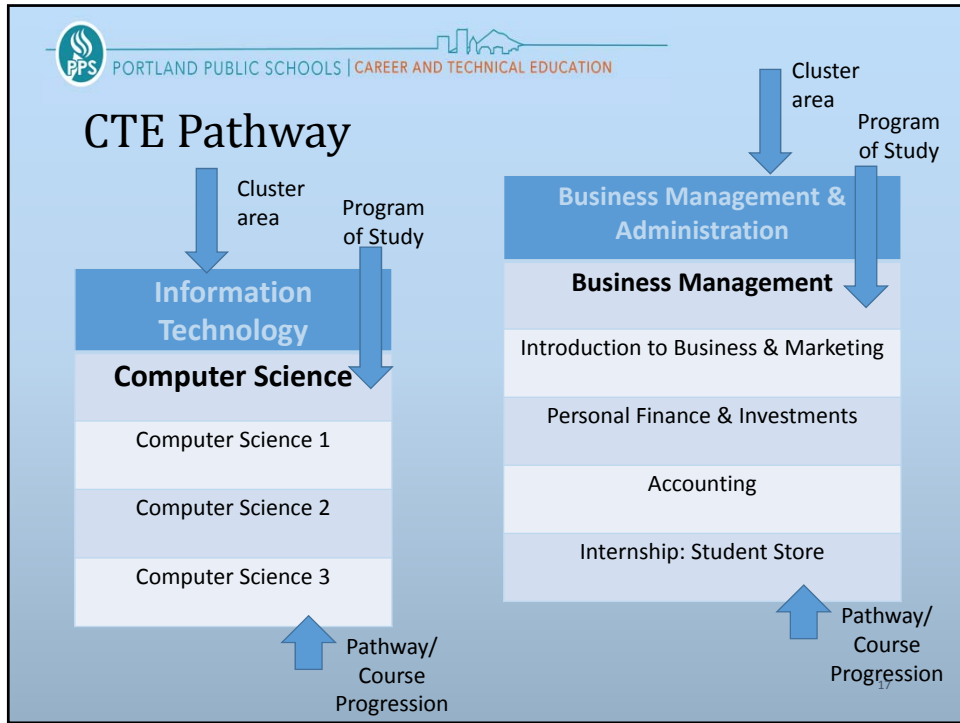
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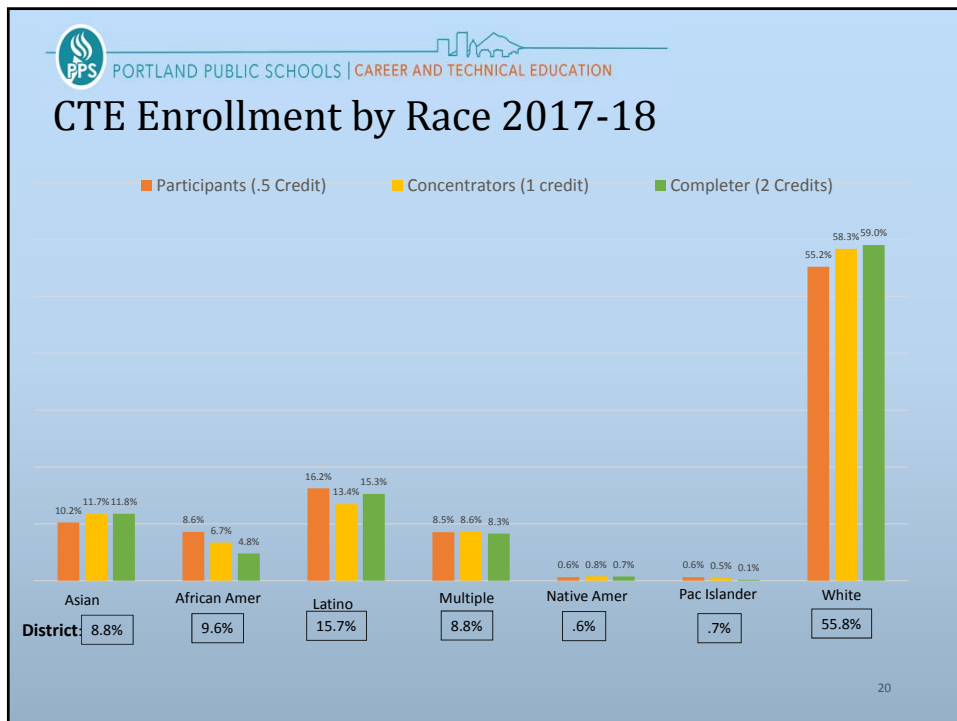
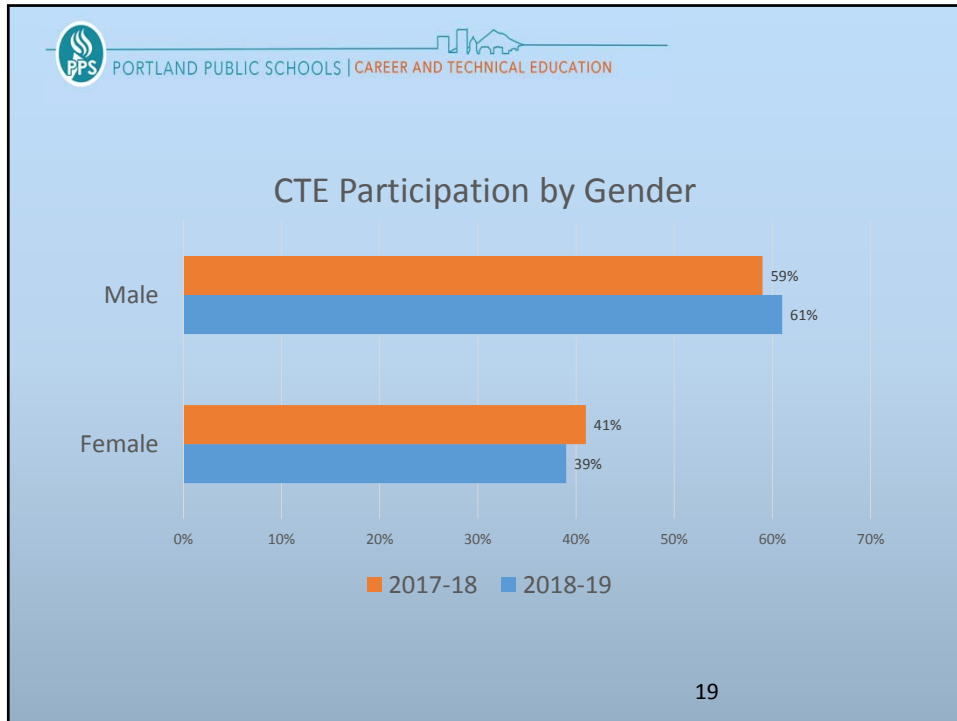
Architecture & Construction		
Architecture	Construction	Electrical
Drafting/Architecture 1	Tech/Geometry	Electrical/Electronics 1
Drafting/Architecture 2	Construction Tech 2	Electrical 2
Architectural Design 3	Construction Tech 3	Electric 3


↑

Pathway/
Course
Progression

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PPS CTE Graduation Rates

Students completing 1 credit in CTE

	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17
PPS Students: <i>All</i>	63%	67%	70%	74%	75%	76%
CTE Students: <i>All</i>	84%	87%	89%	91%	90%	89%
CTE Students: <i>American Indian</i>	76%	54%	80%	83%	100%	100%
CTE Students: <i>Asian</i>	97%	96%	94%	99%	97%	96%
CTE Students: <i>African American</i>	75%	76%	87%	94%	93%	86%
CTE Students: <i>Hispanic</i>	83%	88%	93%	88%	85%	88%
CTE Students: <i>White</i>	82%	87%	91%	89%	81%	90%

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Technical Skills Assessments


Year	State Goal (take TSA)	PPS Performance (TAKE TSA)	PPS Performance (PASS TSA)
2011-12	60%	35.6%	Not available
2012-13	70%	37.9%	Not available
2013-14	70%	53.3%	Not available
2014-15	70%	60.2%	86.3%
2015-16	73%	74.7%	88.0%
2016-17	76%	81.9%	80.9%
2017-18	Not yet released by ODE	Not yet released by ODE	78.5%

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CTE Funding


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CTE Students & Funding Options

Participant	Concentrator	Completer	Completer	Completer	Completer
.5 Credit	1 Credit	2+ Credits	3+ Credits	3+ Credits AND Underserved	3+ Credits AND Industry Credential
<ul style="list-style-type: none"> • Perkins • Measure 98 	<ul style="list-style-type: none"> • Perkins • Measure 98 	<ul style="list-style-type: none"> • Perkins • Measure 98 	<ul style="list-style-type: none"> • Perkins • Measure 98 • OR Pathways (\$300/student) 	<ul style="list-style-type: none"> • Perkins • Measure 98 • OR Pathways (\$300/student) • OR Pathways Underserved (\$300/ student) 	<ul style="list-style-type: none"> • Perkins • Measure 98 • OR Pathways (\$300/student) • OR Pathways Underserved (\$300/ student) • OR Pathways Industry Credential (\$300/ student)

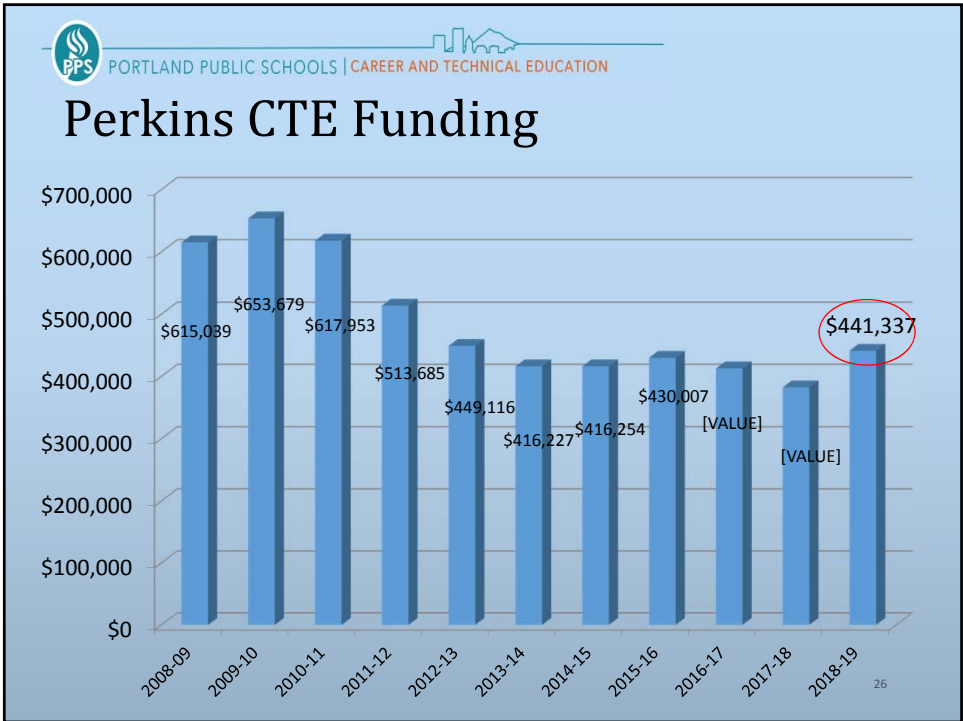
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Perkins CTE Funding

- Federal grant awarded to state
- State awards funds to school districts
- Awards are determined by formula based upon **city census poverty** data NOT by the number of CTE programs offered

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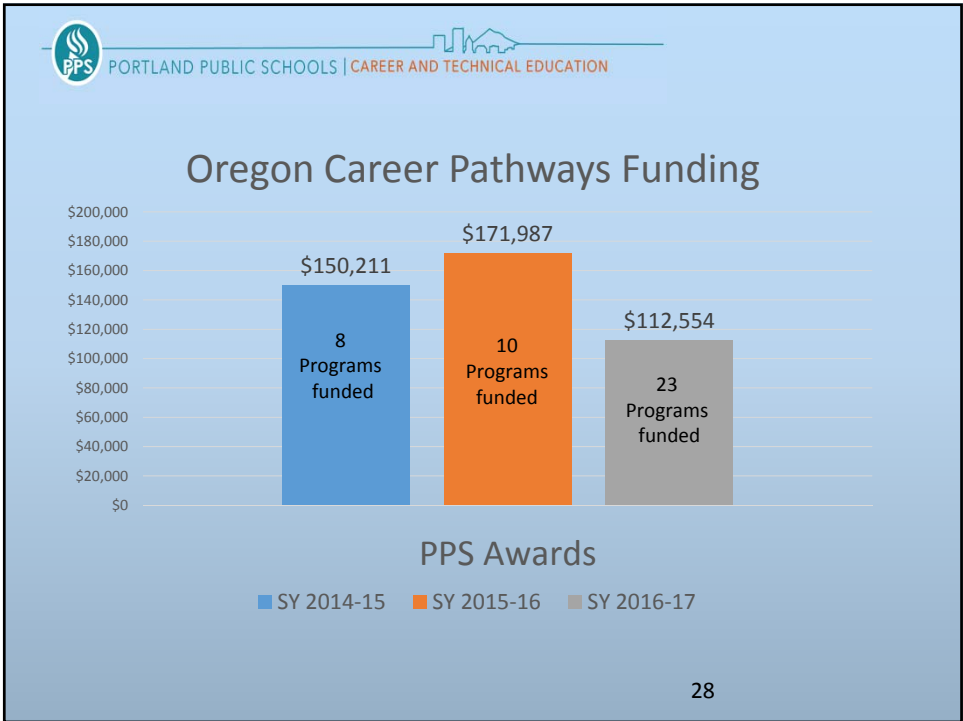



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Career Pathways CTE Funding

- Funding approved by Oregon Legislature
- Total **funding available fluctuates** based upon the number of eligible recipients across the state
- Funds are restricted; may only be used for the specific CTE Program

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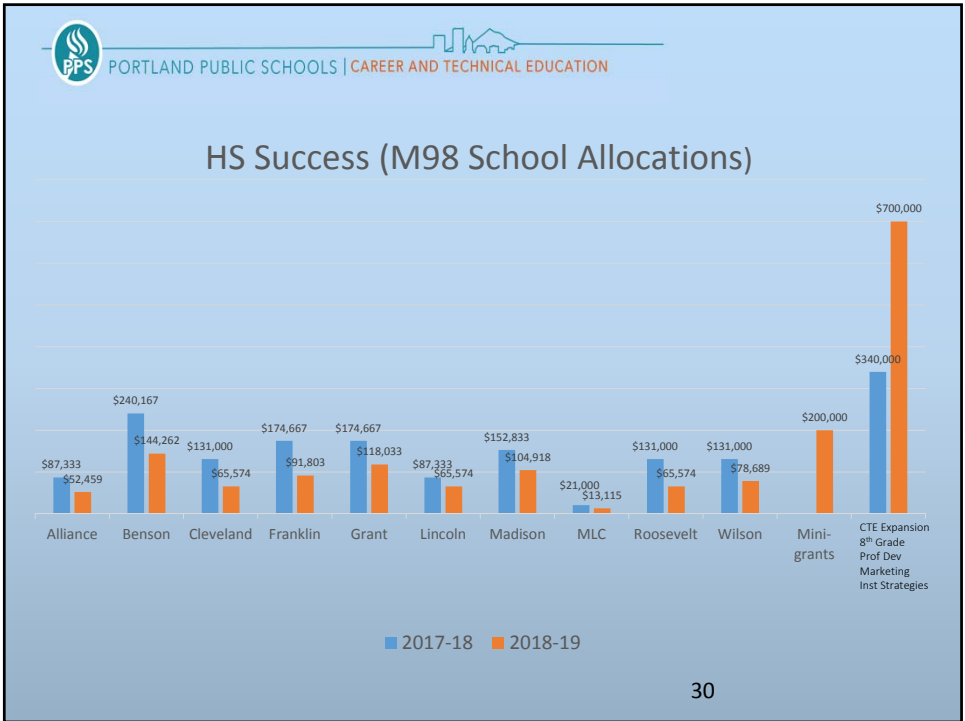




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HS Success Focus Areas (M98 Funding)

- Dropout Prevention
 - \$4 million
 - Student Engagement Coaches
 - Freshman Success
- College Level Education Opportunities
 - \$1 million
 - Dual Credit
 - Senior Inquiry
- Career & Technical Education
 - \$1 million
 - Equity formula allocations to schools

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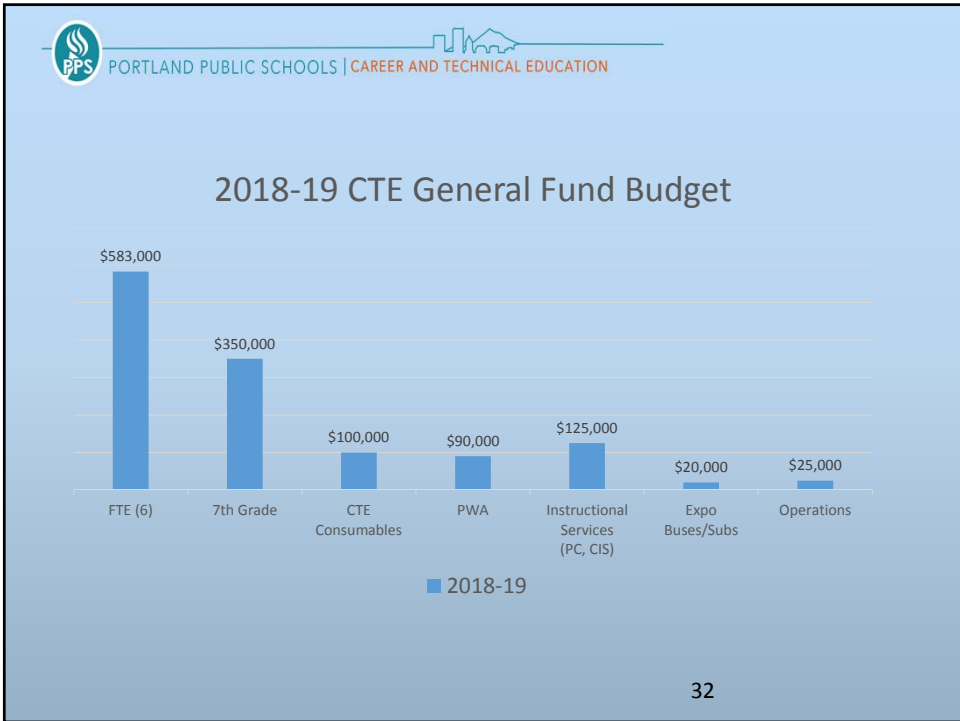
General Funds


- \$100K CTE Consumables
 - No other funding source allows consumables except Pathways

- \$350K 7th Grade Career Exploration
 - Providers, Venues, Transportation, Subs, Lunches

- \$90K Portland Workforce Alliance
 - Career Related Learning Experiences (CRLEs)

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HS Strategic Plan

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PORTLAND PUBLIC SCHOOLS

High School 4-Year Strategic Plan (2017-2021)

Revised: April 9, 2018

THEORY OF ACTION

IF we

- Invest in professional learning so that all school staff are able to implement culturally responsive instructional and data-informed practices,
- Offer equitable access to CTE, college level coursework and career pathways, aligned with postsecondary education & training,
- Are accountable to our industry, postsecondary, community, family, and most importantly, student partnerships; AND,
- Provide appropriate student supports and interventions,
- Center our work in relationships, grounded by our beliefs in racial equity

THEN all students will graduate from high school prepared for college and career, and we will eliminate opportunity gaps for historically underserved students.

VISION FOR SYSTEM IMPACT

ELIMINATE THE OPPORTUNITY GAP for historically underserved students including racially, culturally & linguistically diverse students, and students with disabilities.

ALL PPS STUDENTS are graduating from high school prepared for college and career.

SUPPORTING STRATEGIES AND ACTIONS (All strategies leverage Measure 5B funds)

<p>Implement teacher-led culturally relevant pedagogy & curriculum</p> <ul style="list-style-type: none"> - Hold annual curriculum camp to align culturally relevant curriculum and develop scope and sequence, key learning targets, and assessment strategies - Support teachers in implementing culturally relevant pedagogy and curriculum <p>Improve school climate & reduce chronic absenteeism</p> <ul style="list-style-type: none"> - Implement socio-emotional core program including identifying root cause and addressing chronic absenteeism through a culturally specific, mental health lens - Implement Positive Behavioral Intervention and Supports (PBIS)/ Multi-tiered System of Supports (MTSS) with fidelity - Implement 8th-9th grade transition planning with students and their families - Engage families and community as partners in supporting student success 	<p>Prepare all students for postsecondary success</p> <ul style="list-style-type: none"> - Define postsecondary success and implement universal systems for each high school to ensure all students are ready to successfully transition to a postsecondary option - Enhance college level coursework access/ offerings and increase enrollment through awareness with communication campaign - Ensure all students, especially ESL and Special Education students, are supported to be on-track for graduation - Develop and establish system to ensure every student has a Student Plan and Profile - Communicate postsecondary and CTE course opportunities and supports to staff, students and families <p>Systemically implement grade level instructional teams</p> <ul style="list-style-type: none"> - Provide embedded release time for ongoing staff collaboration and professional development (PD) to ensure freshmen on-track model is implemented with fidelity 	<p>Enhance CTE quality & sustain programs</p> <ul style="list-style-type: none"> - Expand CTE programming at schools with limited or no programs - Enhance CTE program access and offerings through awareness with communication campaign and increase enrollment - Implement rigorous program improvement process including learning walks, program renewals and scoring guides - Develop process to prioritize CTE program areas eligible for refresh - Develop process for recruiting, certifying and retaining CTE teachers <p>Improve central office responsiveness</p> <ul style="list-style-type: none"> - Establish continuous improvement cycle including evaluation of the High School Strategic Plan and Measure 5B implementation - Establish forum for regular principal communication and feedback - Improve processes for industry, postsecondary and community, especially communities of color, to partner with PPS - Implement intervention data tracking system
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OUTCOME GOALS (Embedded in High School Continuous Achievement Plans)

<p>1. CULTURALLY RELEVANT PEDAGOGY & CURRICULUM</p> <p>Accelerate academic achievement and student engagement with a focus on racially and linguistically historically underserved students and students with disabilities as measured by 6% growth of 4 and 5 year graduation & completion rates AND reduce gap for Historically Underrepresented students by 10%</p>	<p>2. COLLEGE & CAREER READINESS</p> <p>Prepare all students for postsecondary success through increasing participation in CTE and College Level Coursework as measured by 5% increase in student completion of at least 2.0 CTE credits and by 50% for Historically Underrepresented students AND by 5% increase in student enrollment in 2.0 college level credits and by 10% for Historically Underrepresented students.</p>	<p>3. STUDENT ENGAGEMENT</p> <p>Implement MTSS to improve school climate and reduce chronic absenteeism for all students, especially historically underserved students who are at risk of dropping out and not being ready for postsecondary success as measured by 5% growth in Regular Attenders AND reduce gap for Historically Underrepresented by 10%</p>
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Portland Public Schools is an affirmative action and equal opportunity employer.

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Benson Polytechnic HS

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Benson Tech – Flagship CTE School

Program Area	# of Teachers
Architecture/Drafting	2
Computer Science	1
Construction	2
Design & Applied Arts	1
Digital Media	3
Electrical	2
Engineering	1
Health Sciences	5
Manufacturing	1
Radio	1
Transportation/Auto	2

Benson CTE Students by Race

Race	2017-18 (%)	2018-19 (%)
Female	41%	39%
Male	59%	61%
Asian	10%	9%
Black	15%	13%
Lation	25%	25%
Multiple	10%	9%
Native Am	1%	0%
Pac Islander	1%	1%
White	38%	42%

■ 2017-18 ■ 2018-19

958 students 1,039 students

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Benson Tech


- Offers CTE programs in clusters that are also offered at other schools in the district:
 - Architecture & Construction
 - Arts, AV, Communication
 - Health Sciences
 - Information Technology
 - Manufacturing
 - Engineering
- Other Opportunities at Benson Tech
 - Dual Credit
 - Pre-apprenticeship Program
 - Signed agreement with Oregon Institute of Technology
 - Engineering POS received \$200K from Jim Piro
 - Construction POS builds houses

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Next Steps

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ODE CTE High Quality Rubric

CTE POS Program Quality Rubric 

Element	Level 1 – Planning (classes)	Level 2 - Emerging (startup)	Level 3 – Implementing (Approved POS)	Level 4 (Quality program)
Partnerships Actively engages employer and educator partners to develop, enhance, and support the CTE program in a manner that is sustainable.	Partnerships not established. Classes are based on interest and strengths of students and teachers. No program support of partners.	Partnerships are informal with partners involved in program design and development. Program supports partners by helping students become aware of career pathways associated with the partners.	Partnerships are somewhat formalized with partners involved in program design, development, and implementation. Program supports partners by opening opportunities for partners to provide career-related activities such as Career Related Learning Experiences, job shadows, mentorships, etc.	Partnerships are formalized with agreements with partners involved in program design, development, implementation, and evaluation. Program supports partners through participation in partner activities such as community college advisory committees and local workforce investment board meetings.
Engaged Learning Engages students through instructional strategies that are relevant, authentic, and meet the needs and interests of all students	Instruction is teacher-centered where students generate answers to teacher questions. Student learning is not connected to aspects of school and community resources. Assessment are not connected to important industry-based standards.	Instruction uses a project-based approach with projects designed by the teacher. Student learning is occasionally connected to aspects of school and community resources. Assessments address important industry-based standards.	Instruction uses a project-based approach with projects designed by teachers using input from students. Student learning is frequently connected to aspects of school and community resources. Assessments address important industry-based standards and provide feedback to students and teachers resulting in improved practice.	Instruction uses a project-based approach with projects defined by student career interests and student/community needs. Student learning in CTE dissolves boundaries between school and community. Assessment are tailored to student interest and address important industry-based standards, providing feedback to students and teachers resulting in improved practice.

Oregon Department of Education | October 2017
The CTE brand logo, brand-positioning, theme, and brand extensions are the property of Advancer CTE
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Integrate ODE High Quality CTE Rubric

Program Enhancement Opportunities

<ul style="list-style-type: none"> • Partnerships 	<ul style="list-style-type: none"> • Engaged Learning 	<ul style="list-style-type: none"> • Coherent Curriculum
<ul style="list-style-type: none"> • CTE Specific Professional Development 	<ul style="list-style-type: none"> • Career Development 	<ul style="list-style-type: none"> • Education for Employability
<ul style="list-style-type: none"> • Rigorous Integrated Content 	<ul style="list-style-type: none"> • Credentials 	<ul style="list-style-type: none"> • Continuous Improvement
<ul style="list-style-type: none"> • Access & Equity 	<ul style="list-style-type: none"> • Facilities & Equipment 	

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For Board Consideration

- What career and CTE experiences should every PPS students have?
- What is your vision for district-wide CTE programming, facilities, and level of resources?
- Given Benson Polytechnic High School's role as a combined CTE and comprehensive high school, what should the experience be for Benson students?

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Contact Information

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HS State-Approved CTE Programs of Study - 2018-19

Updated 9/16/2018

Legend

Labor Market

Information **1 - Hard to Fill** **2 - High Growth** **3 - High Wage** **4 - High Demand** **5 - High Skill**

Citation: Oregon Employment Dept: <https://www.qualityinfo.org>

Students access at
PCC Cascade or
PCC Swan Island

Career Clusters	Alliance Meek	Alliance Benson	Benson	Cleveland	Franklin	Grant	Jefferson	Lincoln	Madison	MLC	Roosevelt	Wilson
Natural Resources	Natural Resources 1				Natural Resources* 1				Sustainable Ag 1			
Architecture & Construction			Architecture 1 2 4 5 Construction 1 2 4 5 Electrical 1 2 4 5	Construction 1 2 4 5	Construction 1 2 4 5	Constuction 1 2 4 5	Electrician Millwright HVAC Maintenance		Construction 1 2 4 5		Construction 1 2 4 5	Construction 1 2 4 5
Arts, AV, Communication	Digital Media		Digital Media Radio Design Applied Arts	Digital Media Mass Comm	Video Production	Design Applied Arts Multi Med Theater Digital Media Audio Engineering	Multimedia Prof Musician	Mass Comm Design Applied Arts	Digital Media Design Applied Arts		Mass Comm Multi Med Theater	Digital Media* Video Production* Audio Engineering
Business & Management					Business Mgmt 2 3 4 5	Business Mgmt 2 3 4 5		Business Mgmt 2 3 4 5		Business Mgmt 2 3 4 5		
Education & Training					Education 3 5				Education 3 5		Education* 3 5	Education 3 5
Finance												
Gov & Public Administration												
Health Services			Health Sciences 1 2 3 4 5			Health Sciences 1 2 3 4 5	Ophthalmic Medical Terminology Medical Assisting		Health Sciences 1 2 3 4 5			Health Sciences 1 2 3 4 5
Hospitality & Tourism				Hospitality/Culinary 1 4	Hospitality/Culinary 1 4			Hospitality/Culinary 1 4				
Human Resources												
Information Technology			Computer Science 2 5	Computer Science 2 5	Computer Science 2 5	Computer Science 2 5		Computer Science 2 5	Computer Science 2 5		Computer Science 2 5	Computer Science 2 5
Law Public Safety Security							Fire Protection					
Manufacturing	Manufacturing 2 3		Manufacturing 2 3		Manufacturing 2 3							
Marketing Sales				Marketing*								Marketing
STEM			Engineering 2 3			Engineering* 2 3			Engineering 2 3		Engineering 2 3	
Transporation Logistics	Auto 1 3 4		Auto 1 3 4									
Athletic & Outdoor												
Total CTE Programs	4	0	11	6	8	9		5	8	1	6	8
Active in 2018-19	4	0	11	5	7	8		5	8	1	5	6

* Program on hold 2018-19; ODE allows programs to remain on hold for up to 3 years

HS State-Approved CTE Programs of Study 2012-13

Career Clusters	Alliance Meek	Alliance Benson	Benson	Cleveland	Franklin	Grant	Jefferson	Lincoln	Madison	MLC	Roosevelt	Wilson
Natural Resources	Natural Resources								Sustainable Ag			
Architecture & Construction			Construction Electrical		Construction							
Arts, AV, Communication	Digital Media		Digital Media Radio									Digital Media
Business & Management					Business Management							
Education & Training												
Finance					Finance							
Gov & Public Administration												
Health Services			Health Sciences						Health Sciences			
Hospitality & Tourism												
Human Resources												
Information Technology												
Law Public Safety Security												
Manufacturing	Manufacturing		Manufacturing		Manufacturing							
Marketing Sales				Marketing								
STEM												
Transportation Logistics	Auto/Transportation		Auto/Transportation									
Athletic & Outdoor												
Total CTE Programs	4		7	1	4				2			1

CTE POS Program Quality Rubric

Element	Level 1 – Planning (classes)	Level 2 - Emerging (startup)	Level 3 – Implementing (approved POS)	Level 4 (Quality program)
<p>Partnerships</p> <p>Actively engages employer and educator partners to develop, enhance, and support the CTE program in a manner that is sustainable.</p>	<p>Partnerships not established. Classes are based on interest and strengths of students and teachers.</p> <p>No program support of partners.</p>	<p>Partnerships are informal with partners involved in program design and development.</p> <p>Program supports partners by helping students become aware of career pathways associated with the partners.</p>	<p>Partnerships are somewhat formalized with partners involved in program design, development, and implementation.</p> <p>Program supports partners by opening opportunities for partners to provide career-related activities such as Career Related Learning Experiences, job shadows, mentorships, etc.</p>	<p>Partnerships are formalized with agreements with partners involved in program design, development, implementation, and evaluation.</p> <p>Program supports partners through participation in partner activities such as community college advisory committees and local workforce investment board meetings.</p>
<p>Engaged Learning</p> <p>Engages students through instructional strategies that are relevant, authentic, and meet the needs and interests of all students</p>	<p>Instruction is teacher-centered where students generate answers to teacher questions.</p> <p>Student learning is not connected to aspects of school and community resources.</p> <p>Assessment are not connected to important industry-based standards.</p>	<p>Instruction uses a project-based approach with projects designed by the teacher.</p> <p>Student learning is occasionally connected to aspects of school and community resources.</p> <p>Assessments address important industry-based standards.</p>	<p>Instruction uses a project-based approach with projects designed by teachers using input from students.</p> <p>Student learning is frequently connected to aspects of school and community resources</p> <p>Assessments address important industry-based standards and provide feedback to students and teachers resulting in improved practice.</p>	<p>Instruction uses a project-based approach with projects defined by student career interests and student/community needs.</p> <p>Student learning in CTE dissolves boundaries between school and community.</p> <p>Assessment are tailored to student interest and address important industry-based standards. providing feedback to students and teachers resulting in improved practice.</p>

CTE POS Program Quality Rubric



Element	Level 1 – Planning (classes)	Level 2 - Emerging (startup)	Level 3 – Implementing (approved POS)	Level 4 (Quality program)
<p>Coherent Curriculum</p> <p>Aligns to industry-recognized standards and sequenced to prepare students for their next steps.</p>	<p>One or more courses are offered that potentially align with industry-recognized standards and prepare students for their next education and career steps.</p> <p>Courses are not consistently offered and there is no plan to work toward a CTE Program of Study.</p> <p>No connection to related postsecondary education.</p>	<p>Program is working toward a full sequence of curriculum that is aligned with industry-recognized standards. Courses are partially sequenced to prepare students for their next education and career steps.</p> <p>A minimum of 1 high school credit is consistently offered with a plan to work toward a CTE Program of Study.</p> <p>Program has identified possible post-secondary alignment.</p>	<p>Full implementation of curriculum aligned to industry-recognized standards and taught in sequenced courses to prepare students for a postsecondary credential and career.</p> <p>A minimum of 2 high school credits are offered in an approved CTE Program of Study</p> <p>Program is aligned to post-secondary opportunities through collaboration.</p>	<p>Curriculum aligned to industry-recognized standards and taught in sequenced courses to prepare students for a postsecondary credential and career is fully implemented and an institutionalized, integral part of the school’s CTE offerings.</p> <p>A minimum of 3 high school credits are offered in an approved CTE Program of Study.</p> <p>Program provides post-secondary articulation.</p>
<p>CTE Specific Professional Development</p> <p>Promotes instructor professional growth that aligns with long-term program goals.</p>	<p>No evidence that professional development is linked to teaching practices in CTE courses.</p> <p>No CTE professional development plan.</p> <p>Professional development goals, plans, and participation are loosely tied to CTE.</p>	<p>Limited evidence that professional development is linked to teaching practices in CTE courses.</p> <p>CTE professional development is evident but may not be linked to a formal plan.</p> <p>Professional development goals, plans, and participation are loosely tied to documented CTE program goals.</p>	<p>Regular evidence that professional development is linked to improvement of teaching practices in the CTE program.</p> <p>A CTE professional development plan is clearly documented.</p> <p>Professional development goals, plans, and participation are somewhat aligned to documented CTE program goals.</p>	<p>Clear evidence that professional development is linked to innovation and development of quality teaching practices in the CTE program.</p> <p>A CTE professional development plan is clearly documented and was developed using input from partners.</p> <p>Professional development goals, plans, and participation are clearly aligned to documented CTE program goals.</p>

CTE POS Program Quality Rubric



Element	Level 1 – Planning (classes)	Level 2 - Emerging (startup)	Level 3 – Implementing (approved POS)	Level 4 (Quality program)
<p>Career Development</p> <p>Provides accurate and timely information that will help students identify pathways to future careers.</p>	<p>Occasional career development activities are available to support students in exploring career options and opportunities.</p> <p>Personalized education and career plan exists but are mostly reflective; No career development tools and activities are used</p> <p>Students are not provided with information on CTE programs and activities, post-high school application procedures and related career opportunities</p>	<p>Limited career development activities are available to support students in exploring career options and opportunities.</p> <p>Limited implementation of a personalized education and career plan; Some career development tools and activities are used</p> <p>Students are provided limited information on CTE programs and activities, post-high school application procedures and related career opportunities</p>	<p>Career development activities are available coordinated to support students in exploring career options and opportunities.</p> <p>Most CTE students have a personalized education and career plan; Career development tools are used regularly</p> <p>Most CTE students are provided information on CTE programs and activities, post-high school application procedures and related career opportunities</p>	<p>A system of comprehensive career development is coordinated and sequenced to promote and support the career decision making and planning of all students both prior to entering and during the program of study.</p> <p>Each CTE student in the program of study has a personalized, multi-year education and career plan, utilizes career development tools and activities that reflect student interests, preferences and abilities, and informs course selection and planning for further education and careers.</p> <p>Students in the program of study and their parents/guardians, as appropriate, are provided accurate and timely information on: CTE programs and activities, postsecondary options and post-high school application procedures, and related career opportunities.</p>

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CTE POS Program Quality Rubric



Element	Level 1 – Planning (classes)	Level 2 - Emerging (startup)	Level 3 – Implementing (approved POS)	Level 4 (Quality program)
<p>Cont.</p> <p>Career Development</p> <p>Provides accurate and timely information that will help students identify pathways to future careers.</p>	<p>CTE teachers and guidance, counseling and advisement professionals do not collaborate</p>	<p>CTE teachers and guidance, counseling and advisement professionals collaborate on a limited basis</p>	<p>Most CTE teachers and guidance, counseling and advisement professionals collaborate to provide information to students about CTE programming</p>	<p>CTE teachers collaborate with guidance, counseling and advisement professionals to ensure access to current CTE program information and training, regional occupation trends, and current career information resources in order to assist students in education, career planning and decision making.</p>
<p>Education for Employability</p> <p>Builds student employability skills through student leadership and work-based learning.</p> <p>--CTSO</p> <p>--EMPLOYABILITY SKILLS</p>	<p>Students learn basic information and academic content</p> <p>No student organizations are active within content area</p> <p>Limited leadership opportunities</p> <p>Limited inclusion of employability skills</p>	<p>Teachers identify and create curriculum that helps students develop employability skills</p> <p>Student leadership organizations are identified and instructor/advisor is working towards establishing local chapter</p> <p>Instructor informed about CTSO opportunities and leadership opportunities exist</p> <p>Discussion of employability skills</p>	<p>Program explicitly incorporates employability skills into the CTE curriculum</p> <p>Student leadership organization is established and active</p> <p>CTSO not fully integrated into coursework but students are involved in leadership activities</p> <p>Employability skills addressed but not explicit in the curriculum.</p>	<p>Program provides work-based learning opportunities that help students develop and master employability skills</p> <p>Students actively develop leadership skills through student organizations and competitive events</p> <p>CTSO integrated into coursework of the program and promotes development of a leadership portfolio</p> <p>Explicit incorporation of employability skills throughout the CTE curriculum</p>

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CTE POS Program Quality Rubric



Element	Level 1 – Planning (classes)	Level 2 - Emerging (startup)	Level 3 – Implementing (approved POS)	Level 4 (Quality program)
<i>--WORK-BASED LEARNING</i>	Students learn about workplace as part of classroom instruction (speakers, videos, field trips)	Short-term work-based learning opportunities (job shadows, career fairs)	Students have access to long-term work-based learning that is not coordinated (internships)	Clear coordinated process for students to engage in long-term work-based learning (internships).
Rigorous Integrated Content Integrates rigorous technical and academic content.	Students in CTE classes do not have the opportunity to complete rigorous core academic course work that is applicable to career interests. CTE teacher does not integrate core academic content into CTE courses as a natural part of the curriculum.	Students in CTE classes have limited opportunities to complete rigorous core academic course work that is applicable to career interests. CTE teacher occasionally integrates core academic content into CTE courses as a natural part of the curriculum.	Students in CTE classes have numerous opportunities to complete rigorous core academic course work that is applicable to career interests. CTE teacher integrates core academic content into CTE courses as a natural part of the curriculum.	Students in CTE classes complete rigorous core academic course work that is applicable to career interests. CTE and core academic content teachers integrate core academic content into CTE courses through collaboration as a natural part of the curriculum of both core courses and CTE courses.
Credentials Links instruction to meaningful college credit or industry credentials that can lead to high wage and high demand occupations.	Program is in the process of researching appropriate and available certifications.	An appropriate industry credential is identified and available to program completers.	Some program completers earn an industry credential, or combination of credentials, that are approved by ODE.	A high percentage of program completers earn ODE approved industry recognized credentials, or a combination of credentials, that increase their employability in that industry.

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CTE POS Program Quality Rubric



Element	Level 1 – Planning (classes)	Level 2 - Emerging (startup)	Level 3 – Implementing (approved POS)	Level 4 (Quality program)
<p>Continuous Improvement</p> <p>Revises the program of study based on student performance, economic demand, and employer requirements.</p>	<p>LEA data are available. CTE-specific data are not available.</p>	<p>CTE-specific data are collected and submitted.</p> <p>Instruction and program decisions are made regardless of program data</p>	<p>CTE-specific data are collected and submitted.</p> <p>Data are frequently used to inform instructional decisions.</p>	<p>CTE-specific data are collected and submitted.</p> <p>Data are frequently used to inform instructional and programmatic decisions.</p>
<p>Access and Equity</p> <p>Provides all students and their families with appropriate knowledge and experiences to help make informed education and career decisions.</p>	<p>Access to Program of Study is limited.</p> <p>Students in CTE class(es) are not representative of students in the school or district.</p> <p>CTE student outcomes are not equitable; opportunity gaps are reflected among CTE students.</p>	<p>Program of Study is available to all students.</p> <p>Students in Program of Study are somewhat representative of students in the school or district.</p> <p>Some CTE student outcomes are equitable; some opportunity gaps are reflected among CTE students.</p>	<p>Program of Study has identified potential barriers and is designed for all students to succeed.</p> <p>Students in Program of Study are representative of students in the school or district.</p> <p>CTE student outcomes are equitable; there are no opportunity gaps reflected among CTE students.</p>	<p>Programs of Study are a central part of school or district equity strategy. Every student is able to fulfill their potential.</p> <p>Programs of Study positively impact local industry representation.</p> <p>CTE student outcomes are equitable and contribute to the elimination of opportunity gaps in school or district and local industry.</p>

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CTE POS Program Quality Rubric



Element	Level 1 – Planning (classes)	Level 2 - Emerging (startup)	Level 3 – Implementing (approved POS)	Level 4 (Quality program)
<p>Facilities and Equipment</p> <p>Provides students with safe access to facilities and equipment that are appropriate to the type of instruction and reflect workforce needs.</p>	<p>Provides basic facilities and equipment for elective coursework</p> <p>Facilities, equipment and environment do not reflect the diverse needs of ALL students</p> <p>Basic safety and cleanliness standards that are appropriate for a classroom</p>	<p>Provides basic facilities and equipment needs while planning to upgrade to industry standard that are appropriate for workforce needs</p> <p>Facilities, equipment and environment reflect needs of students that are traditional participants in the program</p> <p>Basic safety and cleanliness standards that are appropriate for a classroom while learning and implementing industry guidelines</p>	<p>Provides industry standard facilities and equipment that are appropriate for workforce needs</p> <p>Facilities, equipment, and environment reflect needs of ALL students</p> <p>Teaches and adheres to safety and cleanliness standards that are aligned to industry guidelines</p>	<p>Provides and maintains specialized equipment used to meet industry standard certification and/or local workforce needs</p> <p>Facilities, equipment, and environment reflect needs of ALL students</p> <p>Teaches and adheres to safety and cleanliness standards that are aligned to industry guidelines; gain industry specific certification of compliance</p>

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Oregon's Current Workforce Gaps and Future Workforce Needs

CTE-STEM Network Meeting
August 1, 2018



Support Business · Promote Employment

1

Today's Menu

- [Oregon's Current Workforce Gaps](#)
 - Survey of businesses asking about unfilled job vacancies in 2017
 - Report focuses on difficult-to-fill job vacancies
- [Future Workforce Needs by Industry](#)
 - Industries in 2017 and 2027
- [Future Workforce Needs by Occupation](#)
 - Occupations in 2017 and 2027
 - Job openings due to growth and replacements
 - Educational requirements of occupations



Support Business · Promote Employment

2

Special Report June 2018

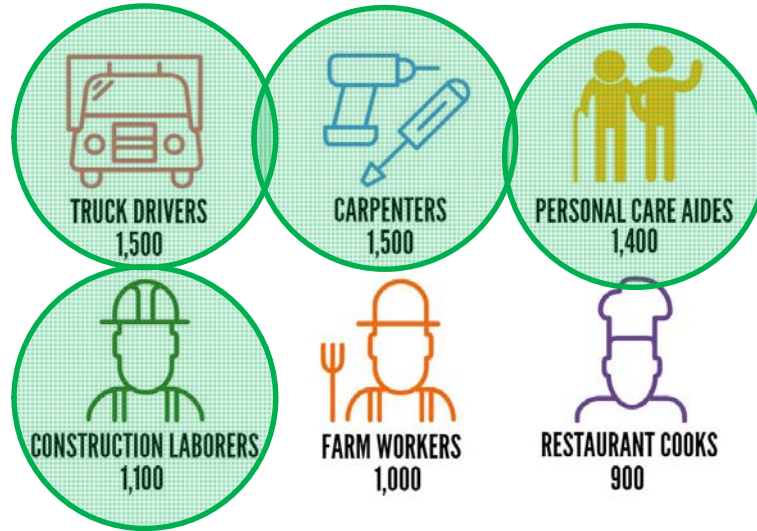


Key Findings

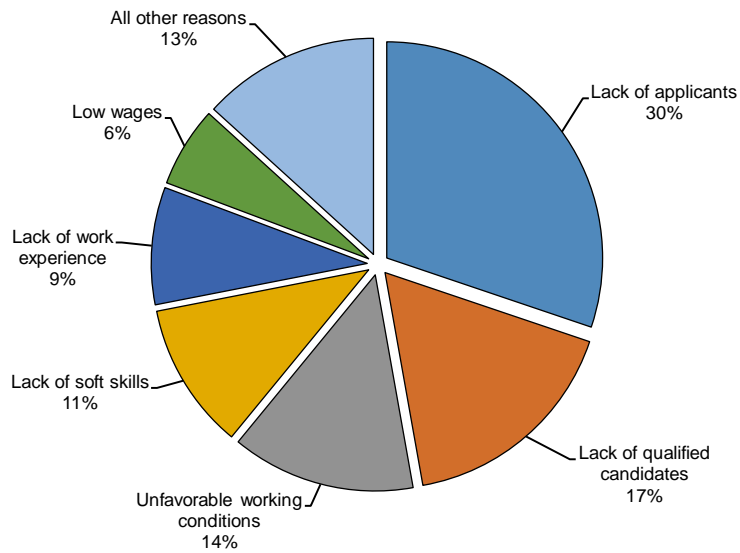
Snapshot of Oregon's Job Vacancies, 2017

	Vacancies	Difficult to Fill	Not Difficult to Fill
Vacancies	60,718	38,691	22,027
Average wage	\$17.82	\$18.28	\$16.62
Full time	77%	77%	75%
Permanent	88%	85%	92%
Require education beyond high school	29%	29%	29%
Require previous experience	57%	67%	40%
Difficult to fill	64%	100%	0%

The Most Difficult-to-Fill Occupations



Employer-Provided Reasons for Difficulty Filling Vacancies in Oregon, 2017



Educational Requirements

Characteristics of Difficult-to-Fill Vacancies by Education Level Requirement, 2017

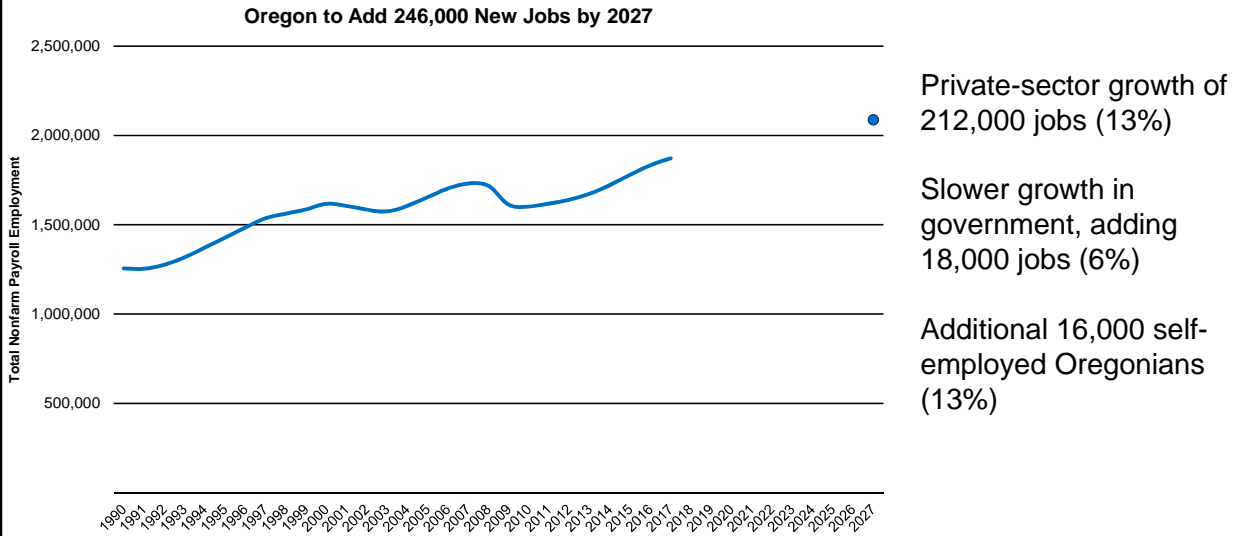
	Difficult-to-Fill Vacancies	Average Wage	Full time	Permanent	Require Previous Experience
All Education Levels	38,691	\$18.28	77%	85%	67%
No requirement	12,889	\$14.57	73%	76%	49%
High school or equivalent	12,850	\$15.30	78%	86%	69%
Postsecondary or associate	7,644	\$22.60	82%	98%	84%
Bachelor's or advanced degree	3,411	\$35.43	85%	94%	94%
Unknown	897	\$20.49	59%	64%	38%



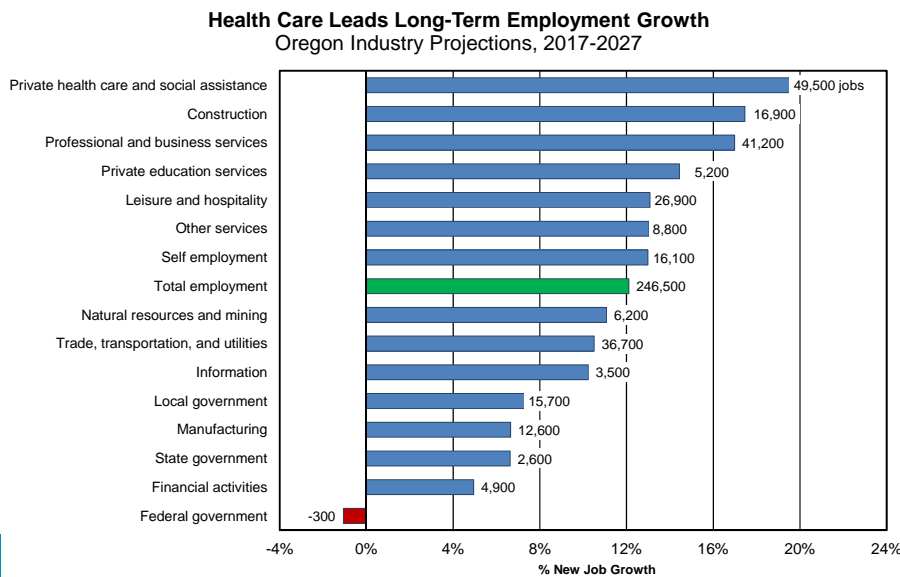
Future Workforce Needs



Oregon's total employment is expected to grow by 12 percent



Health care leads future job growth in Oregon



Private health care and social assistance accounts for one-fifth of all new jobs by 2027.

Construction will be the second-fastest growing sector (17%)

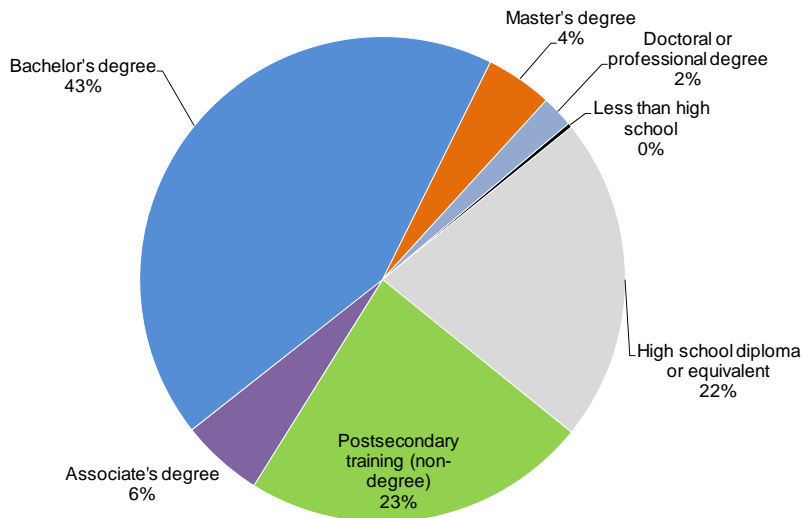
Federal government is the only broad sector expected to decline.

Widespread job opportunities are expected across Oregon's economy

Sector	Replacement Openings		Total Projected Openings, 2017-2027
	Due to Growth	Due to Transfers or Exits	
Oregon	246,014	2,383,309	2,629,323
Health Care and Social Assistance	46,912	284,566	331,478
Software & IT	8,520	38,843	47,363
Wood Product Manufacturing	119	26,692	26,811
Advanced Manufacturing	1,623	49,563	51,186

Projected STEM Job Openings 2017-2027

Oregon



There are projected to be more than 900,000 job openings in occupations considered to be STEM-related between 2017 and 2027.

Many STEM/CTE occupations are Growing Faster Than the State (Oregon) Average

- Oregon occupational employment is projected to grow 12 percent.
- Oregon STEM occupations are projected to grow over 13 percent.
- Non-STEM occupations are projected to grow closer to 11 percent.



Variety among top occupations with higher education levels **Oregon**

Top Occupations by Total Projected Job Openings, 2017-2027
 Typical Entry-Level Education More than High School Diploma

	2017 Employment	Percent Change	Employment Change	Replacement Openings	Total Openings	Typical Entry-Level Education
General and Operations Managers	33,577	14.8%	4,971	28,987	33,958	Bachelor's degree
Truck Drivers, Heavy and Tractor-Trailer	24,289	11.1%	2,699	26,977	29,676	Postsecondary training (non-degree)
Bookkeeping, Accounting, and Auditing Clerks	25,127	3.1%	766	28,054	28,820	Postsecondary training (non-degree)
Registered Nurses	37,353	16.7%	6,247	20,388	26,635	Bachelor's degree
Education, Training, and Library Workers, All Other	20,989	12.3%	2,583	19,716	22,299	Bachelor's degree
Nursing Assistants	13,269	12.1%	1,610	15,663	17,273	Postsecondary training (non-degree)
Business Operations Specialists, All Other	15,352	13.5%	2,073	14,596	16,669	Bachelor's degree
Medical Assistants	11,100	20.5%	3,107	10,437	10,024	Postsecondary training (non-degree)
Managers, All Other	18,485	14.8%	2,722	13,600	16,431	Bachelor's degree
Accountants and Auditors	13,613	16.5%	2,250	12,831	15,081	Bachelor's degree
Software Developers, Applications	13,253	32.6%	4,317	9,674	13,991	Bachelor's degree
Real Estate Sales Agents	12,881	8.2%	1,057	12,093	13,150	Postsecondary training (non-degree)
Substitute Teachers	10,907	7.2%	788	12,176	12,964	Bachelor's degree
Elementary School Teachers, Except Special Education	12,105	8.7%	1,055	8,846	9,901	Bachelor's degree
Preschool Teachers, Except Special Education	6,992	16.1%	1,122	7,287	8,409	Associate's degree
Market Research Analysts and Marketing Specialists	5,914	29.2%	1,724	6,448	8,172	Bachelor's degree
Financial Managers	7,340	26.7%	1,961	6,031	7,992	Bachelor's degree
Secondary School Teachers, Except Special and Career/Technical Education	9,462	9.5%	896	6,732	7,628	Bachelor's degree
Management Analysts	7,101	16.5%	1,174	6,442	7,616	Bachelor's degree
Automotive Service Technicians and Mechanics	7,423	5.8%	431	7,019	7,450	Postsecondary training (non-degree)



Many STEM/CTE occupations are in demand, offer wages above the state median wage, growing faster than the typical occupation in **Oregon**

- Graphic Designers – 15% growth rate, High Wage, High-Demand
- Truck Driver – about 30,000 openings, High-Wage, High Demand
- Automotive Service Technicians, about 7,500 projected openings



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Future Ready Oregon: Supporting Oregon's Workers and Businesses by Closing the Workforce Skills Gap

Kate Brown, Governor

Elana Pirtle-Guiney, Workforce and Labor Policy Advisor

Shalee Hodgson, Future Ready Oregon Initiative Manager

September 18, 2018



STATE OF OREGON
Office of the Governor
KATE BROWN

Vision

Close the skills gap for Oregon's students and adults by providing the skills and job training they need to obtain good, family-wage jobs.

Executive Summary

Oregon's economy is booming, but not every Oregon family feels this success, particularly in rural parts of the state. The gap between the skills Oregonians have and what growing businesses need is holding Oregonians – and our economy – back.

The Governor's Future Ready Oregon policy agenda lays out pathways to: a) ensure every Oregon student graduates high school with a plan for their future, and b) provide opportunities for adult Oregonians to "skill-up" and land a better job, one that local businesses need filled.



Having a good job is at the core of successful Oregon families. A good job leads to improved health, quality of life and opportunity for parents and their kids, as well as reduced burden on state services.

To achieve the Governor's overall vision of lifelong learning and skills training, the state must commit to making changes in existing employment programs, investments in career and technical education, and workforce training. Businesses must also be given opportunities to invest in industry training systems.

The Governor's strategies for making Oregon Future Ready are:

- 1. Expand career and technical education (CTE) and other career-connected learning to every high school student in Oregon.*
- 2. Expand NextGen Apprenticeships in five growing industries by 2020, including expansion into new industries.*



3. *Add 1,000 Summer Work Experience Programs for under-engaged Oregon Youth. Ensure funds support experience in jobs with a clear career path to high wage opportunities.*
4. *Connect high schools to Oregon's WorkSource Centers and launch career coaching pilots in three communities.*
5. *Create training pathways in health care industries.*
6. *Make industrial and agricultural work more accessible to young people.*
7. *Invest in communities and populations that encounter significant systemic barriers to economic prosperity.*



Background

Oregon has experienced a record period of economic growth. For the past two decades, Oregon has averaged 3.3 percent annual gross domestic product growth, the second fastest in the nation.¹

Despite this historic period of growth, nearly half of children in Oregon are being raised in low income families. Child poverty is rising in Oregon, with roughly one in five of Oregon's children living in poverty. Poverty rates are even higher for children of color. Almost half of black and Native Hawaiian and Pacific Islander children, and more than one-third of Latino and American Indian children, are living in poverty. In 23 of Oregon's 36 counties, less than half of the children born into low-income families will reach the middle class or beyond as adults.²

According to the Oregon Employment Department (OED), over the past two and a half decades the distribution of wage income in Oregon has become more unequal.³ Family incomes have stagnated while essential costs like child care and housing have increased. Due to increases in housing costs, two-thirds of low-income children in Oregon lived in households that spent more than a third of their income on rent or mortgage payments.⁴

According to the OED, Oregon businesses reported 60,700 job vacancies at any given time in 2017. Of these vacancies, 38,700 job openings (64 percent) were reported as difficult to fill. This is the largest number of vacancies and difficult-to-fill vacancies recorded since the current form of Oregon's Job Vacancy Survey began. Reasons cited for this large number of vacancies include: continued job growth, low unemployment rate, and the requirement for previous work experience.⁵

1. <https://www.qualityinfo.org/-/oregon-gdp-growth-ranks-second-fastest-among-all-states>

2. https://www.oregoncf.org/Templates/media/files/research/top_report_2017.pdf

3. <https://www.qualityinfo.org/-/wage-inequality-in-oregon-the-widening-gap>

4. https://www.oregoncf.org/Templates/media/files/research/top_report_2017.pdf

5. State of Oregon Employment Department. (2018). Oregon's Current Workforce Gaps. Retrieved from <https://www.qualityinfo.org/documents/10182/13336/>



“Oregon businesses reported 60,700 job vacancies at any given time in 2017. Of these vacancies, 38,700 job openings were reported as difficult to fill”

6. Krumenauer, G. (2018). Oregon's Future Workforce Needs: Job Growth to 2027 by Industry. Salem, OR: State of Oregon Employment Department. Retrieved from <https://www.qualityinfo.org/-/oregon-s-future-workforce-needs-job-growth-to-2027-by-industry>.

7. Runberg, D. (2017). New Entrants into Oregon's Construction Industry Helping to Ease the Labor Shortage. Salem, OR: State of Oregon Employment Department. Retrieved from <https://www.qualityinfo.org/-/new-entrants-into-oregon-s-construction-industry-helping-to-ease-the-labor-shortage>.

8. Oregon Office of Economic Analysis. (2018). Construction Wages. Retrieved from <https://oregoneconomicanalysis.com/2018/06/20/construction-wages-graph-of-the-week/>.

9. Beleiciks, N., & Krumenauer, G. (2017). Aging Workforce and Looming Retirements. Salem, OR: State of Oregon Employment Department. Retrieved from <https://www.qualityinfo.org/-/aging-workforce-and-looming-retirements>.

The OED projects that relatively strong demand for workers will continue, based on economic trends and forecasts designed to predict Oregon's future workforce needs. Oregon's total employment is projected to grow by 12 percent between 2017 and 2027. Statewide, OED expects to see a total of 246,000 new jobs over the next decade, and an annual average of 263,000 total job openings. All areas of the state are expected to see this growth.⁶

Demand for new employees in the construction, health care, information technology, advanced manufacturing, bioscience, energy, solar, and wind industries remain among the highest. Occupations in all of these fields pay above the average Oregon wage and require technical training. But, many do not require a four-year college degree.

For example, 1,500 construction laborer jobs went unfilled in 2016.⁷ Wages in the construction industry in 2017 averaged \$58,000, which is \$7,000 above the Oregon average.⁸ And over 20,000 workers in the construction industry were over the age of 55 and will soon be eligible for retirement.⁹ In the health care and social services industries, the industries that consistently see the most job openings, there were



10. Rich, C. (2017). Mending the Gap in Health Care's Workforce May Prove Challenging. Salem, OR: State of Oregon Employment Department. Retrieved from <https://www.qualityinfo.org/-/mending-the-gap-in-health-care-s-workforce-may-prove-challenging>.

11. Belcikis, N. (2018). Oregon's Aging Workforce by Industry and County, 2016. Salem, OR: State of Oregon Employment Department. Retrieved from <https://www.qualityinfo.org/-/oregon-s-aging-workforce-by-industry-and-county-2016>.

12. State of Oregon Employment Department. (2018). Oregon's Current Workforce Gaps. Retrieved from <https://www.qualityinfo.org/documents/10182/13336/>

13. U.S. Department of Labor. (2017). Number of Jobs, Labor Market Experience, and Earnings Growth among Americans at 50: Results from a Longitudinal Survey (BLS Publication No. USDL-17-1158). Washington, D.C.: Bureau of Labor Statistics. Retrieved from <https://www.bls.gov/news.release/pdf/nlsoy.pdf>.

14. State of Oregon Employment Department. (2018). Career and Technical Education (CTE). Retrieved from <https://www.oregon.gov/ode/learning-options/CTE/Pages/default.aspx>.

15. Oregon Department of Education data. Because records keeping methods have changed over this period of time, this is preliminary data.

12,417 job openings in the summer of 2017,¹⁰ and 24 percent of the industry is over the age of 55.¹¹

For every new job created by new or expanding businesses, businesses will have another nine job openings that require newly trained workers to replace those who leave the labor force or make a major occupational change. At the typical entry-level position, one-third of all job openings require education beyond high school, and nearly half of all job openings require at least some training beyond high school.¹²

As our economy continues to change, the skills needed in the workplace will change rapidly. Research suggests the average person changes jobs 12 times from ages 18-50.¹³ For Oregonians to keep up with these changes, they must not only graduate from high school, but also have the background and skills to be a lifelong learner.

Career and Technical Education in High Schools

Oregon's current high school graduation rate in Oregon is 76.7 percent. There are multiple strategies being implemented across the state to improve this rate, including an increase in career and technical education (CTE) programs. According to data compiled by the Oregon Department of Education, CTE is improving the graduation rate across the state with 90 percent of CTE Concentrators (students who take one or more credits in an approved CTE Program of Study) graduating from high school on time.¹⁴ Preliminary data shows schools across Oregon disinvested in CTE over a 15-year period following the passage of Measure 5. In 1990, there were 1,855 CTE teachers in Oregon. By 1994, there were 1,288, and in 2010 that number had fallen to 1,031. But investments between 2015, when Governor Brown took office, and the 2017-18 school year, led to a 65 percent increase in CTE teachers, reaching 1,916 teachers.¹⁵



Registered Apprenticeships

Oregon's registered apprenticeship programs¹⁶ are essential tools in closing the state's skills gap in many technical occupations. These high-paying jobs require more than a high school education, but less than a four-year degree and will continue to make up the largest job segment of Oregon's economy for years to come. As more employers become active participants in developing their workforces, especially in these technical occupations, value can be realized by utilizing registered apprenticeships. Apprenticeship is a rigorous occupational training opportunity that combines on-the-job work experience, classroom instruction, direct industry involvement, and a portable credential.

Registered apprenticeship is currently thriving in Oregon with an all-time high of 8,321 active registered apprentices as of July 1, 2017 — a 20 percent increase over two years. The current base for registered apprenticeship in Oregon is principally concentrated in the construction industry. But, the combination of occupational standards, supervised on-the-job training, and classroom instruction make the apprenticeship model applicable to almost any industry sector.

WorkSource Oregon

Oregon has 37 WorkSource Oregon centers located in communities across the state. These centers serve as one-stop resources for Oregonians seeking employment and training, and for Oregon businesses looking to hire skilled workers. The centers house multiple state and local partners that work together to ensure that individuals and businesses receive the coordinated services needed to meet their goals.

16. https://www.oregon.gov/boli/ATD/pages/a_ag_mtrades.aspx



Workforce Development Boards

Each of Oregon's nine Local Workforce Development Boards consist of a group of community leaders appointed by local elected officials and charged with planning and oversight responsibilities for workforce programs and services in their area. They represent an approach that empowers communities to identify and execute the solutions that they know their local businesses, families, and neighbors will benefit from. These boards are made up of individuals representing business, education, economic development, organized labor, community-based organizations, state agencies, and local government. Workforce Boards play multiple roles in their communities to identify and meet workforce needs.



Recent Accomplishments

Oregon is already beginning to close the skills gap

High School Graduation Rates

Under Governor Brown's leadership, high-school graduation rates have improved 4.7 percent overall and more than 7 percent for students of color, students in special education programs, and migrant students. This is in part due to additional CTE funding which has increased significantly since Governor Brown took office. She dedicated \$170 million to CTE programs across the state, offering students hands-on learning opportunities that prepare them for jobs, expose them to new technologies, and keep kids excited to come to school each day.

Preliminary data shows that investments made between 2015 — when Governor Brown began her focus on CTE — and the 2017-18 school year, led to a 65 percent increase in CTE teachers, reaching 1,916 teachers.¹⁷

To guide this work going forward, the State has begun compiling an annual Talent Plan,¹⁸ overlaying economic data with industry insights and trends to create a clear picture of where key industries in our state are headed. The plan makes investment and strategic recommendations to Oregon's economic development, workforce training, and education boards.

Business Oregon Workforce Incentives

Under the leadership of Governor Brown, Business Oregon is including requirements for the creation of career path jobs in their loan and grant programs. Since February 2015, nearly 17 percent (10 projects over \$2 million) of Strategic Reserve Fund opportunities have included requirements for tying jobs created into local career pathways, investing in training new employees, or providing internships and job-exposure opportunities for youth.

17. Oregon Department of Education data. Because records keeping methods have changed over this period of time, this is preliminary data.

18. <https://www.oregon.gov/highered/institutions-programs/workforce/Documents/>



“Under Governor Brown’s leadership, high-school graduation rates have improved... in part due to additional CTE funding”

Expanded Apprenticeships

Multiple agencies have come together to expand the use of apprenticeship as a training model. Apprenticeship provides employers with new workers immediately, allowing employers to train workers on their systems while those workers master the fundamentals in a classroom. It also allows Oregonians to earn a paycheck while they participate in training and gain access to hands on learning opportunities.

This joint work has resulted in a 20 percent increase in the number of apprentices over the past two years. Registered Apprenticeship is now being utilized in new industries and occupations, expanding opportunities for Oregonians across the state to develop their skills through classroom and on-the-job learning.

Additionally, Governor Brown has directed State agencies to work together to improve the state’s job matching system, making technology updates that ensure Oregonians have access to a robust system that connects job seekers and employers.



Improved Training for Oregonians on Assistance Programs

In recognition of the fact that skill upgrades often take longer than 12 months, the Self-Sufficiency Program within Oregon's Department of Human Services (DHS) has changed the allowable amount of time an individual can be in training while on the Technical Assistance for Needy Families (TANF) program from 12 to 24 months. This will expand the opportunities available to TANF families to help them gain financial independence. To ensure that parents gain the skills they need to get a family wage job, Self-Sufficiency Programs through DHS are partnering with multiple state and local service providers to improve employment and training services locally through utilization of a 50 percent federal match on employment and training services to Supplemental Nutrition Assistance Program (SNAP) recipients. In addition to local partners, this program is being administered through the WorkSource centers in communities across Oregon. This strengths-based approach utilizes the expertise of all providers to ensure Oregonians have access to a broad spectrum of services and supports they need to get a good job and become financially independent. Since Governor Brown took office the program has grown from \$1.6 million to a projected \$29 million in 2019.

To ensure that parents and low-income students can complete a two- or four-year college degree, the Self-Sufficiency Program at DHS has changed the eligibility requirements for students to receive SNAP benefits. Now, any Oregon student who is financially eligible will also be eligible to receive SNAP benefits while they complete training in any Pell-approved two year or less education or training program. There is work being done expand to university students by the 2020-21 school year. Additionally, Employment Related Daycare (ERDC) support is available for working parents who are also attending school.



Industry Initiatives

Governor Brown is bringing together industry leaders in five sectors to discuss how to close the skills gap in their industries. Actions have already begun in three sectors:

1. **Construction:** To help address Oregon’s rural workforce housing shortage, the Governor is supporting construction workers in opening their own businesses. The Governor’s 2018 bill, HB 4144, which passed with bipartisan support in the 2018 legislative session, helps Oregonians who work in the construction industry start their own construction business through access to Business Oregon loans and workforce grants to buy equipment.
2. **Maritime:** In spring 2018, the Governor appointed a Maritime Task Force to determine what actions the State needs to take to support workforce training opportunities in the industry. But, the maritime industry is not tracked in a unified space in the jobs reports government agencies run because the jobs in the industry aren’t all located in Oregon – many of them are at sea and are counted in other state’s industry numbers, or they are self-employment jobs that are not easily counted. But, the maritime industry is a critical part of our state’s economy and a source of thousands of good, high-wage, jobs in coastal communities. A recent report by the state of Washington showed that almost 6,000 seamen, engineers, mates, captains, and others – nearly a third of all water-transportation workers in the state – are over 55 and nearing retirement.¹⁹
3. **Health care:** Data on competencies and training requirements for non-licensed, non-certified health care workers is being analyzed to determine career paths, helping lower-wage workers have a clearer path to self-sufficiency through higher-wage jobs in the health care sector.

19. Greenstone, S. (2017, Aug. 14). Washington state maritime labor headed for a retirement cliff. The Seattle Times. Retrieved from <https://www.seattletimes.com/seattle-news/maritime-labor-headed-for-a-retirement-cliff/>.



“To help address Oregon’s rural workforce housing shortage, the Governor is supporting construction workers in opening their own businesses”

4. Other industries: The Governor has convened five industry summits in food processing, health care, construction, wood products, and information technology. The summits are underway and the Governor appreciates industry leaders’ participation in these conversations.

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Strategy

The skills gap is a critical barrier to growing Oregon's economy and reducing poverty. It is not a new problem, but the changing economy has made it imperative to address the structural, cultural, and funding deficits that exist today. Governor Brown has a strategy to engage Oregonians and Oregon businesses in this work. She is building on successful culture shifts within agencies to better align state services and reduce costly duplication. And she is investing where it will make the biggest difference – in our youth and in adults who need to skill up to support their families – while ensuring opportunities are available to every Oregonian.

To accomplish this, Oregon must be a state where learning is valued, prior learning is recognized, and every Oregonian has access to training programs and educational opportunities. These opportunities must occur when a student is in secondary skill training and just entering the workforce, and it must occur for adults looking to add new skills. Businesses, the State, and individuals must all take an active role in education and training.



Governor Brown's Strategy to Make Oregonians Future Ready

- ONE:** *Expand career and technical education (CTE) and other career-connected learning to every high school student in Oregon*

- TWO:** *Expand NextGen Apprenticeships in five growing industries by 2020, including expansion into new industries*

- THREE:** *Add 1,000 Summer Work Experience Programs for under-engaged Oregon Youth. Ensure funds support experience in jobs with a clear career path to high wage opportunities*

- FOUR:** *Connect high schools to Oregon's WorkSource Centers and launch career coaching pilots in three communities*

- FIVE:** *Create training pathways in health care industries*

- SIX:** *Make industrial and agricultural work more accessible to young people*

- SEVEN:** *Invest in communities and populations that encounter significant systemic barriers to economic prosperity.*



ONE: Expand career and technical education (CTE) and other career-connected learning to every high school student in Oregon

A high school diploma is a critical foundation to prosperity, but it simply isn't enough in the 21st century. Students need to have options and the opportunity to graduate with practical skills that align with workforce needs.

A. Expand CTE Capacity

We must guarantee that every Oregon student is Future Ready and provided with a jumpstart toward a college degree or hands-on, career-connected learning tied to jobs in their community. It is imperative that students are not tracked into either one of these options based on their identity. These options should be available to all students, but especially those who have faced an opportunity gap.

The Governor has committed to expand hands-on learning opportunities to every high school in the state through investing at least \$300 million in CTE and science, technology, engineering, arts, and math (STEAM) curriculum.

B. Leverage Funding for Construction-Related CTE programs:

Construction programs were once the heart of shop classes. Currently, construction classes make up only a small percentage of CTE courses in Oregon high schools because the cost of starting a construction curriculum is often too high. At the same time, Oregon is facing an immediate and long-term shortage in skilled construction workers, with middle- and high-wage jobs available in communities across the state.

The Governor will ask leaders in the construction industry to identify opportunities to fund the start-up costs of construction CTE programs in middle and high schools. The new funds would be jointly administered by representatives from the construction industry and education providers.



TWO: Expand NextGen Apprenticeships in five growing industries by 2020, including expansion into new industries

The current base for registered apprenticeships for adults in Oregon is principally concentrated in the construction industry. However, the combination of occupational standards, supervised on-the-job training, and classroom instruction make the apprenticeship model applicable to almost any industry sector. As more employers become active participants in developing their workforces, registered apprenticeship will be a valuable tool.

Since 2015, the Interagency Apprenticeship Expansion Team, comprised of staff from multiple agencies, has been working together to expand the use of the apprenticeship model of training both within and beyond the construction industry to help employers meet their needs for highly skilled workers. Current target industries include advanced manufacturing, health care, and information technology.

Through this partnership, agencies have applied for and received four U.S. Department of Labor grants that support the expansion of registered apprenticeships, at times directly supporting the creation of new programs alongside financial commitments from industry.

Governor Brown has directed the Interagency Apprenticeship Expansion Team to launch new registered apprenticeships, in addition to the programs underway in advanced manufacturing, health care, and information technology.



“Oregon must be a state where learning is valued, prior learning is recognized, and every Oregonian has access to training programs and educational opportunities”

THREE: Add 1,000 Summer Work Experience Programs for under-engaged Oregon Youth. Ensure funds support experience in jobs with a clear career path to high wage opportunities.

There are programs in Oregon that have proven success in placing students in first time work experiences. They provide additional services to ensure students are successful and are making connections between their work experience and future career opportunities.

Increasing funding for these programs and tying funds directly to work experiences in career path jobs will give young people an opportunity to develop essential skills, see firsthand how their studies relate to the workplace, and explore industries where they might consider a career. Youth employment rates have risen dramatically over the past several years as more youth have entered the workforce and found work opportunities.²⁰ But, barriers for youth looking for work continue to be pronounced, especially as employers regularly list prior work experience as a prerequisite to employment.

20. Bechtoldt, F. (2018). Unemployment Rates for Oregon's Youth – Lowest on Record. Salem, OR: State of Oregon Employment Department. Retrieved from <https://www.qualityinfo.org/-/unemployment-rates-for-oregon-s-youth-lowest-on-record>.



For Opportunity Youth - those ages 16-24 who are not in school, not working, and those who are at the margin of school and work - barriers are even more pronounced. These youth tend to be disproportionately low-income, immigrant, non-native English speakers, single parents, from rural households, youth of color, LGBT, and youth with disabilities. Many struggle with behavioral health needs, addiction, or involvement with the justice system, navigating overwhelming circumstances in order to obtain employment.²¹

Over the next four years, Oregon will increase funding for youth summer employment by \$7 million, increasing participation by 1,000 Oregon youth. These funds will reach youth in every Oregon county and will be spent on programs that provide work experiences in jobs that are connected to a career pathway and a family wage job.

FOUR: Connect high schools to Oregon's WorkSource centers and launch career coaching pilots in three communities

WorkSource Oregon staff are experts in helping Oregonians with job search strategies, and they also help clients identify their career path through analyzing their skills, interests, and educational attainment goals. Currently, these experts mainly work with adult populations in the WorkSource centers.

Governor Brown believes we should connect these experts to our high school students so that every high school junior and senior has access to these services, adding additional resources to the career counseling already happening in our schools. This also ensures that any student who needs career services after graduation will already be comfortable accessing the state's WorkSource centers.

21. Oregon Youth Development Council. (2014). Opportunity Youth, Priority Youth and the National Conversation.



The Governor has directed the Oregon Employment Department and the Oregon Department of Education to develop a pilot program in three Oregon high schools to assign a WorkSource staff person to the school, ensuring they have time to spend at least one hour with every junior and senior during the school year.

Every student in the pilot will identify multiple potential career paths and the opportunities available in each career path at different levels of educational attainment. Agencies will track graduation rates and educational attainment to evaluate whether there is an increase in attainment among students engaged in the pilot as compared to their peers.

FIVE: Create training pathways in health care industries

Governor Brown has directed the Interagency Apprenticeship Expansion Team to look for opportunities to expand a health care pilot apprenticeship program in southwestern Oregon to other parts of the state. This program has certified the first health care apprenticeship program in Oregon to train medical assistants.

The Governor has directed the Oregon Workforce and Talent Development Board to develop career pathways in health care professions and to consider the expansion of apprenticeship and other training programs in this field. The Board will convene industry, workforce representatives, and education leaders across Oregon to learn from other states who have completed similar work. Under the Governor's leadership, agencies are looking for opportunities to get Oregonians with prior certification and experience back into the professions they trained for.



The Governor has directed her staff to work with agencies to align qualifications for entry-level health care, homecare, and community health jobs. Partnering with industry and worker representatives will ensure workers are able to train for several sectors of the industry at once with portable pre-requisites and credentials.

SIX: Make industrial and agricultural work more accessible to young people

Every Oregonian of a certain age has a story about working the fields as a kid – what it taught them, what it didn't, or why they stood on the sidelines. But today, most Oregon businesses in agriculture, manufacturing, and construction will tell you that they can't hire anyone under 18. However, this assertion is far from the truth. Many youth are interested in undertaking these jobs, but agricultural and industrial businesses have difficulty navigating the regulatory barriers to employing them.

There are several provisions that limit working hours and the type of work that can be done by Oregon youth. These laws ensure kids have the time to prioritize school and aren't working in dangerous conditions. But, they don't prevent youth from working in industrial or agricultural settings.

In conjunction with the Oregon Bureau of Labor and Industries (BOLI), the Governor has directed the Interagency Apprenticeship Expansion Team to produce a handbook for employers in construction, manufacturing, and agricultural settings, who are interested in providing work experience to Oregonians who are ages 16 to 18.



“Expanding economic opportunity is not just a moral imperative, it is an economic growth imperative”

SEVEN: Invest in communities and populations that encounter significant systemic barriers to economic prosperity

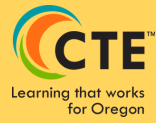
Even in the current strong economy, shared economic prosperity remains a significant issue for many Oregonians from underrepresented communities, particularly people of color, immigrants, and our native and tribal populations. With the current rate of growth, expanding economic opportunity is not just a moral imperative, it is an economic growth imperative. To ensure an inclusive and competitive economy it is critical that economic development explicitly invests in communities and populations that encounter significant systemic barriers to economic prosperity.

Under Governor Brown’s direction, Business Oregon and the Higher Education Coordinating Commission have begun to align workforce development and economic development activities. Their collaboration has led to investment in three critical projects serving the black community in inner-Portland, rural Oregonians in Douglas County, and our tribal communities on the Warm Springs reservation.

Governor Brown has directed the agencies to find additional opportunities and communities to skill up traditionally underserved Oregonians for job opportunities in their communities, and to incentivize the siting of new high-wage developments in these communities across the state.



CAREER & TECHNICAL EDUCATION IN OREGON



The CTE brand logo, brand positioning, theme, and brand extensions are the property of NASDCTEC.

Lauren Dressen (CTE Data Analyst) - July 2018

90%

of CTE Concentrators (students who take one or more credits in an approved CTE Program of Study) graduate from high school on-time



817

Number of approved CTE Programs of Study during the 2017-18 school year



Since the 2013-14 school year, the number of approved CTE Programs of Study has grown by nearly

28%!



School Year	Participants	Concentrators
2014-15	55580	38872
2015-16	62773 (+12.9%)	40551 (+4.0%)
2016-17	69651 (+11%)	46013 (+13.5%)

CLASS OF 2016 CTE CONCENTRATOR PERCENTAGES

21%

Black/
African American

22%

American Indian/
Alaskan Native

31%

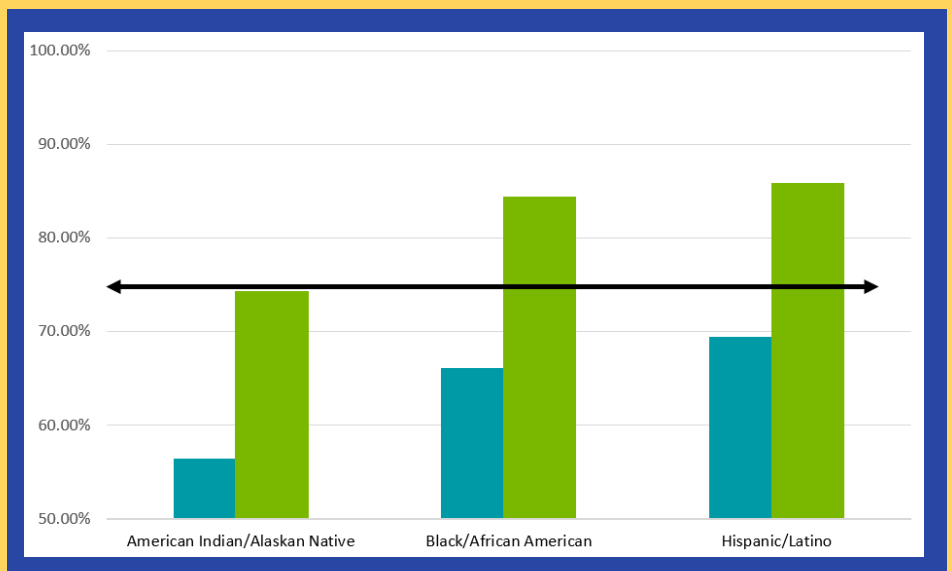
Hispanic/
Latino

34%

All Students

MAKING A DIFFERENCE! GRADUATION RATES - CLASS OF 2016

STATEWIDE CTE CONCENTRATORS
→ STATEWIDE GRADUATION RATE (74.8%)



DID YOU KNOW?

In the class of 2016, CTE Concentrators with disabilities reported attending a 2-year or 4-year college the year following graduation at a rate that exceeded their non-CTE Concentrator peers by **21.6 PERCENTAGE POINTS**

Agriculture, Food & Natural Resources

- Agribusiness Systems
- Animal Systems
- Environmental Service Systems
- Food Products & Processing Systems
- Natural Resources Systems
- Plant Systems
- Power, Structural & Technical Systems
- Architecture & Construction

Architecture & Construction

- Construction
- Design/Pre-Construction
- Maintenance/Operations

Arts, A/V Technology & Communications

- A/V Technology & Film
- Journalism & Broadcasting
- Performing Arts
- Printing Technology
- Telecommunications
- Visual Arts

Business Management & Administration

- Administrative Support
- Business Information Management
- General Management
- Human Resources Management
- Operations Management

Education & Training

- Administration & Administrative Support
- Professional Support Services
- Teaching/Training

Finance

- Accounting
- Banking Services
- Business Finance
- Insurance
- Securities & Investments

Government & Public Administration

- Foreign Service
- Governance
- National Security

- Planning
- Public Management & Administration
- Regulation
- Revenue & Taxation

Health Sciences

- Biotechnology Research & Development
- Diagnostic Services
- Health Informatics
- Support Services
- Therapeutic Services

Hospitality & Tourism

- Lodging
- Recreation, Amusements & Attractions
- Restaurants & Food/Beverage Services
- Travel & Tourism

Human Services

- Consumer Services
- Counseling & Mental Health Services
- Early Childhood Development & Services
- Family & Community Services
- Personal Care Services

Information Technology

- Information Support & Services
- Network Systems
- Programming & Software Development
- Web & Digital Communications

Law, Public Safety, Corrections & Security

- Correction Services
- Emergency & Fire Management Services
- Law Enforcement Services
- Legal Services
- Security & Protective Services

Manufacturing

- Health, Safety & Environmental Assurance
- Logistics & Inventory Control
- Maintenance, Installation & Repair
- Manufacturing Production Process Dev.
- Production
- Quality Assurance

Marketing

- Marketing Communications
- Marketing Management
- Marketing Research
- Merchandising
- Professional Sales

Science, Technology, Engineering & Mathematics

- Engineering & Technology
- Science & Mathematics

Transportation, Distribution & Logistics

- Facility & Mobile Equipment Maintenance
- Health, Safety & Environmental Management
- Logistics Planning & Management Services
- Sales & Service
- Transportation Operations
- Transportation Systems/Infrastructure Planning, Management & Regulation
- Warehousing & Distribution Center Operations