# Educating and Training Tomorrow's Workers

November 13, 2013
Garrett Groves



#### **New Realities**



#### EDUCATION, WORKFORCE & ECONOMIC DEVELOPMENT

I. Skill demands are changing in the U.S. labor market

II. Postsecondary education is the "New Minimum" for access to the middle class

III. We must address these challenges with fewer resources.



**EDUCATION, WORKFORCE & ECONOMIC DEVELOPMENT** 

**High-skill Occupations:** 

**Traditional Middle-Skill Occupations:** 

**Low-Skill Occupations:** 



**EDUCATION, WORKFORCE & ECONOMIC DEVELOPMENT** 

**High-skill Occupations:** Managerial, professional, and technical occupations, such as engineering, finance, management, and medicine.

**Traditional Middle-Skill Occupations:** 

**Low-Skill Occupations:** 



**EDUCATION, WORKFORCE & ECONOMIC DEVELOPMENT** 

**High-skill Occupations:** Highly educated workers with analytical ability, problem solving, and creativity.

**Traditional Middle-Skill Occupations:** 

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**EDUCATION, WORKFORCE & ECONOMIC DEVELOPMENT** 

**High-skill Occupations:** Highly educated workers with analytical ability, problem solving, and creativity.

**Traditional Middle-Skill Occupations:** 

**Low-Skill Occupations:** Service oriented occupations, such as food preparation, cleaning, and security and protective services.



EDUCATION, WORKFORCE & ECONOMIC DEVELOPMENT

**High-skill Occupations:** Highly educated workers with analytical ability, problem solving, and creativity.

**Traditional Middle-Skill Occupations:** 

**Low-Skill Occupations:** Workers with no formal education beyond high school. They work in occupations that are physically demanding and cannot be automated.



**EDUCATION, WORKFORCE & ECONOMIC DEVELOPMENT** 

**High-skill Occupations:** Highly educated workers with analytical ability, problem solving, and creativity.

**Traditional Middle-Skill Occupations:** Sales, office and administrative support, production, construction, extraction, installation, maintenance and repair, transportation, and material moving.

**Low-Skill Occupations:** Workers with no formal education beyond high school. They work in occupations that are physically demanding and cannot be automated.



**EDUCATION, WORKFORCE & ECONOMIC DEVELOPMENT** 

**High-skill Occupations:** Highly educated workers with analytical ability, problem solving, and creativity.

**Traditional Middle-Skill Occupations:** Workers who perform routine tasks that are procedural and repetitive.

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**EDUCATION, WORKFORCE & ECONOMIC DEVELOPMENT** 

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## **Automation**

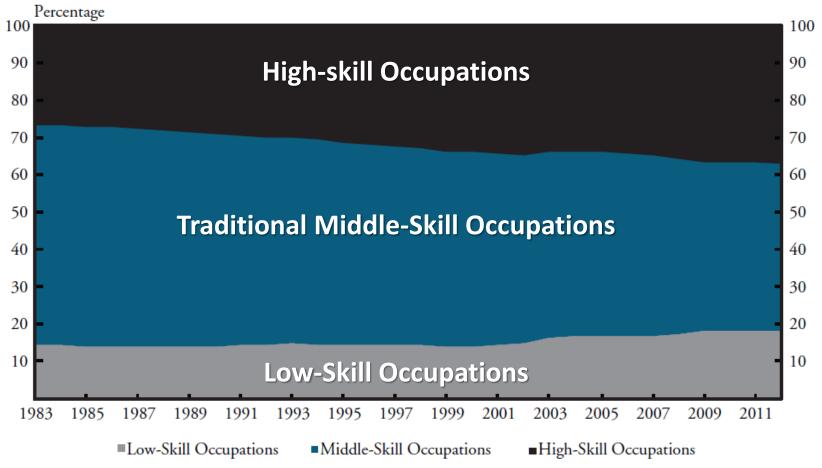
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#### **EDUCATION, WORKFORCE & ECONOMIC DEVELOPMENT**

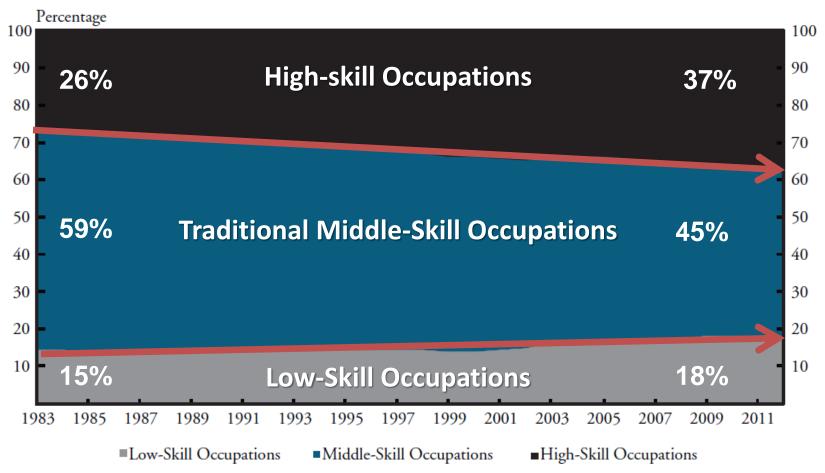
#### EMPLOYMENT SHARES BY SKILL LEVEL





#### **EDUCATION, WORKFORCE & ECONOMIC DEVELOPMENT**

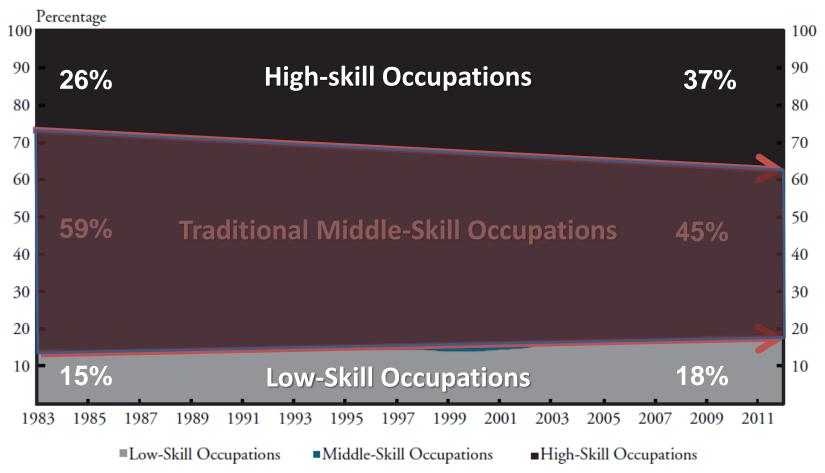
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#### **EDUCATION, WORKFORCE & ECONOMIC DEVELOPMENT**

#### EMPLOYMENT SHARES BY SKILL LEVEL





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**High-skill Occupations:** Highly educated workers with analytical ability, problem solving, and creativity.

### **Automation**

Traditional Middle-Skill Occupations: Workers who perform routine tasks that are procedural and repetitive.

#### **Low-Skill Occupations = High School or Less**

Workers with no formal education beyond high school. They work in occupations that are physically demanding and cannot be automated.



EDUCATION, WORKFORCE & ECONOMIC DEVELOPMENT

#### **New High-skill Occupations = Bachelors and Above**

Highly educated workers with a college degree and above

High-kill Occupation: Highly educated workers with analytical ability, problem solving, and creativity.

**New Middle-Skill Occupations = "Some College"** 

Highly educated workers with education above a high school diploma, but less than a 4-year degree.

#### **Low-Skill Occupations = High School or Less**

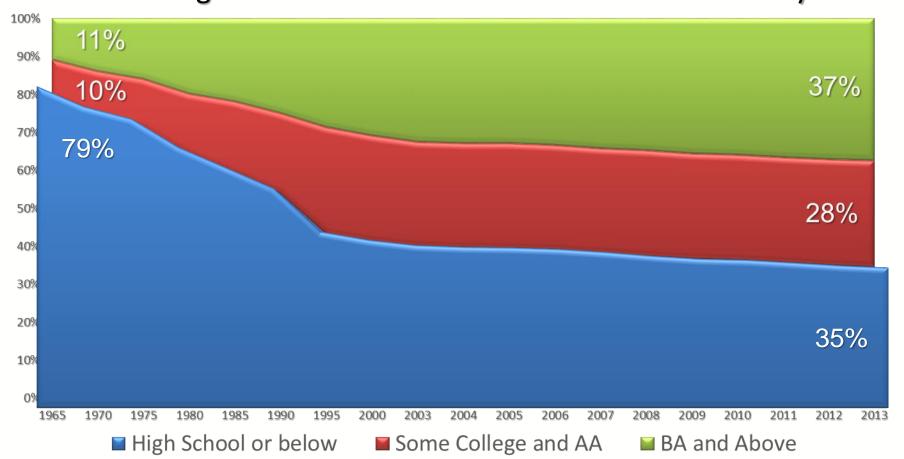
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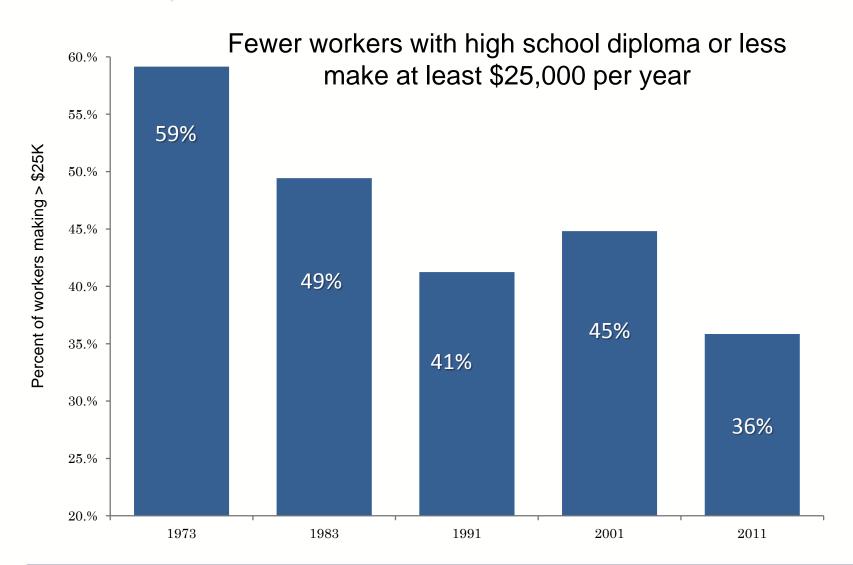


EDUCATION, WORKFORCE & ECONOMIC DEVELOPMENT

# Defining the Problem: Increasing Need for More Education in Current Economy



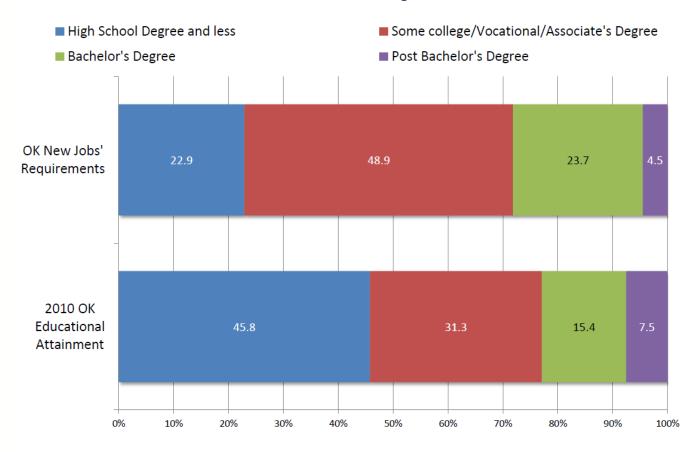






#### **EDUCATION, WORKFORCE & ECONOMIC DEVELOPMENT**

# **OK's Educational Gap for New Jobs**



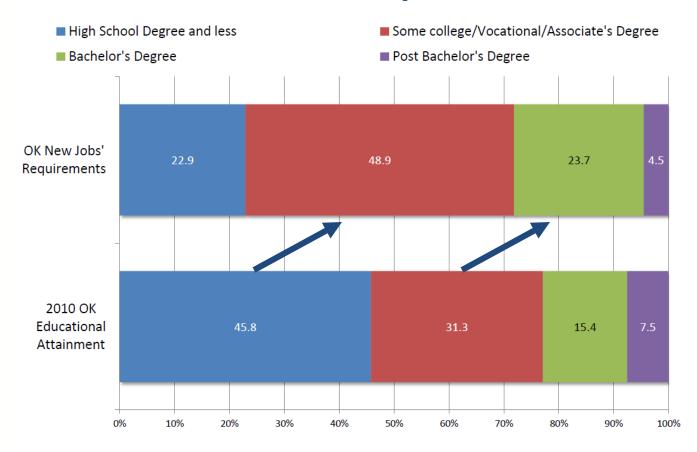
New Jobs defined as those jobs projected to be created between 2010 and 2020. Source: 2010 ACS; EMSI Complete Employment - 2011.4





#### **EDUCATION, WORKFORCE & ECONOMIC DEVELOPMENT**

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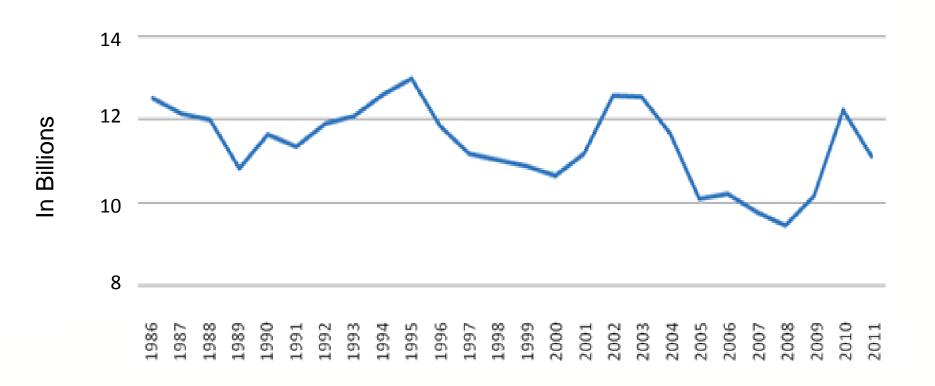






**EDUCATION, WORKFORCE & ECONOMIC DEVELOPMENT** 

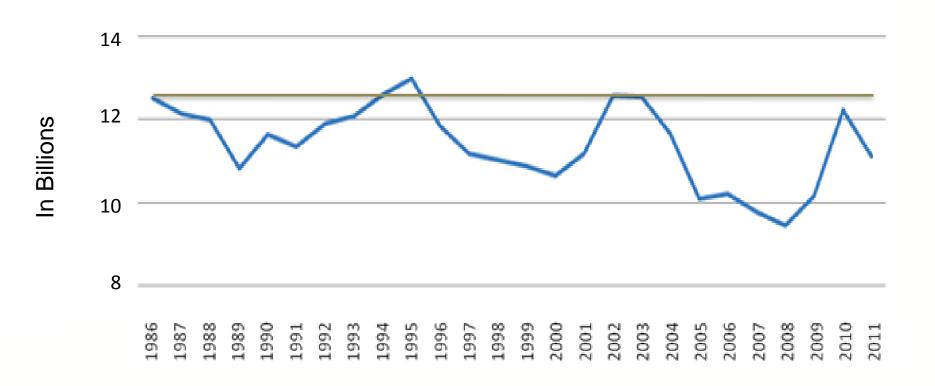
## Federal Employment and Training Expenditures





EDUCATION, WORKFORCE & ECONOMIC DEVELOPMENT

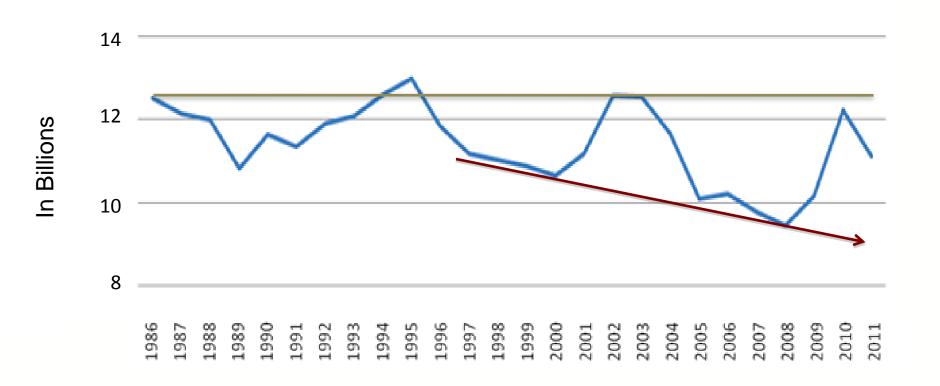
# Federal Employment and Training Expenditures



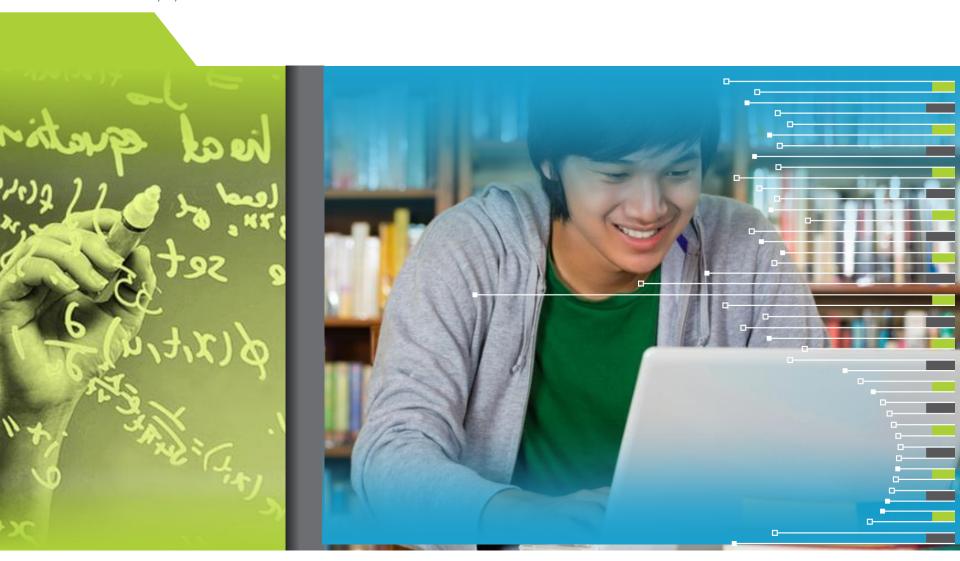


**EDUCATION, WORKFORCE & ECONOMIC DEVELOPMENT** 

# Federal Employment and Training Expenditures



# Skilled for Life? KEY FINDINGS FROM THE SURVEY OF ADULT SKILLS





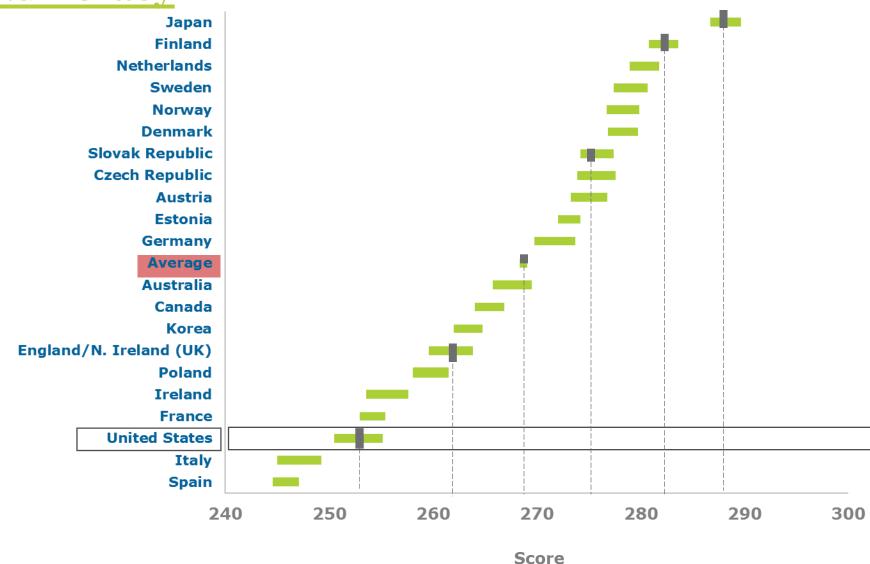
# Survey of Adult Skills in brief





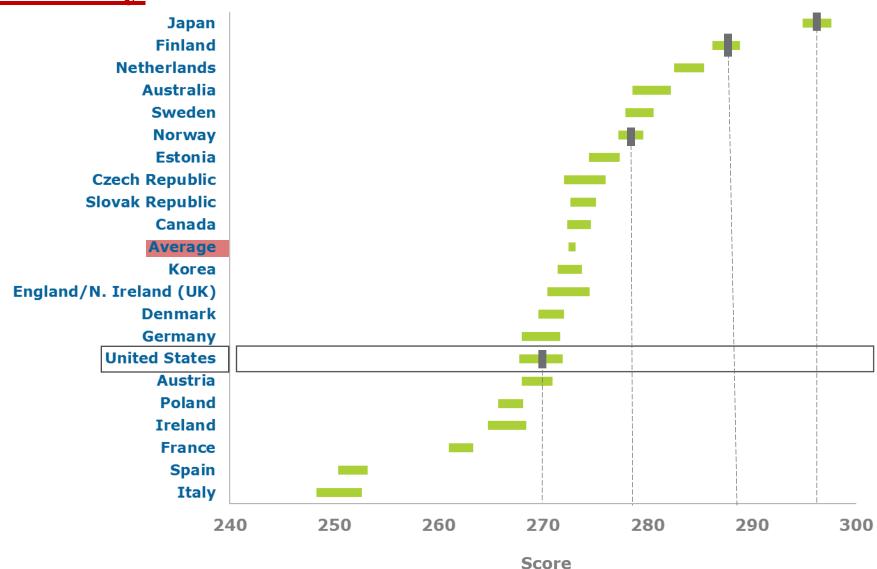
# Skills of adults

# **Numeracy**

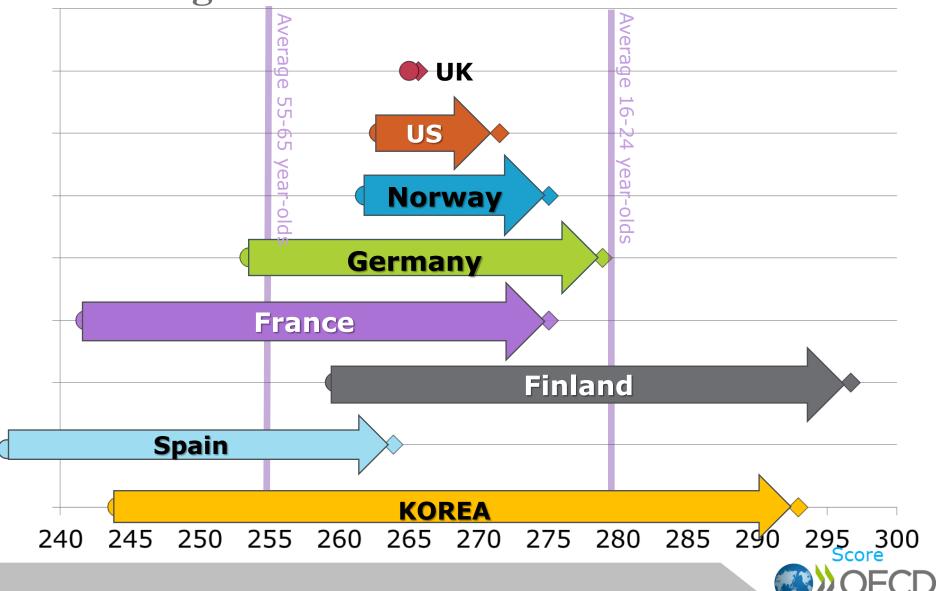


# Skills of adults

# **Literacy**



Literacy skills in younger and older generations



# **Sector Strategies Coming of Age:**



- I. Education
- II. Workforce Development
- III. Economic Development



# **Sector Strategies Coming of Age:**



- I. Education ———— Train & Pray
- II. Workforce Development
- III. Economic Development

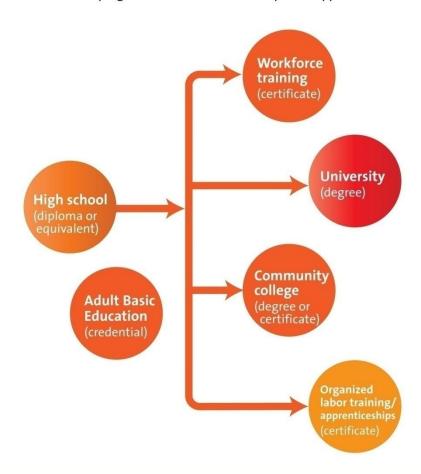
# **Sector Strategies Coming of Age:**



- I. Education ———————— Career Pathways
- II. Workforce Development
- III. Economic Development

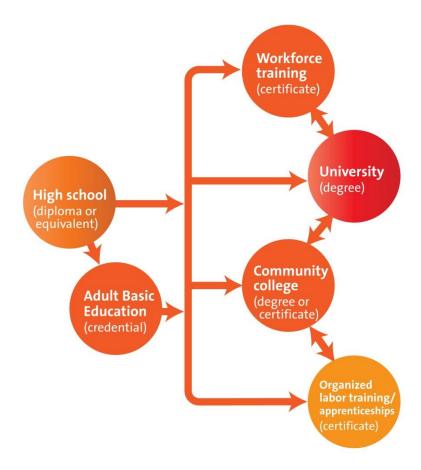


Effective career pathways rely on coordination across education and training programs in order to offer a clear sequence of industry-relevant coursework and credentials to job seekers. Today's education and training programs include online and in-person opportunities.



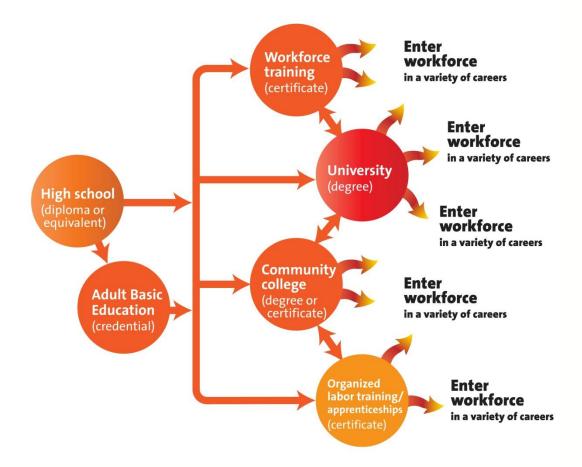


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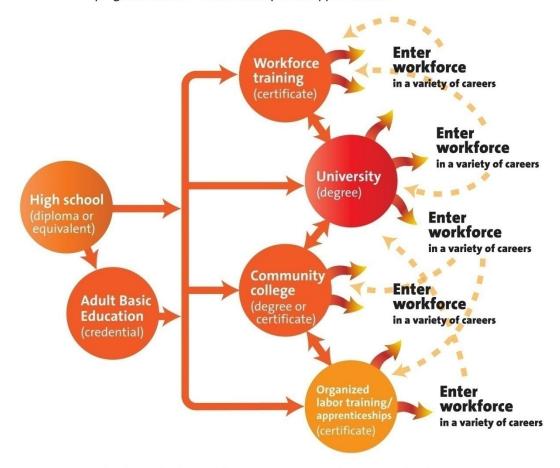


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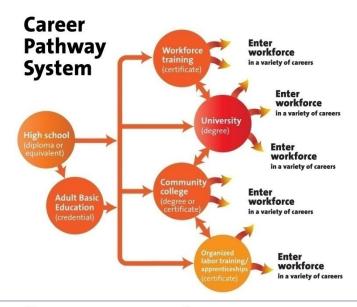
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After being in the workforce, a person may choose to go back for more credentials to make an upward or lateral career move.

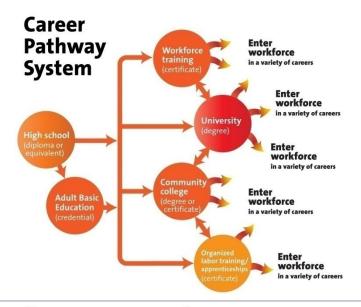


- Education Career Pathways
- II. Workforce Development
- III. Economic Development



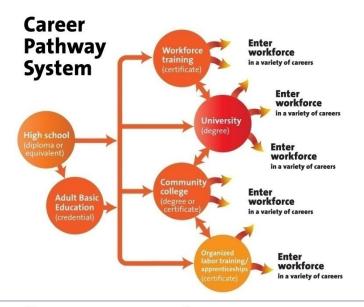


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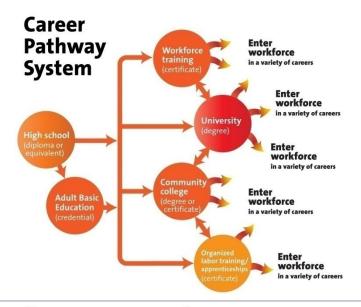


- Education
- II. Workforce Development
- III. Economic Development **Business Attraction**





- Education
- II. Workforce Development
- **Industry Clusters** III. Economic Development



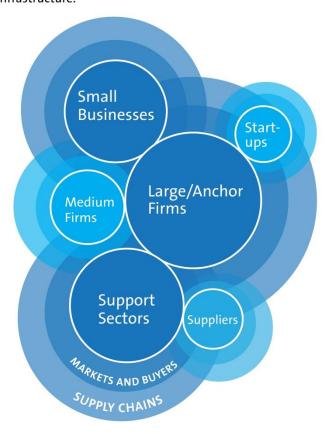


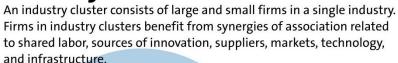




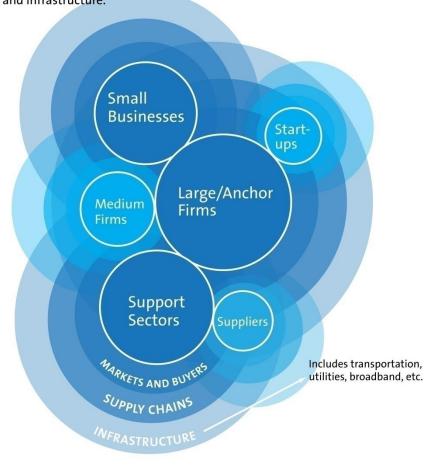




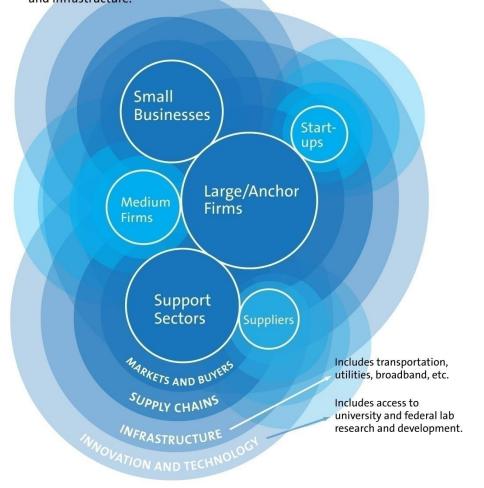






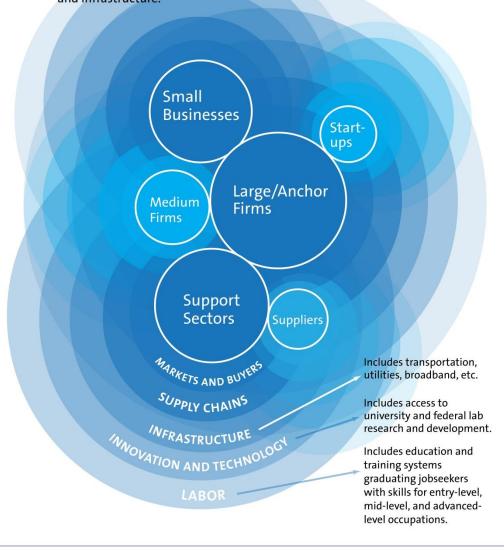








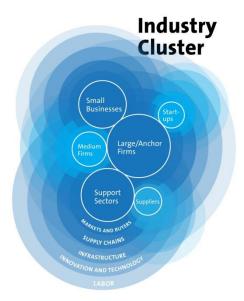






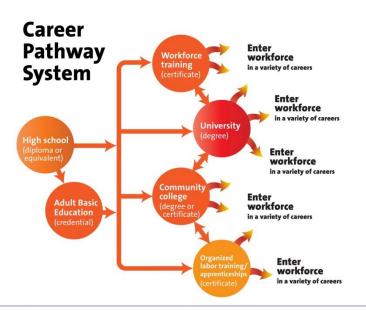
- Education Career Pathways
- II. Workforce Development
- III. Economic Development **Industry Clusters**

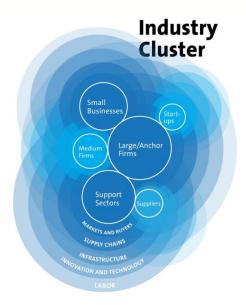






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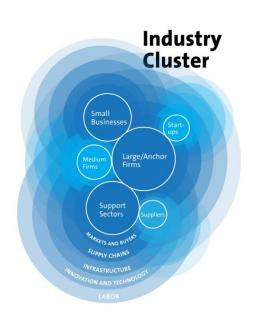
**EDUCATION, WORKFORCE & ECONOMIC DEVELOPMENT** 

- Education
- II. Workforce Development

Labor Exchange & **Customized Training** 

III. Economic Development





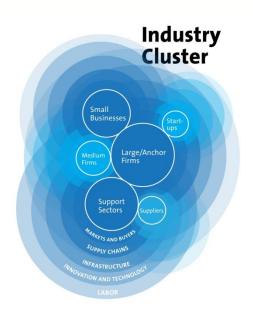


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- I. Education
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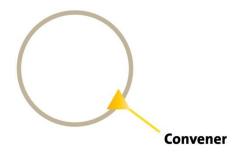
**Sector Partnerships** 





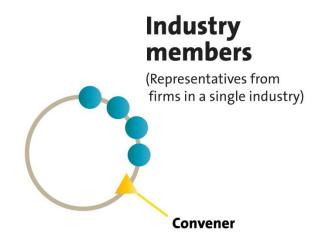


The partnership addresses common needs of employers and generates coordinated solutions that benefit workers.



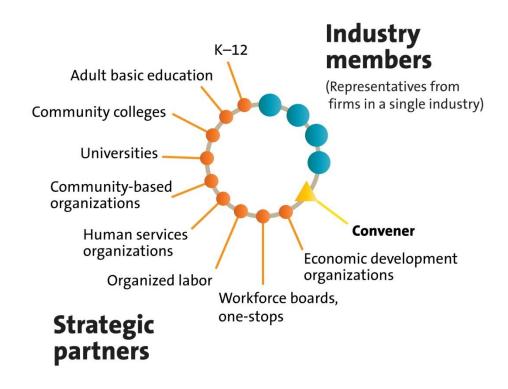


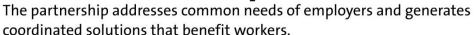
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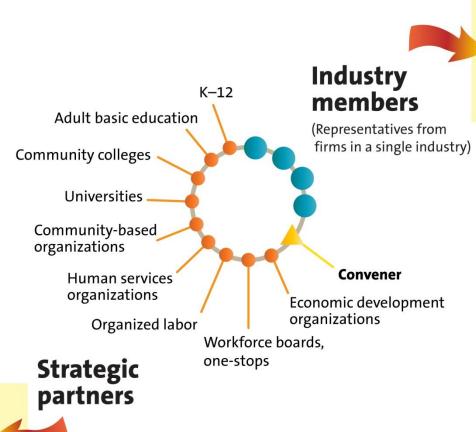


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#### **Outcomes for Employers**

- 41% employers report reductions in turnover
- 84% employers report significant increases in productivity
- 100% employers report participation in Partnership was valuable

#### **Outcomes for Workers**

- 48% worker participants exited poverty
- 18% higher earnings
- · more likely to work and in jobs with benefits



**EDUCATION, WORKFORCE & ECONOMIC DEVELOPMENT** 

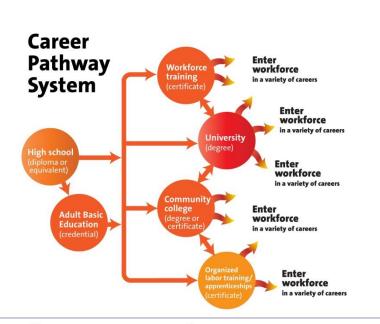
**Sector Partnership** 

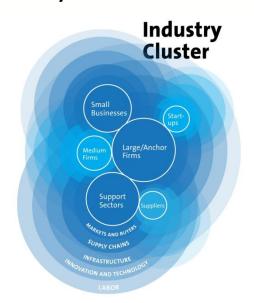
Education Career Pathways



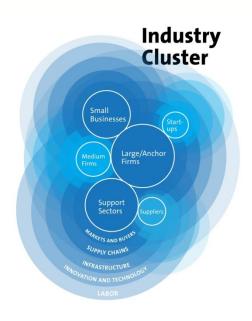
II. Workforce Development Sector Partnerships

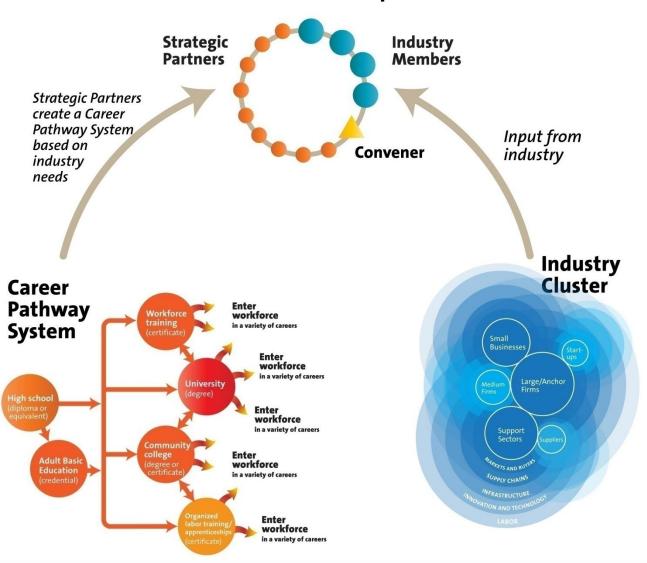
III. Economic Development **Industry Clusters** 

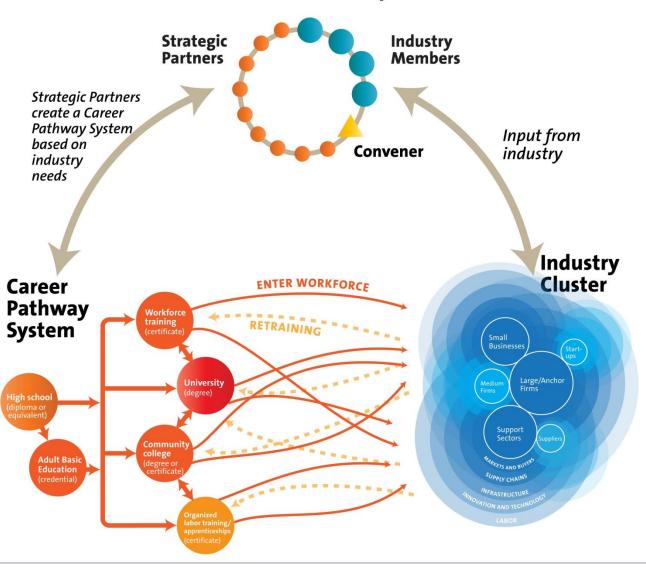


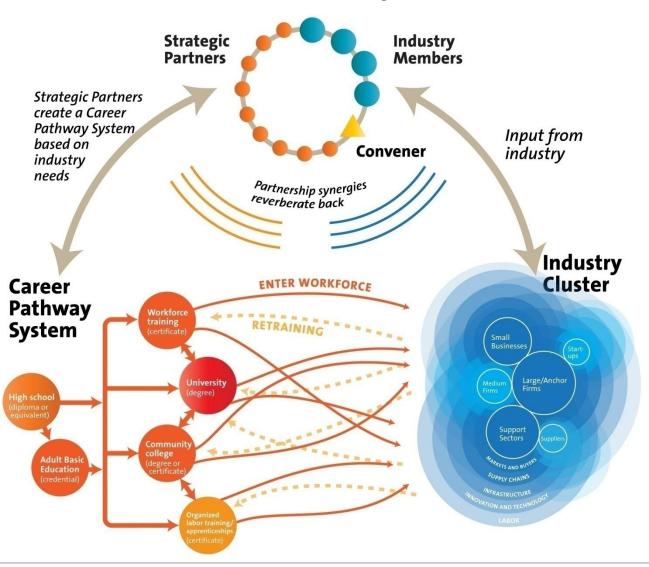


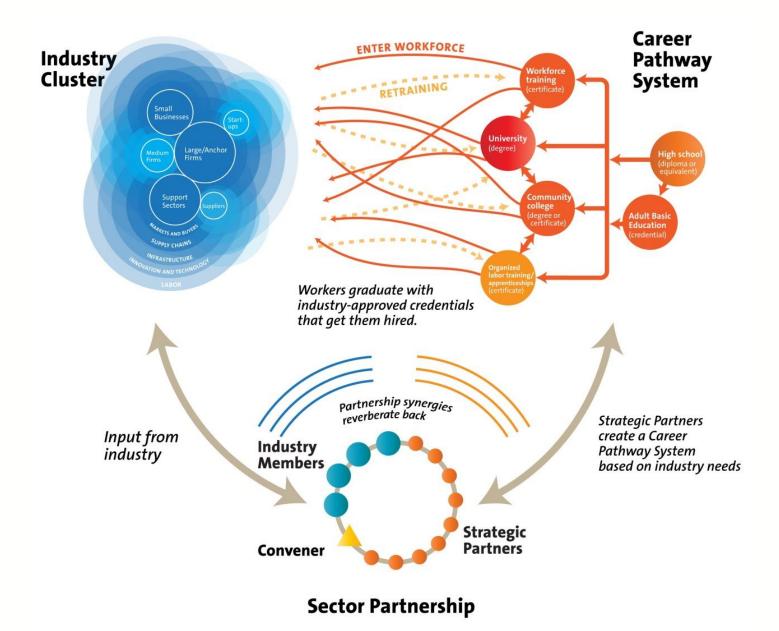


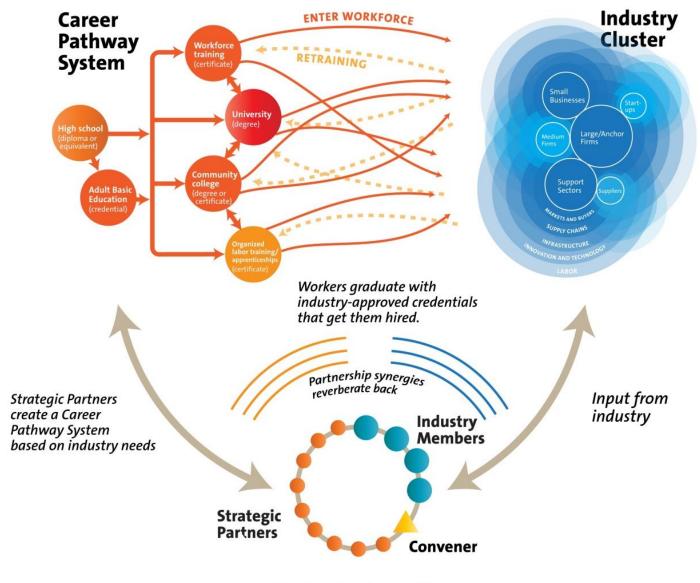












**Sector Partnership** 

## VIRGINIA'S REGIONAL CAREER PATHWAYS INITIATIVE

#### **Located on the Virginia Peninsula**

- Engaged 14 Major Manufacturers in the region
- Local Workforce investment board
- Community colleges
- Six school districts



- Research and Development
- Implementation and continuous improvement of career pathways
- Education & training specifically tailored to more than 11,000 jobs available in next 5 years

#### **Regional Strategic Planning:**

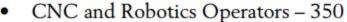
Skills to Succeed Inventory (2012 – 2016) Road map to Success (Strategic Plan)



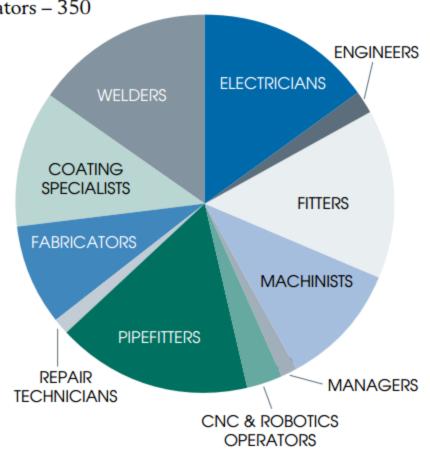


## VIRGINIA'S ADVANCED MANUFACTURING CONSORTIUM

The occupations and job openings include:



- Coating Specialists (Surface Prep Technicians) – 1,300
- Electricians 1,700
- Engineers 200
- Fabricators/Sheetmetal Workers – 950
- Fitters 1,600
- Machinists 1,200
- Production and Account Managers – 150
- Pipefitters 1,850
- Repair Technicians 150
- Welders 1,700





## VIRGINIA'S ADVANCED MANUFACTURING CONSORTIUM

#### Hampton Roads Higher Education and Workforce Credentials in Manufacturing Related Careers

OCCUPATION	TNCC	l μυ	ODU	NSU	NNS-AS	NHREC	TCC	RCC
Computer Aided Drafting/Design	AAS, CERT, CSC	AS					AAS, CERT	
Engineering, General	AS	BS	BS, ME, MS, DEG, PhD				AS	
Engineering Technology	AAS		BS				CERT	AAS
Engineering Management			MS, ME				CSC	
Electrical/Electronic Engineering	AS		BS	BS, MS			CERT	
Electrical/Electronic Eng. Tech.	AAS, CERT, CSC		BS				AAS	
Electrical/Electronic/Comp. Eng. Tech.				BS			CERT, CSC	CSC
Elec. Mech. Assembler	CSC						AAS, CERT, CSC	
Elec. Maintenance Tech.	CSC					WD		
Elec. Production Tech.	CSC							
Electrical Tech.	AAS, CSC					WD	AAS, CERT	
Engineering Performance Spec.	CSC							
High Performance Manufacturing	CSC							
Civil Engineering Technology							AAS, CSC	
Environmental Engineering	AS		BS					
Industrial Technology							AAS, CSC	AAS
Optical Engineering	AAS			BS				
Aircraft Powerplant Tech.		CERT						
Airframe Mech. and Aircraft Maint. Tech.		CERT						
Mechanical Engineering Tech.	AAS, CSC		BS	BS			CSC	CERT, CSC
Auto, Mech. Tech.	AAS, CERT, CSC					WD	AAS, CSC	
Avionics Maintenance Tech.		AS						
Diesel Mechanics Tech.							CSC	
Heating, A/C, Vent and Refrig. Maint. Tech.	AAS, CERT, CSC, WD					WD	AAS, CERT	CSC
Precision Metal Working							CERT, CSC	CSC
Welding Technology/Welder	CSC, WD					WD	CERT, CSC	CSC
World Class Shipbuilder	AAS				ARI			
Trades Related Education	AAS				ARI			
CNC Machining	CSC, WD					WD	AAS	
Plumber/Pipefitter						WD		

Advanced specializations along Career Pathways are available through the community colleges and the universities in many degrees, and with the NNS Apprentice School in Advanced Shipyard Operations, Cost Estimation, Modeling and Simulation Marine Design, Nuclear Testing and Production Planning.

AAS — Associate of Applied Science
ARI — Apprenticeship Related Instruction
AS — Associate's Degree
BS — Bachelor of Science
CERT — Certified Career Studies Certificate
CSC — Career Studies Certificate

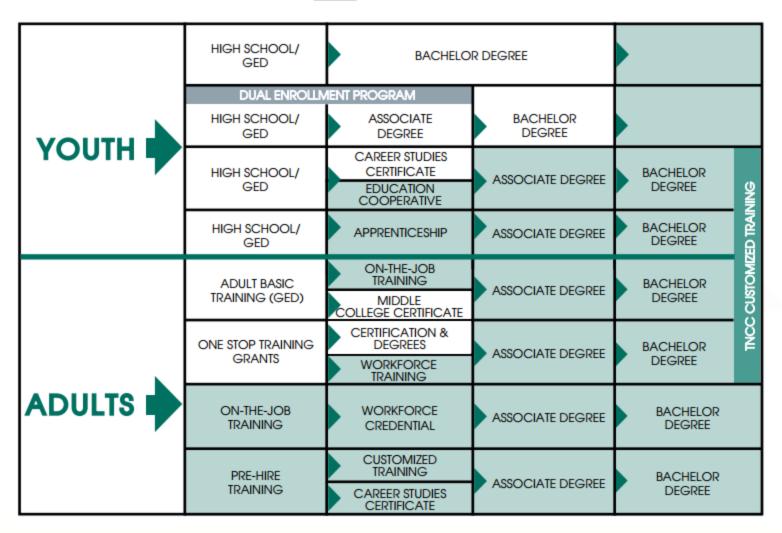
ME — Master of Engineering
MS — Master of Science
WD — Workforce Development

TNCC — Thomas Nelson Community College HU — Hampton University ODU — Old Dominion University
NSU — Norfolk State University
TCC — Tidewater Community College
RCC — Rappahannock Community College
NNS-AS — Newport News Shipyard-Apprentice School
NHREC — New Horizons Regional Education Center

## VIRGINIA'S ADVANCED MANUFACTURING CONSORTIUM

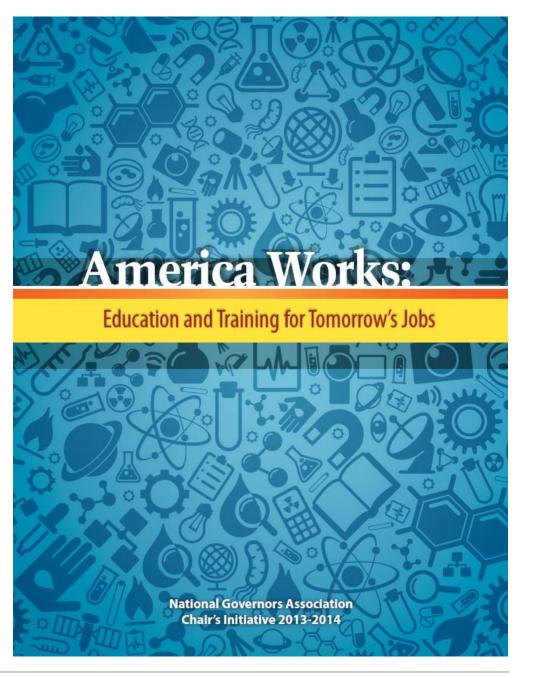
CURRENT PENINSULA CAREER PATHWAY OPPORTUNITIES (HIGH SCHOOL – UNIVERSITY)

EMPLOYMENT



# America Works:

Education and Training for Tomorrow's Jobs





- 1. Statewide Vision
- 2. Improved Data Systems
- 3. High-Quality Partnerships
- 4. Aligned Use of Incentives and Resources

# Education and Training for Tomorrow's Jobs

#### STATEWIDE VISION

- 1. State goal or vision for postsecondary completion and attainment.
- State vision or strategy for economic development.

- Are they connected?
- ☐ Is there meaningful activity taking place related to the vision?

- 1. Statewide Vision
- 2. Improved Data Systems
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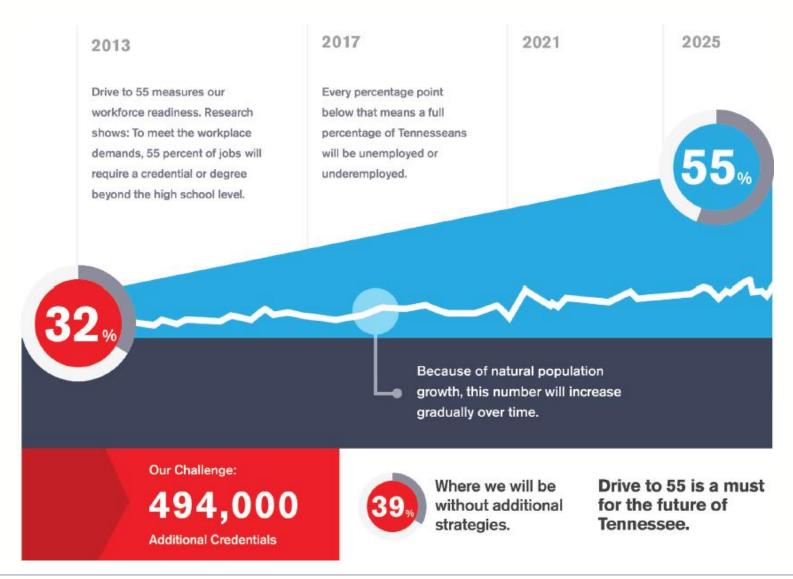
#### **TENNESSEE**

- Increase the percentage of Tennesseans with college degrees or certifications to 55% by the year 2025.
- A mission for higher education, workforce and economic development.
- A drive to reduce unemployment and improve the quality of life.

- 1. Statewide Vision
- 2. Improved Data Systems
- 3. High-Quality Partnerships
- 4. Aligned Use of Incentives and Resources









☐ Identify Key Policy Questions

☐ Strengthen the State's Data Infrastructure

☐ Produce Relevant Products



- 1. Statewide Vision
- 2. Improved Data Systems
- 3. High-Quality Partnerships
- 4. Aligned Use of Incentives and Resources















MLDS Center Staff

About Us | Mission & Vision | History | Governance | Data Glossary

The Maryland Longitudinal Data System (MLDS) links together data for Maryland students from preschool through college and out into their career. The data supports the continuous improvement of educational outcomes and research to increase student achievement and support accountability.

#### Featured Dashboards (Click on a dashboard to View)

What percentage of high school students enroll in college?

Are high school graduates college ready?

How quickly do residents graduate college?

Are we producing the right degrees for state jobs?

What percent of students are engaged in STEM?

How many degrees awarded are STEM related?

www.MLDSCenter.org

Login





Policy Maker and Analyst



Parent & Student







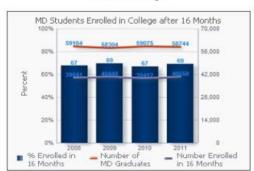
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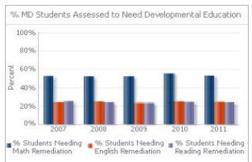
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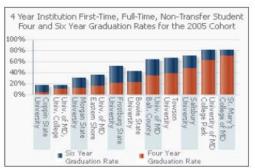
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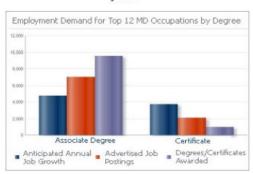
Are Maryland's High School graduates college ready?



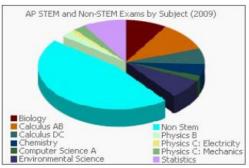
How quickly and effectively do Marylanders graduate from college?



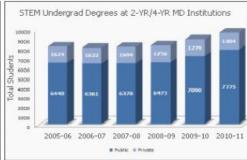
Are we producing the right degrees for Maryland iobs?



What percentage of high school students are engaged in STEM education?



How many 2-yr and 4-yr college degrees awarded in Maryland are STEM-related?



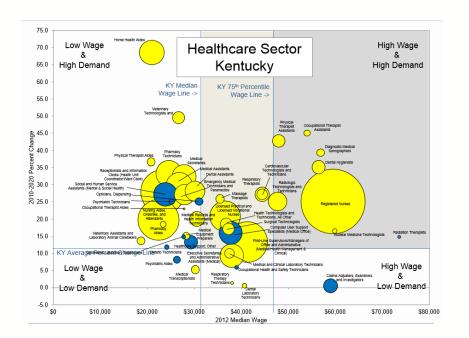
www.MLDSCenter.org

# Education and Training for Tomorrow's Jobs

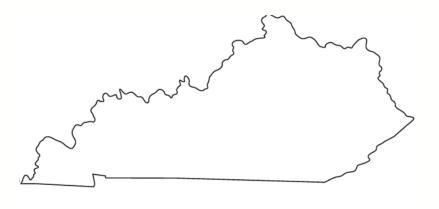
#### IMPROVED DATA SYSTEMS

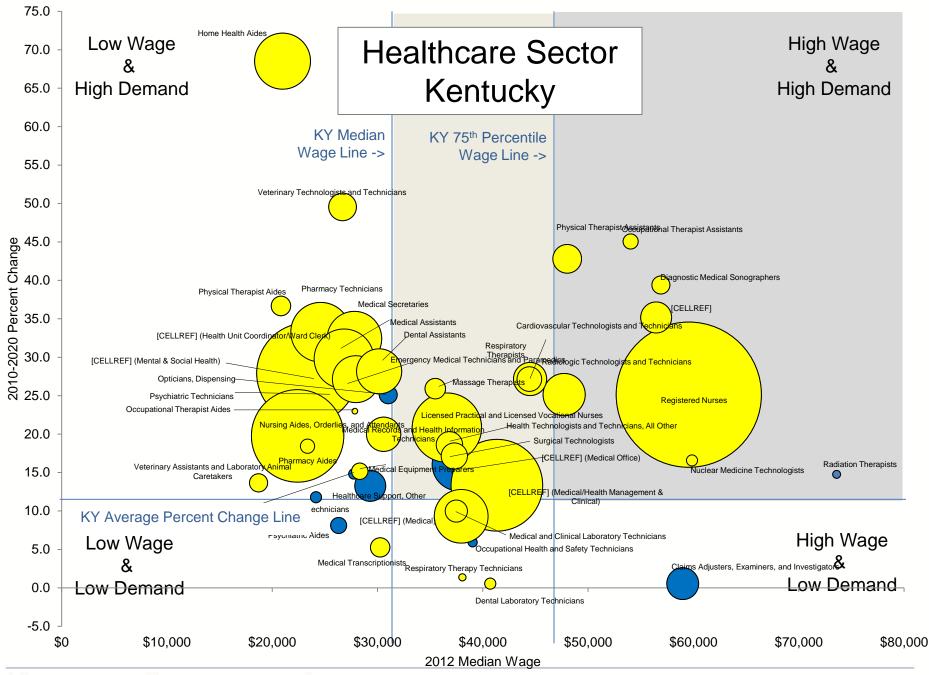
#### KENTUCKY

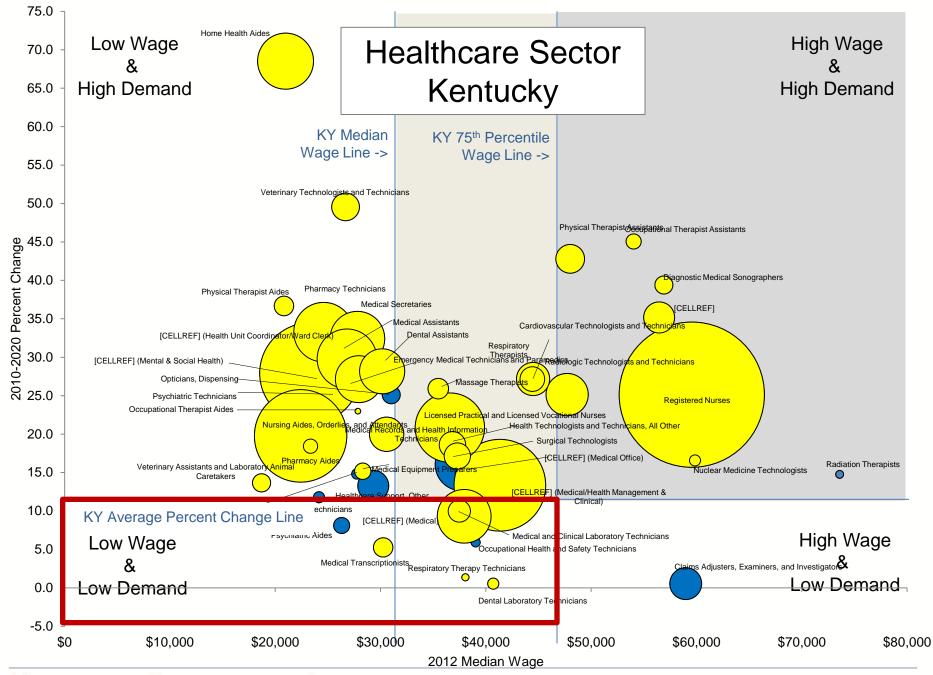
- State longitudinal data system that integrate education and workforce data
- Real-time labor market data

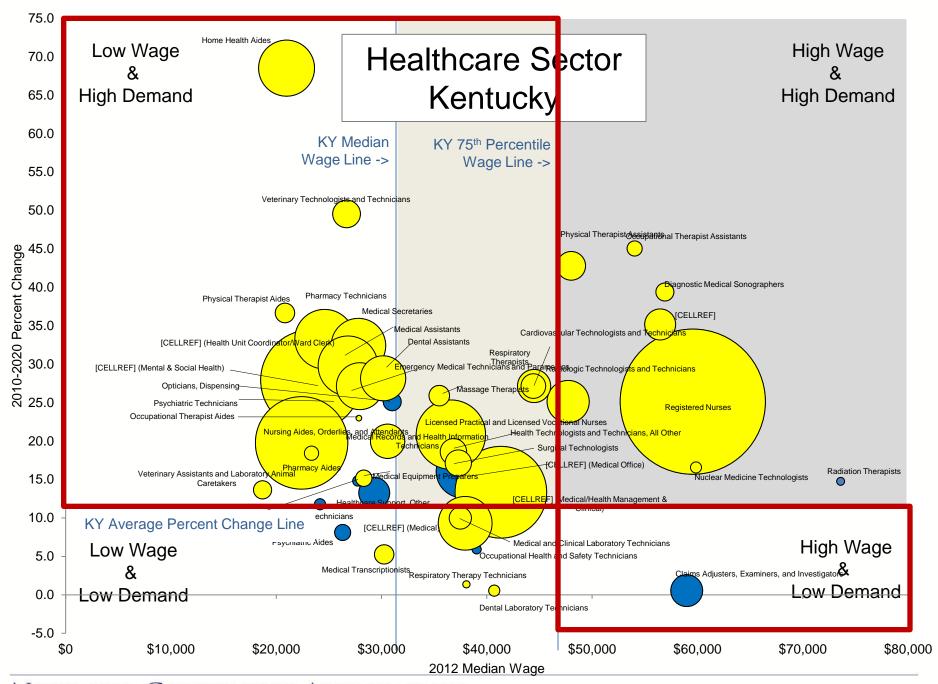


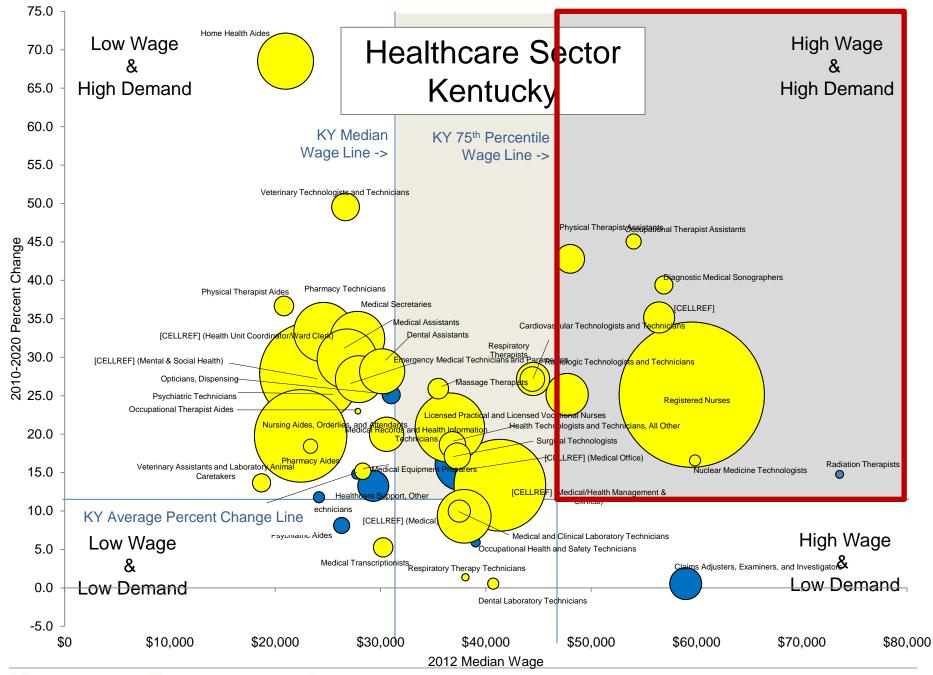
- 1. Statewide Vision
- 2. Improved Data Systems
- 3. High-Quality Partnerships
- Aligned Use of Incentives and Resources

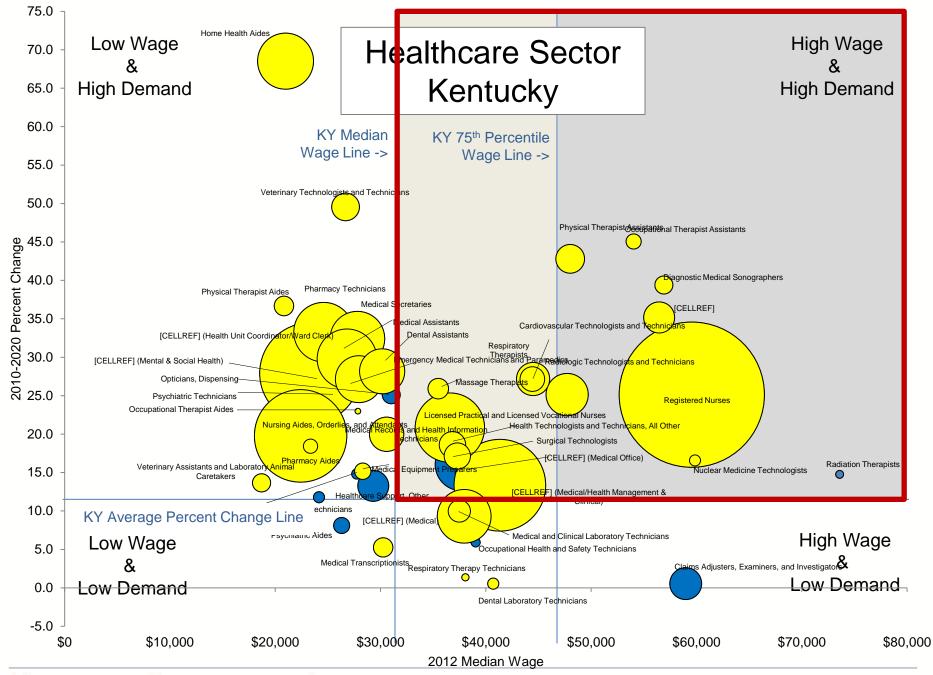














- 1. Statewide Vision
- 2. Improved Data Systems
- 3. High-Quality Partnerships
- 4. Aligned Use of Incentives and Resources



#### STATEWIDE PARTNERSHIP SUPPORT

- Where does statewide system alignment take place?
  - State Workforce Board
  - P-20W Council
  - Other Cross-Agency Entity

#### REGIONAL PARTNERSHIP SUPPORT

 Where are the strongest examples of local or regional partnerships?

#### A Better State System

- Statewide Vision
- 2. Improved Data Systems
- 3. High-Quality Partnerships
- Aligned Use of Incentives and Resources

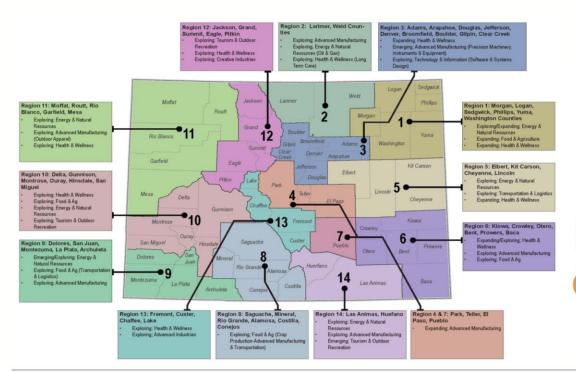
#### Sector Partnership Strategic Industry Strategic Partners create a Career Pathway System Input from based on industry industry Partnership synergie Industry Career Cluster **Pathway** System



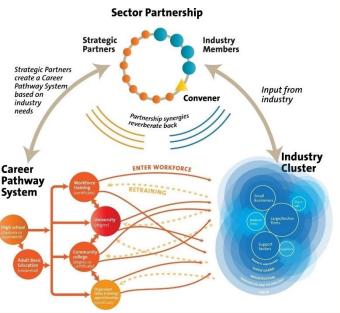
#### REGIONAL PARTNERSHIP SUPPORT

#### **Colorado:**

Regional sector partnership & career pathway initiatives



- 1. Statewide Vision
- 2. Improved Data Systems
- 3. <u>High-Quality Partnerships</u>
- 4. Aligned Use of Incentives and Resources

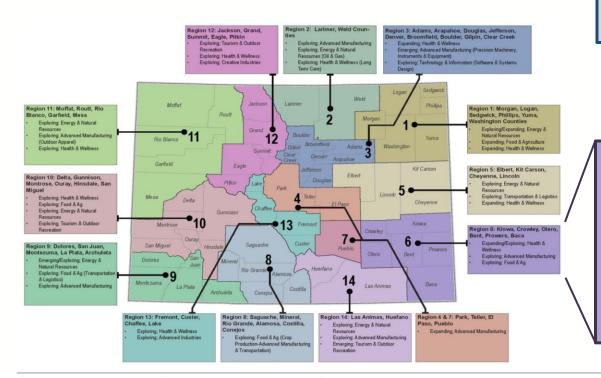




#### REGIONAL PARTNERSHIP SUPPORT

#### Colorado:

Regional sector partnership & career pathway initiatives



#### A Better State System

- 1. Statewide Vision
- 2. Improved Data Systems
- 3. High-Quality Partnerships
- 4. Aligned Use of Incentives and Resources

Region 6: Kiowa, Crowley, Otero, Bent, Prowers, Baca

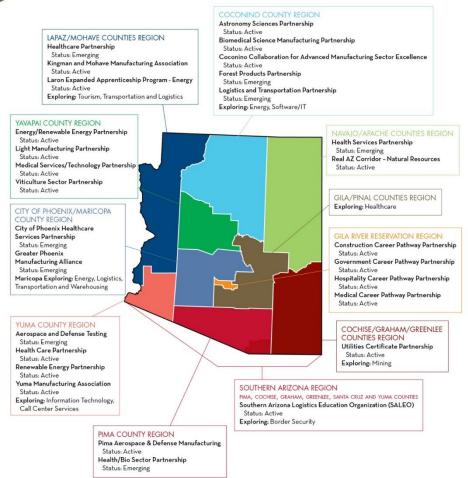
- Expanding: Health & Wellness
- Exploring: Advanced Manufacturing
- Exploring: Food & Agriculture



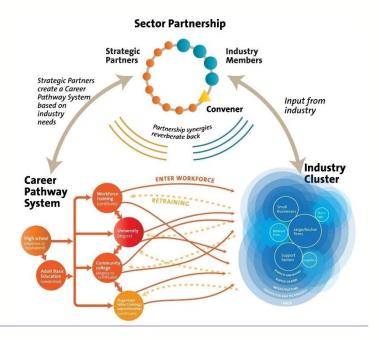
#### REGIONAL PARTNERSHIP SUPPORT



#### 2013 Arizona Sector Partnerships



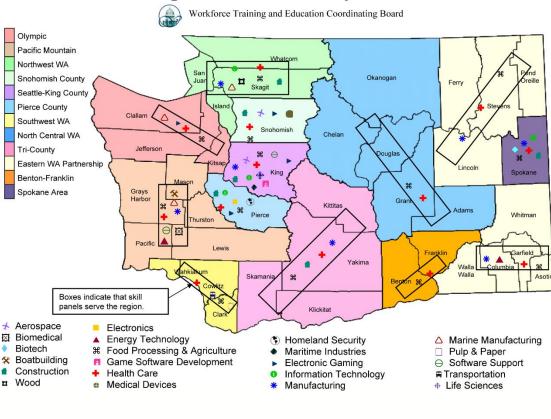
- Statewide Vision
- 2. Improved Data Systems
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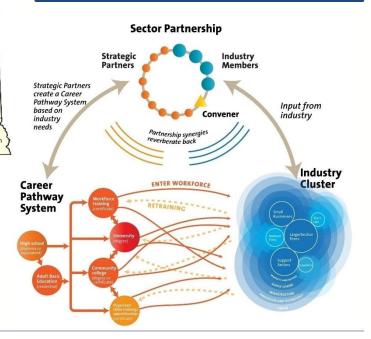


#### REGIONAL PARTNERSHIP SUPPORT

#### **Washington State Industry Skill Panels**



- Statewide Vision
- 2. Improved Data Systems
- 3. High-Quality Partnerships
- Aligned Use of Incentives and Resources





#### ALIGNED USE OF INCENTIVES AND RESOURCES

#### STATE EXAMPLES

- Statewide Asset or Capacity Mapping
- Performance Funding Programs
- Workforce Board Certification Process
- Cross-System Grant Funding and Review

- Statewide Vision
- 2. Improved Data Systems
- 3. High-Quality Partnerships
- 4. Aligned Use of Incentives and Resources

# America Works:

Education and Training for Tomorrow's Jobs

