



Oklahoma's Ecosystems: Accelerating the Growth of the State's Economic Prosperity

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OKLAHOMA
DEPARTMENT OF COMMERCE

Goals

- Prioritize Resources
- Align Policies
- Maximize Outcomes
- Require Accountability



Methodology

Sales Revenue
Export Share
Wages

Wealth
Generation

Location Quotient
Physical Assets
Workforce

Growth
Potential

Competitive
Advantage

New Markets
Industry Trends
Number of Establishments

Process

Step 5. Tested conclusions against macro economic data

Step 4. Aggregated findings to ecosystems that share economic characteristics

Step 3. Analyzed qualitative data including OK's physical assets, R&D expertise and workforce strengths

Step 2. Identified those industries that ranked highest in each and all of the 3 categories

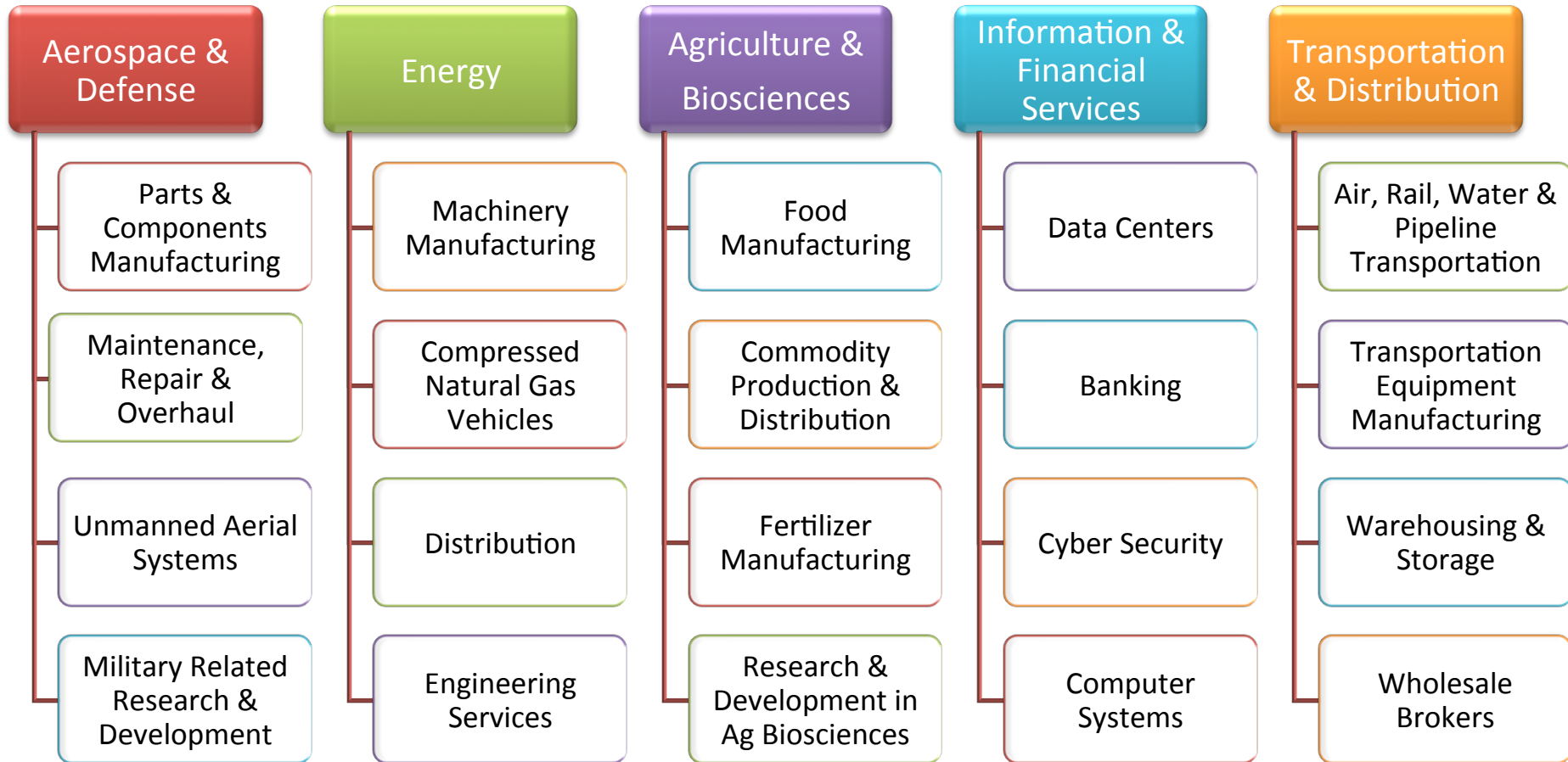
Step 1. Analyzed quantitative variables for wealth generation, growth potential and competitive advantage for 669 industries

Outcome

- ✓ 669 Industries
- ✓ 72 variables
- ✓ 48,168 data points

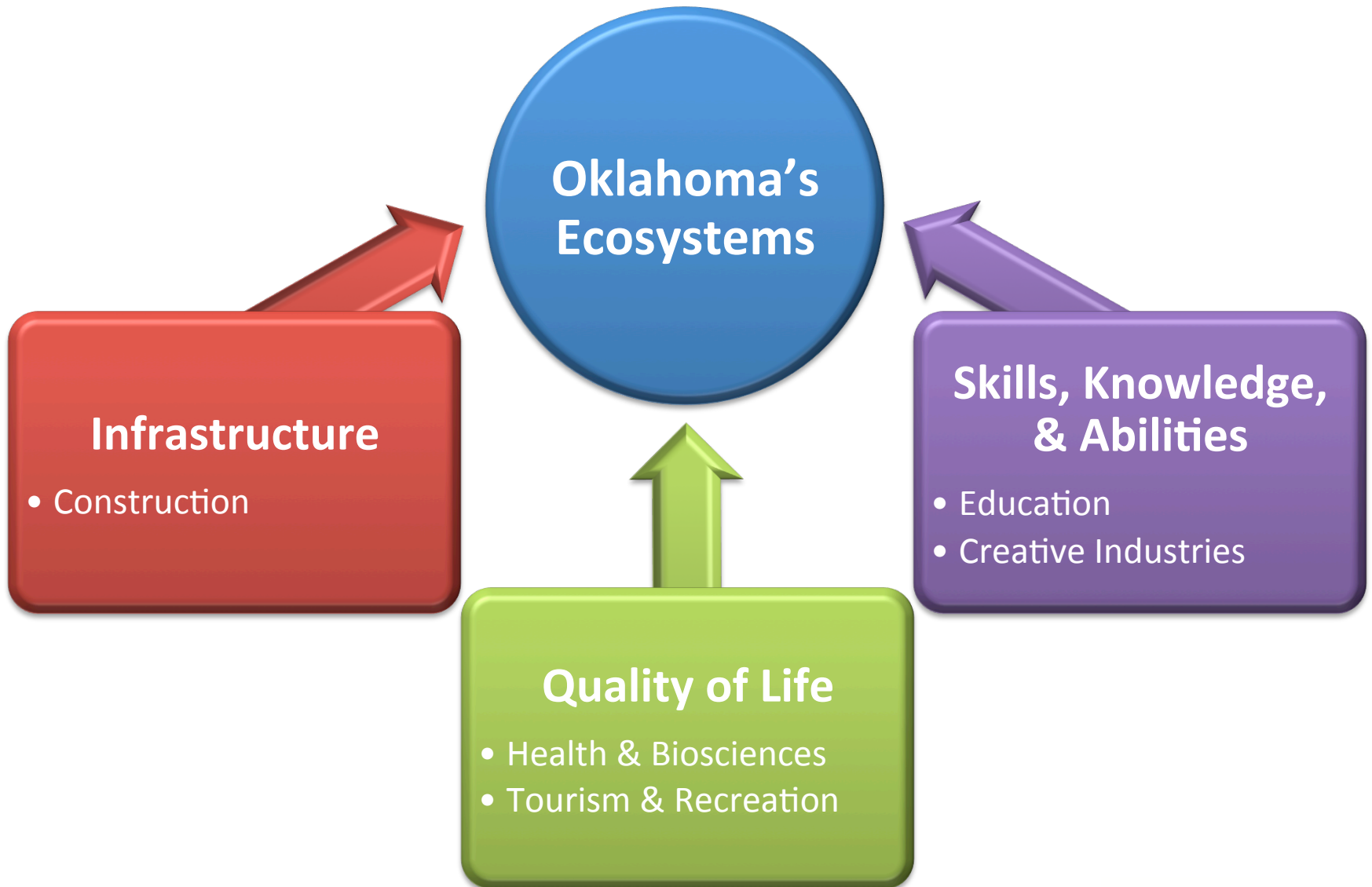


Ecosystems

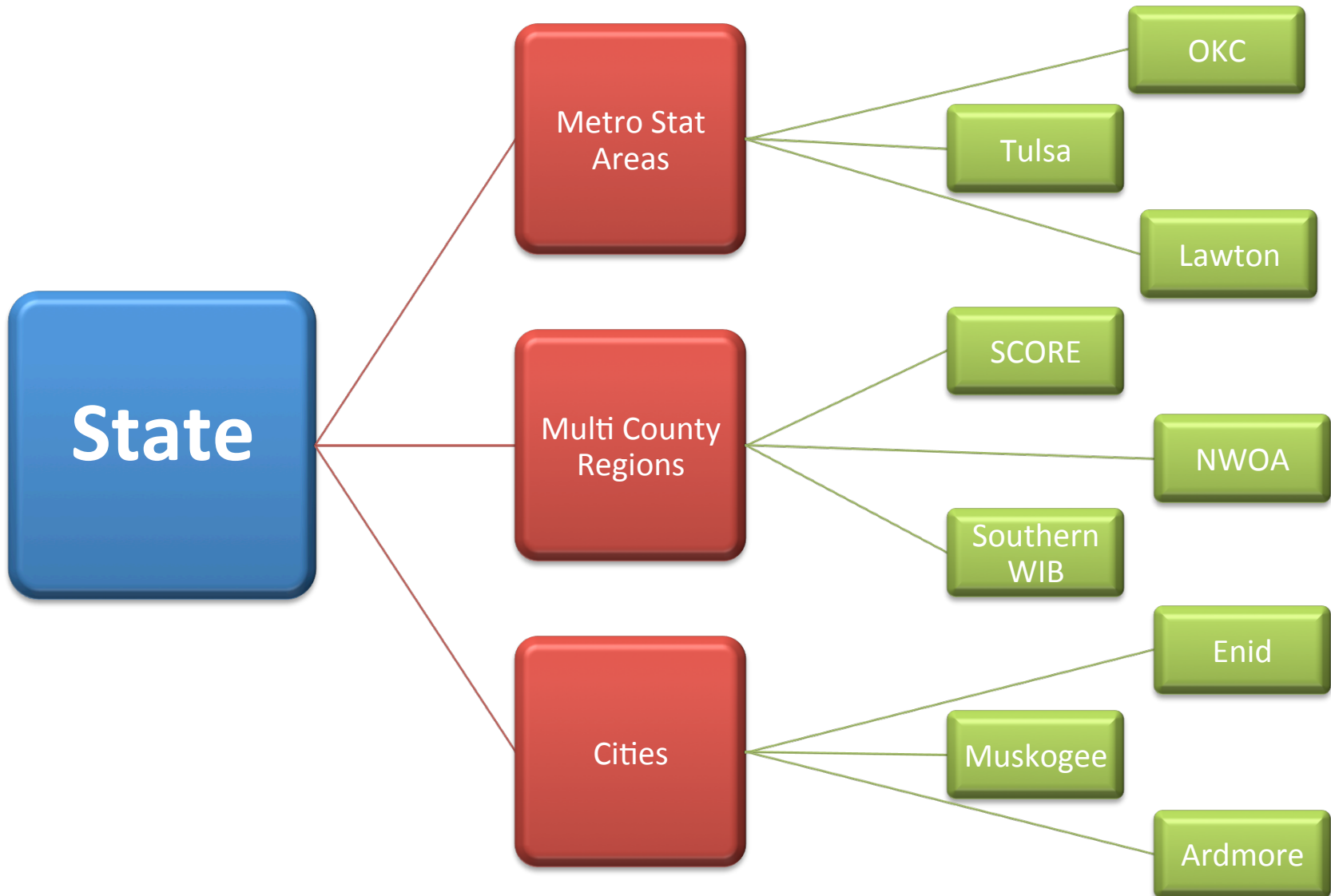


The specific industries listed under the ecosystems are neither comprehensive nor exclusive. They are only examples to demonstrate a diversity of activities. The number of individual industries included among the 5 ecosystems actually number over 200.

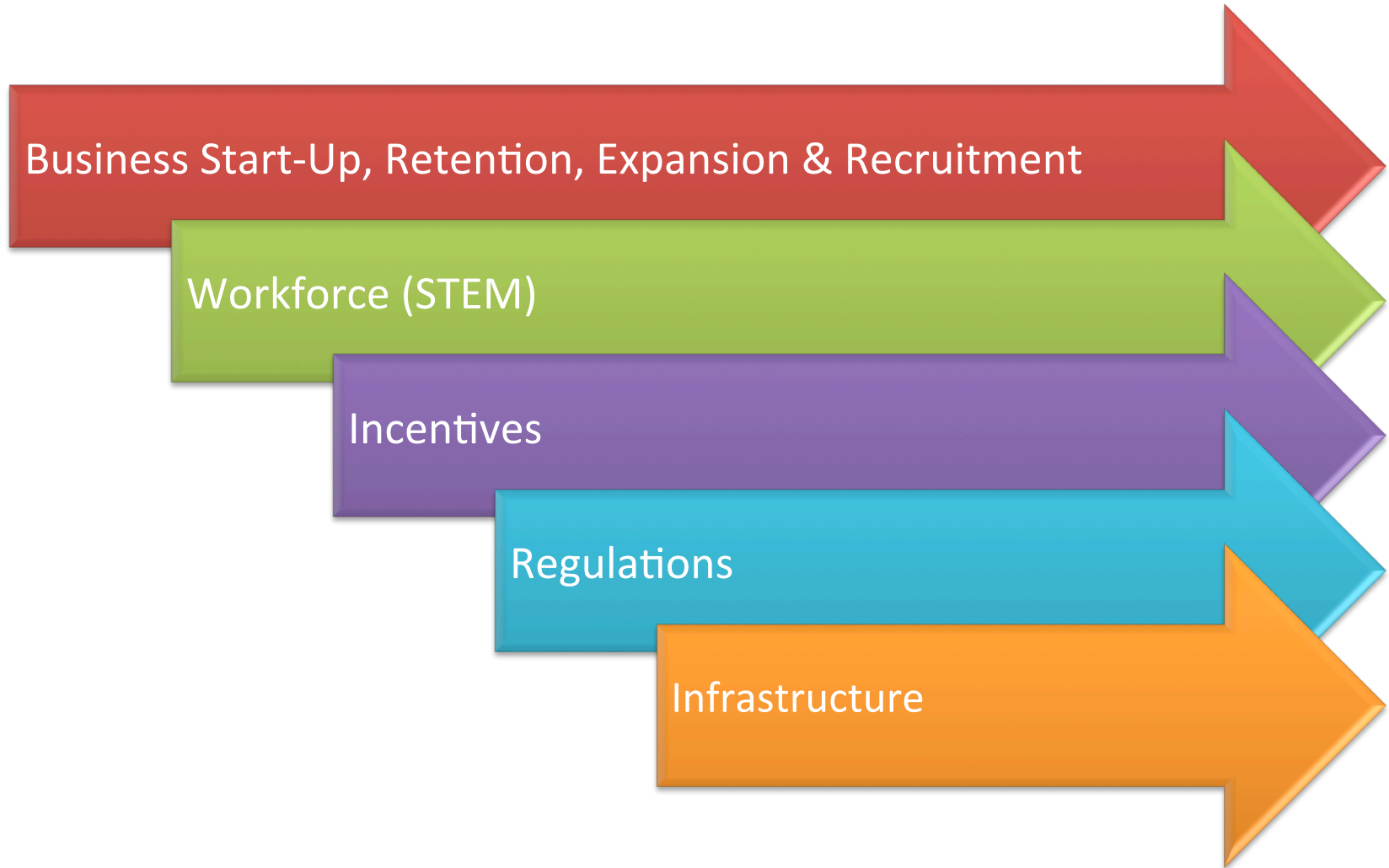
Vital Complementary Systems



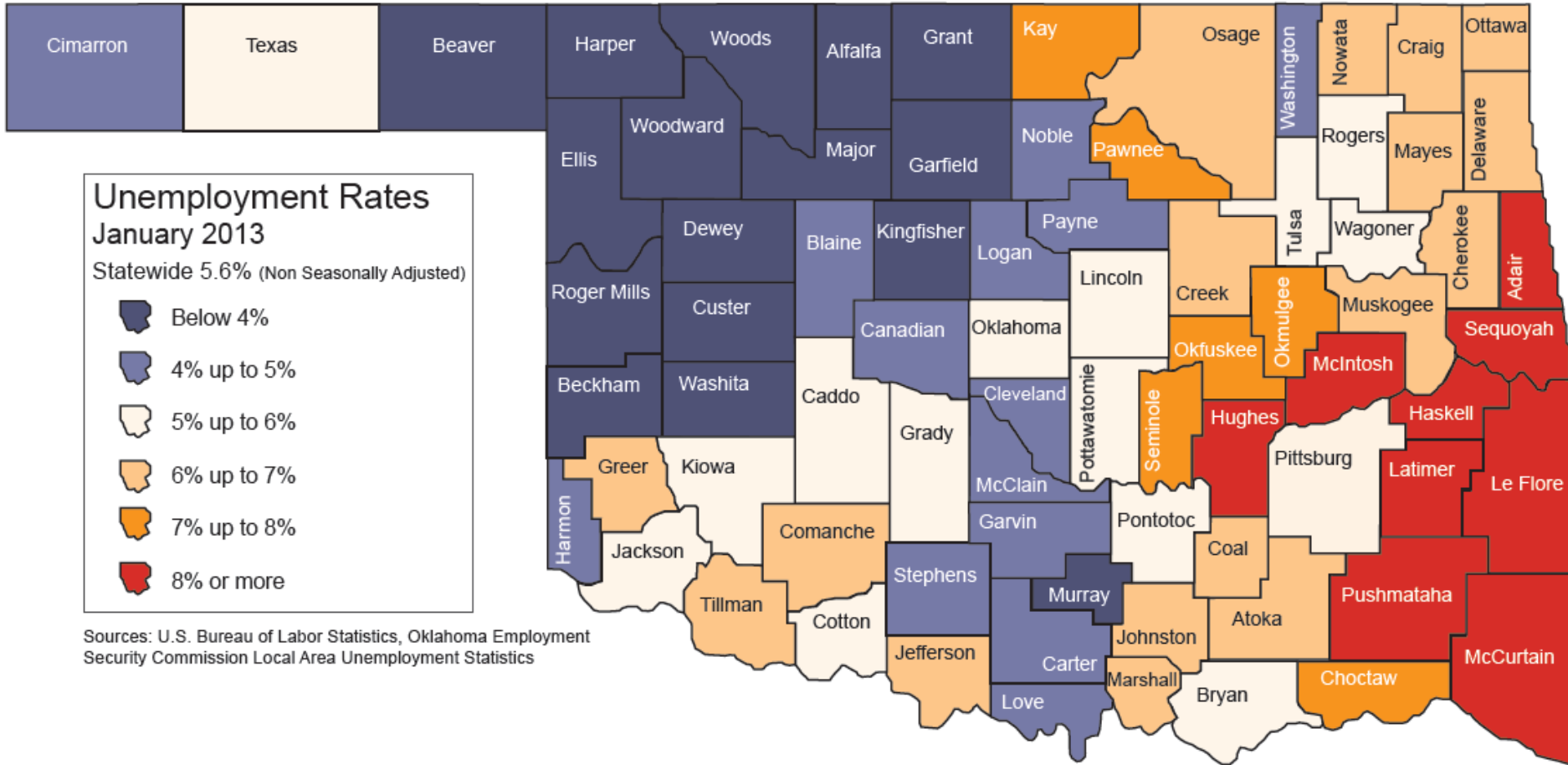
Regional & Micro Systems



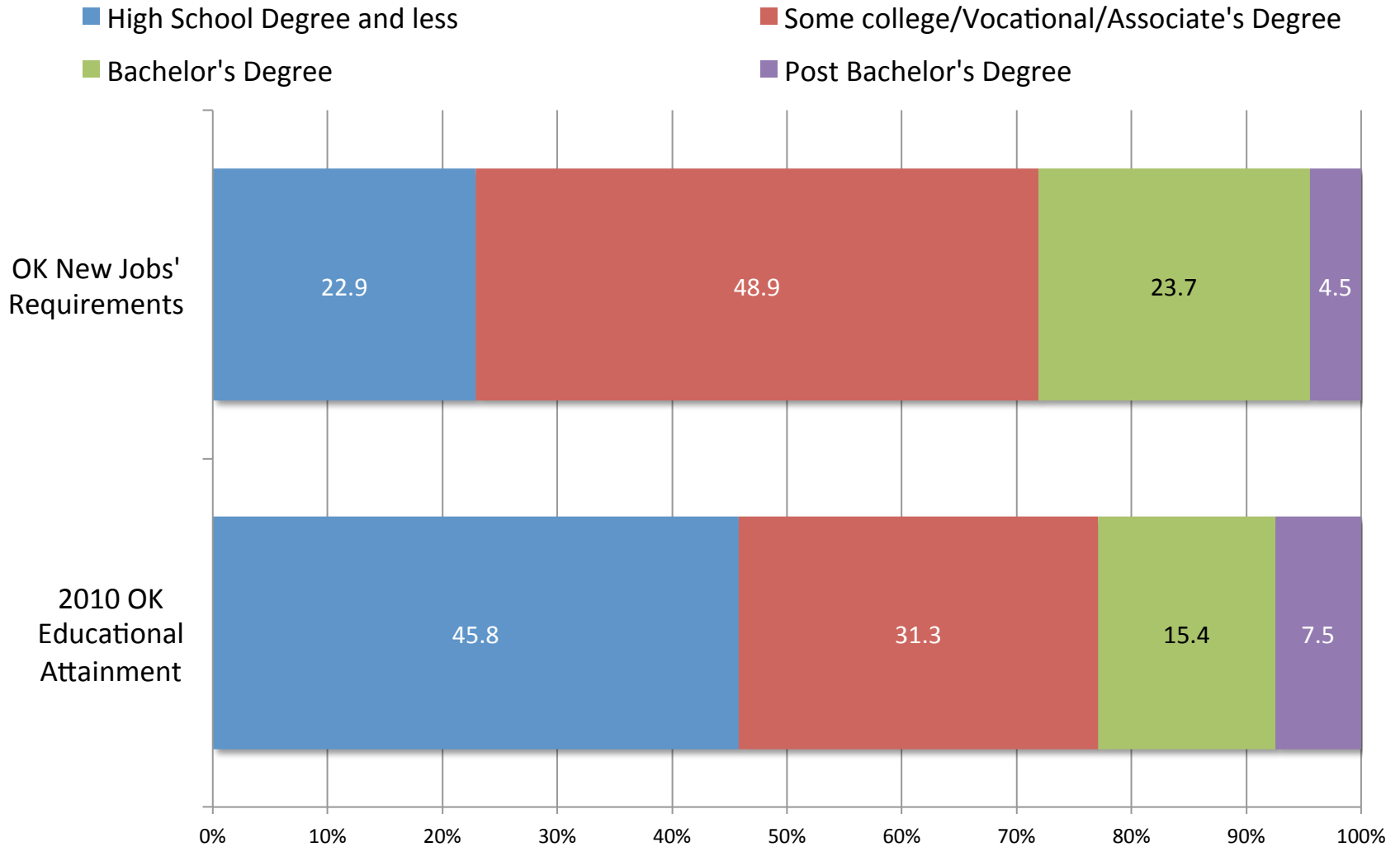
Policies



County Unemployment Rates

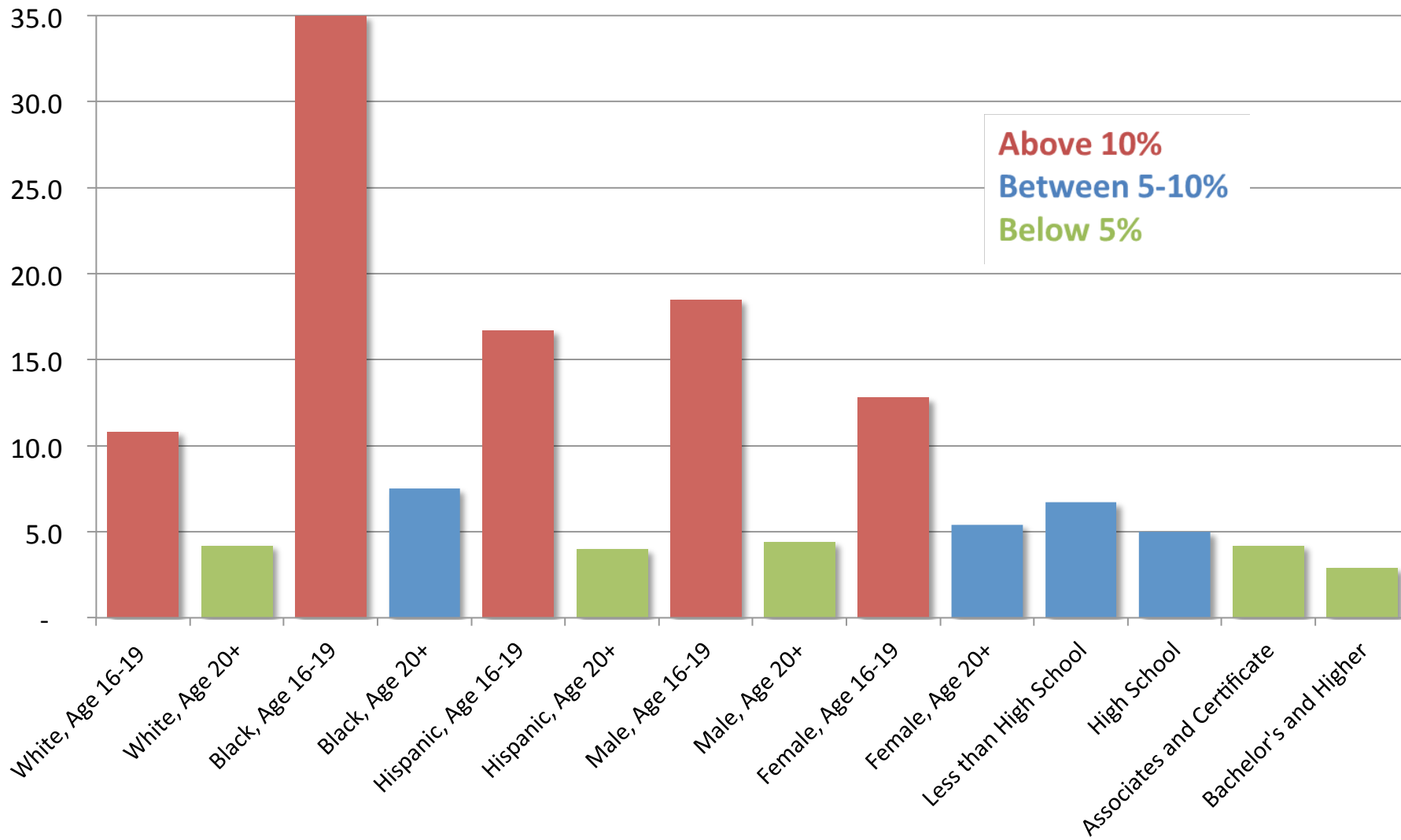


OK's Educational Gap for New Jobs



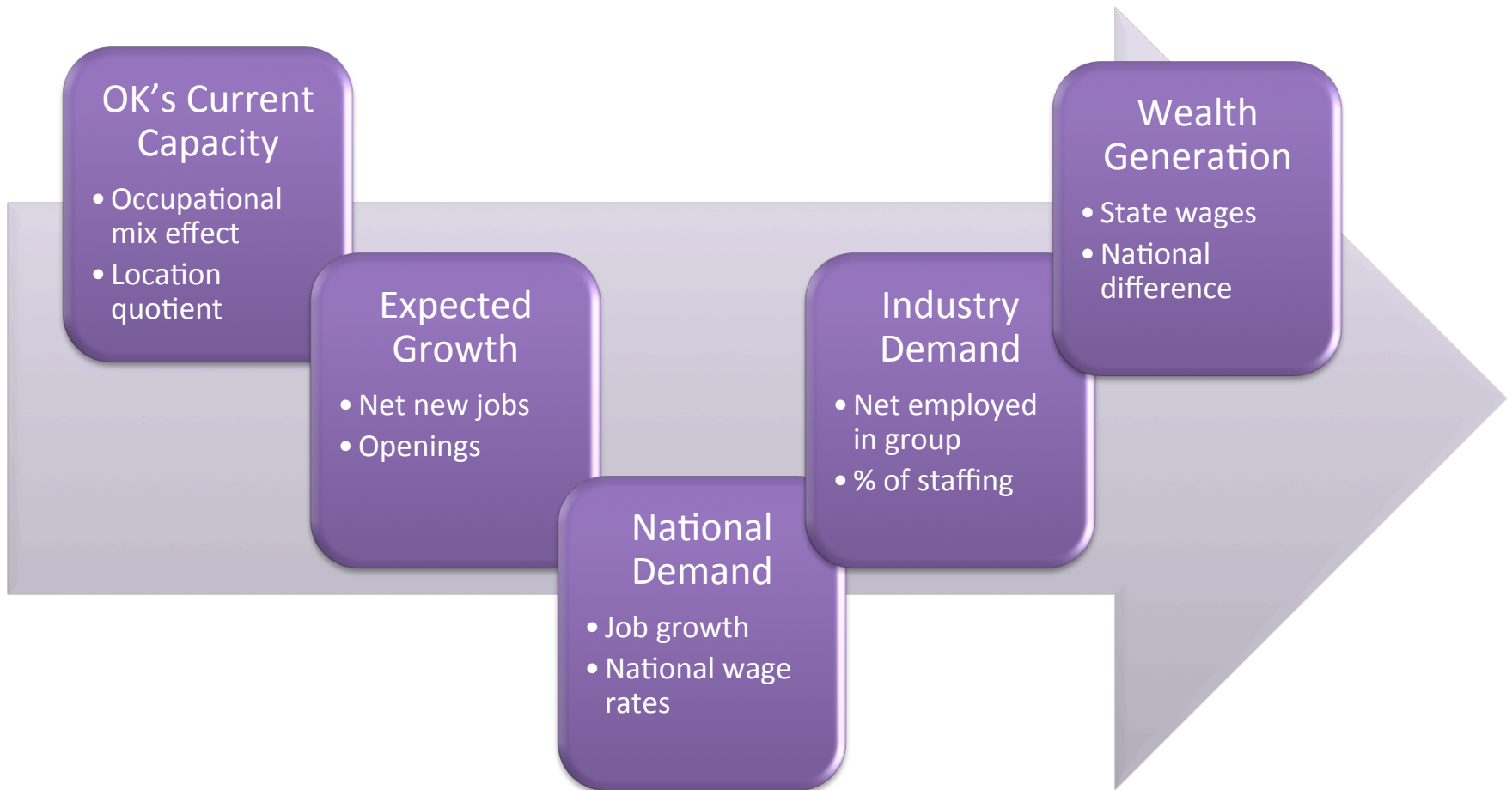
New Jobs defined as those jobs projected to be created between 2010 and 2020.
Source: 2010 ACS; EMSI Complete Employment - 2011.4

Unemployment Rates by Cohort



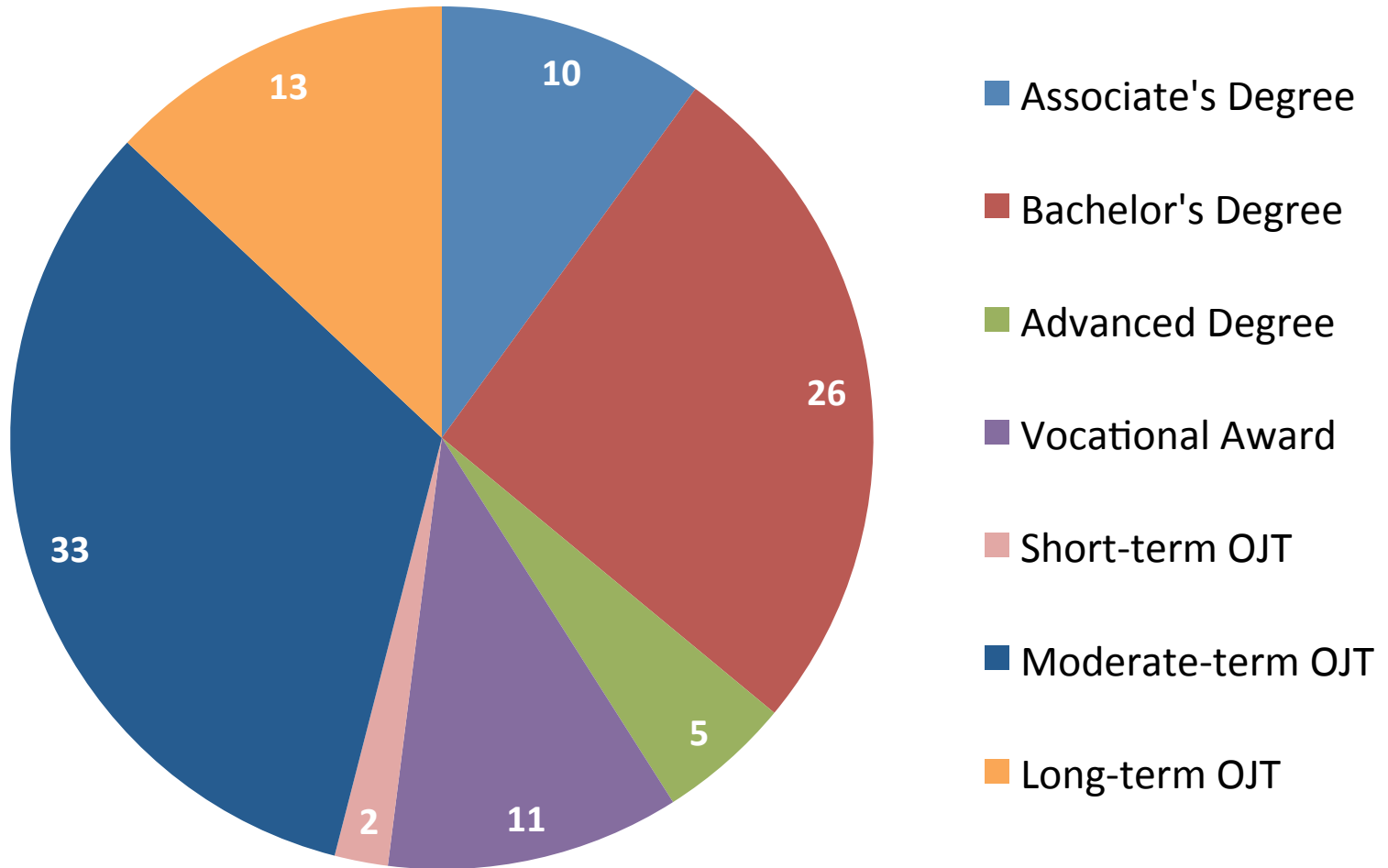
Note: Data are from BLS, CPS Rolling 12 month average which measures the Unemployment Rate of those who have actively searched for work over the preceding 4 weeks. For example, not all 16-19 year olds are included in the calculation, only those who are actively pursuing employment.

Critical Workforce for the Ecosystems



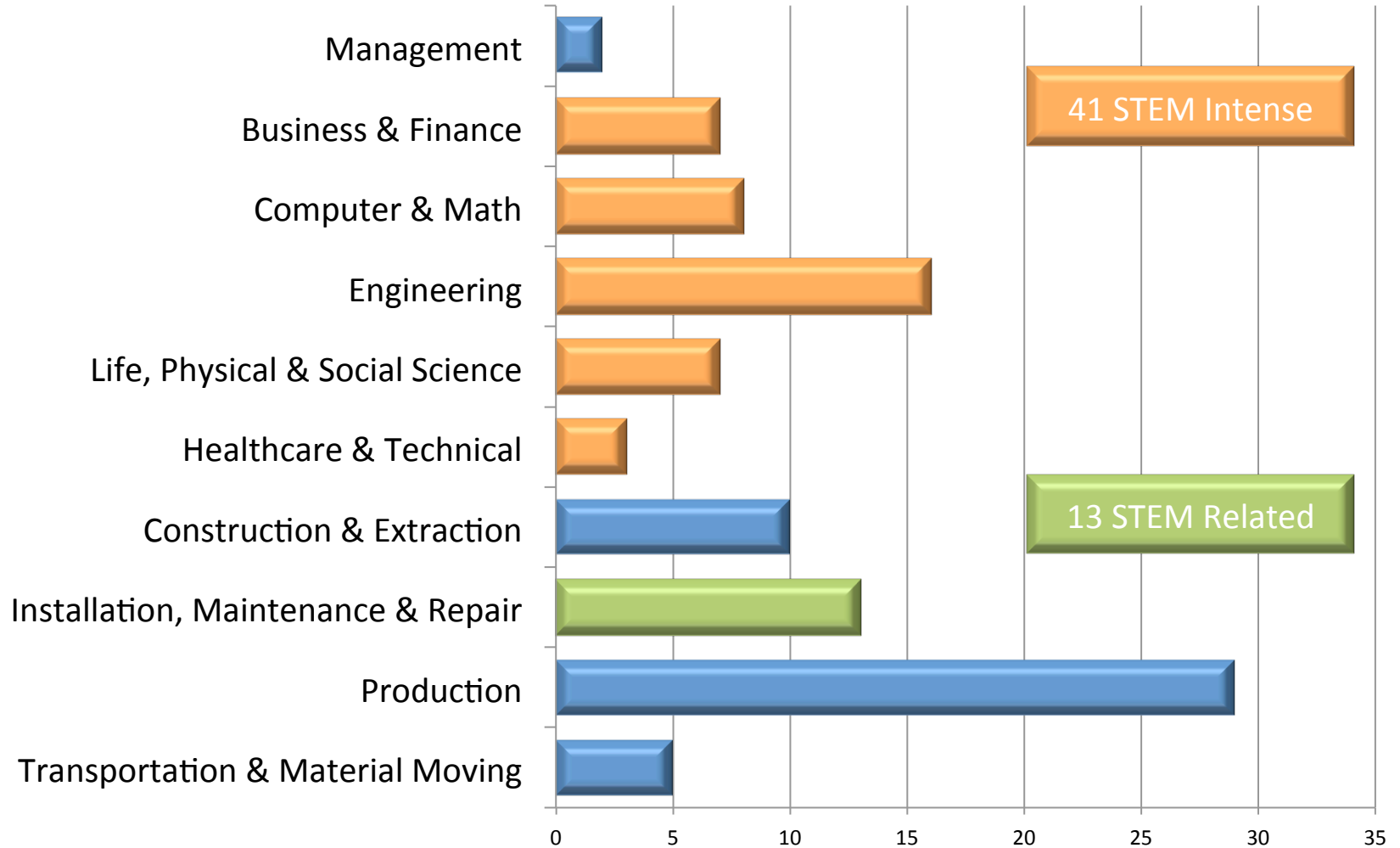
Educational Requirements

OK Ecosystems' 100 Critical Occupations by Attainment



Classification

100 Critical Occupations by Major Grouping



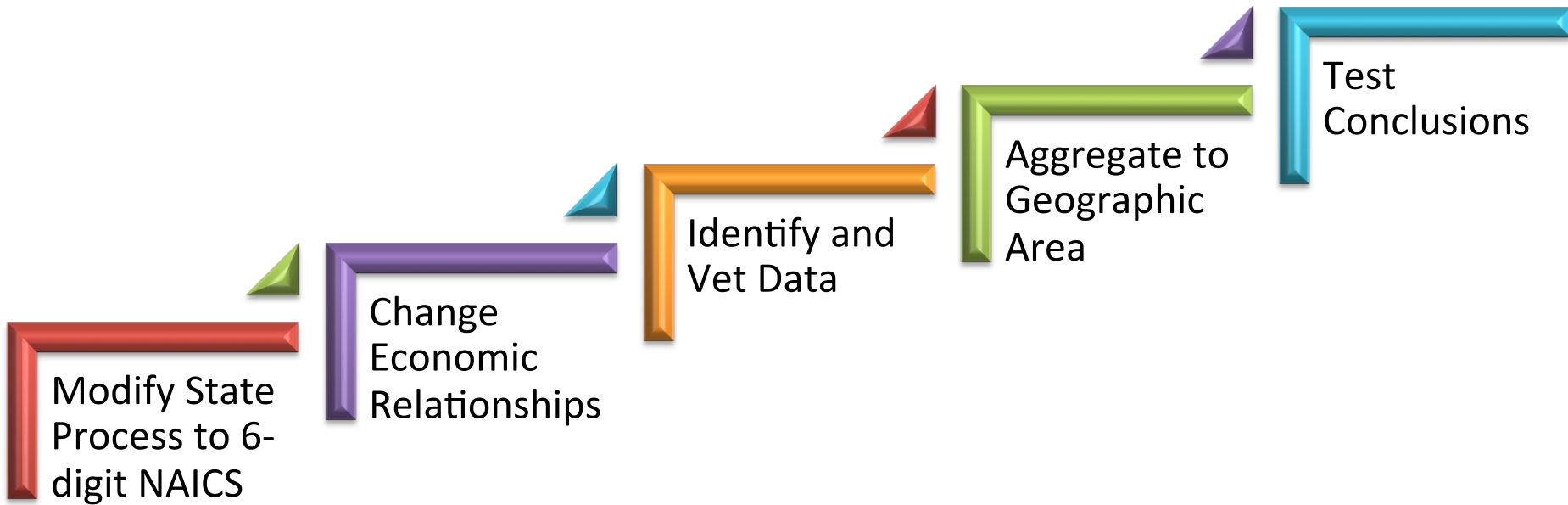
NOTE: STEM (Science, Technology, Engineering & Mathematics) qualification defined by the Georgetown University Center for Education & Workforce

Happening Now & Next Steps

- ✓ Complete College America
- ✓ “OneOklahoma” A Strategic Plan for Science & Technology in Oklahoma, 2012
- ✓ www.OKJobMatch.com
- ✓ Career Pathways
- ✓ Project Lead the Way
- ✓ Regional Analyses



Regional Process



Regional Considerations

Granularity exposes federal data inconsistencies and suppression

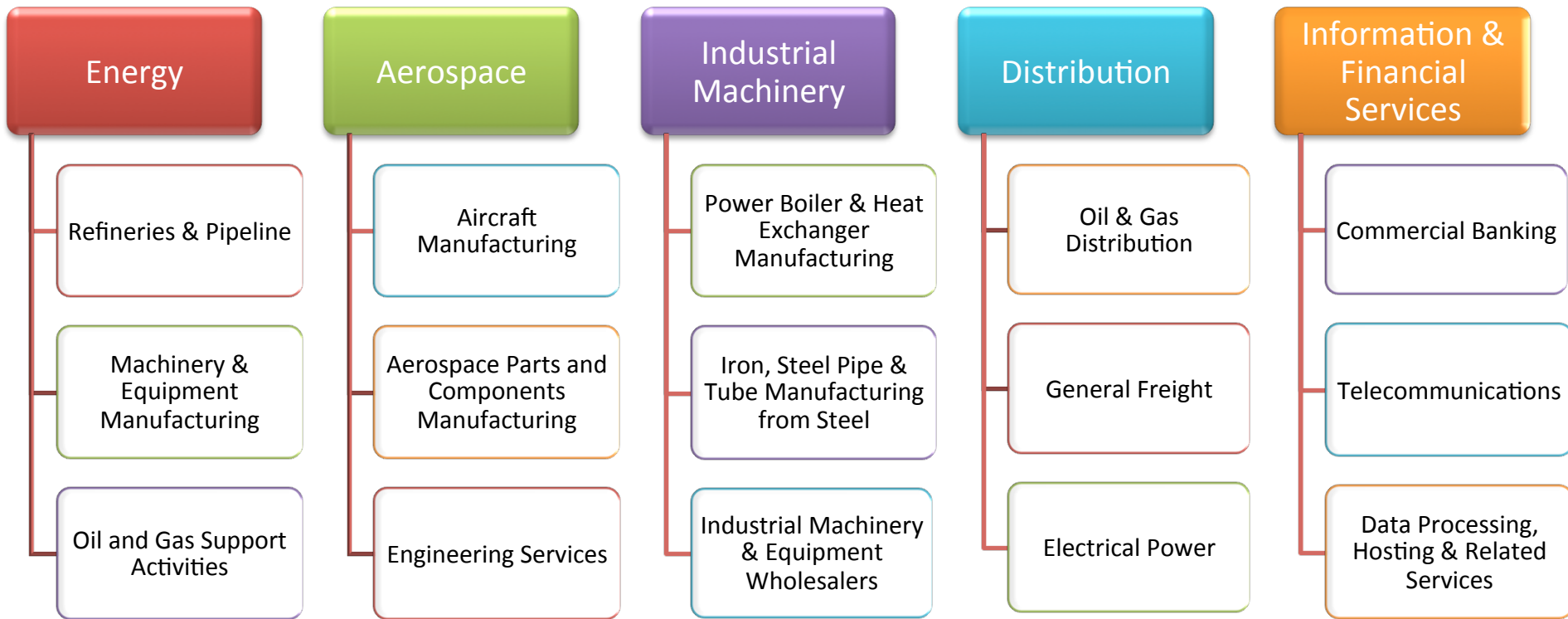
Margin of error increases

Regional diversity amplifies outliers

Arbitrary geographic boundaries suppress market relationships

Export considerations differ from state

Tulsa WIB Ecosystems



The specific industries listed under the ecosystems are neither comprehensive nor exclusive. They are only examples to demonstrate a diversity of activities.
Tulsa Note: American Airlines is classified as 48111 Scheduled Passenger Air Transportation although it is MRO.

Tulsa WIB Critical Occupations

Short-term OJT

- Construction Laborers
- Derrick Operators, Oil and Gas
- Electrical and Electronic Equipment Assemblers
- Electromechanical Equipment Assemblers
- Engine and Other Machine Assemblers
- Cutting and Slicing Machine Setters, Operators, and Tenders
- Heavy and Tractor-Trailer Truck Drivers
- Industrial Truck and Tractor Operators

Moderate OJT

- Bookkeeping, Accounting, and Auditing Clerks
- Rotary Drill Operators, Oil and Gas
- Service Unit Operators, Oil, Gas, and Mining
- Roustabouts, Oil and Gas
- Aircraft Structure, Surfaces, Rigging, and Systems Assemblers
- Structural Metal Fabricators and Fitters
- Team Assemblers
- Assemblers and Fabricators, All Other
- Computer-Controlled Machine Tool Operators
- Extruding and Drawing Machine SOT
- Rolling Machine SOT
- Cutting, Punching, and Press Machine SOT
- Drilling and Boring Machine Tool SOT
- Grinding, Lapping, Polishing, and Buffing Machine Tool SOT
- Lathe and Turning Machine Tool SOT
- Multiple Machine Tool SOT
- Mixing and Blending Machine SOT
- Inspectors, Testers, Sorters, Samplers, and Weighers
- Packaging and Filling Machine Operators and Tenders
- Coating, Painting, and Spraying Machine SOT
- Production Workers, All Other
- Excavating and Loading Machine and Dragline Operators
- Gas Compressor and Gas Pumping Station Operators
- Pump Operators
- Wellhead Pumps

Long-term OJT

- Carpenters
- Electricians
- Plumbers, Pipefitters, and Steamfitters
- Sheet Metal Workers
- Structural Iron and Steel Workers
- Mobile Heavy Equipment Mechanics, Except Engines
- Industrial Machinery Mechanics
- Machinists
- Tool and Die Makers
- Petroleum Pump System Operators, Refinery Operators, and Gaugers

Critical occupations are those that rank the highest among all qualifiers, meaning the ecosystem will not run efficiently or effectively without appropriate labor levels both in quality and quantity.

SOT is Setter, Operator and Tender

Tulsa WIB Critical Occupations

Associates/Certificates

- Computer Support Specialists
- Architectural and Civil Drafters
- Electrical and Electronics Drafters
- Mechanical Drafters
- Aerospace Engineering and Operations Technicians
- Civil Engineering Technicians
- Electrical and Electronics Engineering Technicians
- Electro-Mechanical Technicians
- Industrial Engineering Technicians
- Mechanical Engineering Technicians
- Engineering Technicians, Except Drafters, All Other
- Geological and Petroleum Technicians
- Electrical and Electronics Repairers, Commercial and Industrial Equipment
- Aircraft Mechanics and Service Technicians
- Heating, Air Conditioning, and Refrigeration Mechanics and Installers
- Welders, Cutters, Solderers, and Brazers
- Welding, Soldering, and Brazing Machine Setters, Operators, and Tenders

Bachelors

- Construction Managers
- Accountants and Auditors
- Financial Analysts
- Personal Financial Advisors
- Computer Systems Analysts
- Computer Programmers
- Software Developers, Applications
- Software Developers, Systems Software
- Database Administrators
- Network and Computer Systems Administrators
- Information Security Analysts, Web Developers, and Computer Network Architects
- Aerospace Engineers
- Civil Engineers
- Electrical Engineers
- Electronics Engineers
- Industrial Engineers
- Mechanical Engineers
- Petroleum Engineers
- Geoscientists
- Securities, Commodities, and Financial Services Sales Agents
- Sales Representatives, Wholesale and Manufacturing, Technical and Scientific Products

Advanced with Experience

- General and Operations Managers
- Computer and Information Systems Managers
- Financial Managers
- Industrial Production Managers
- Architectural and Engineering Managers
- Management Analysts

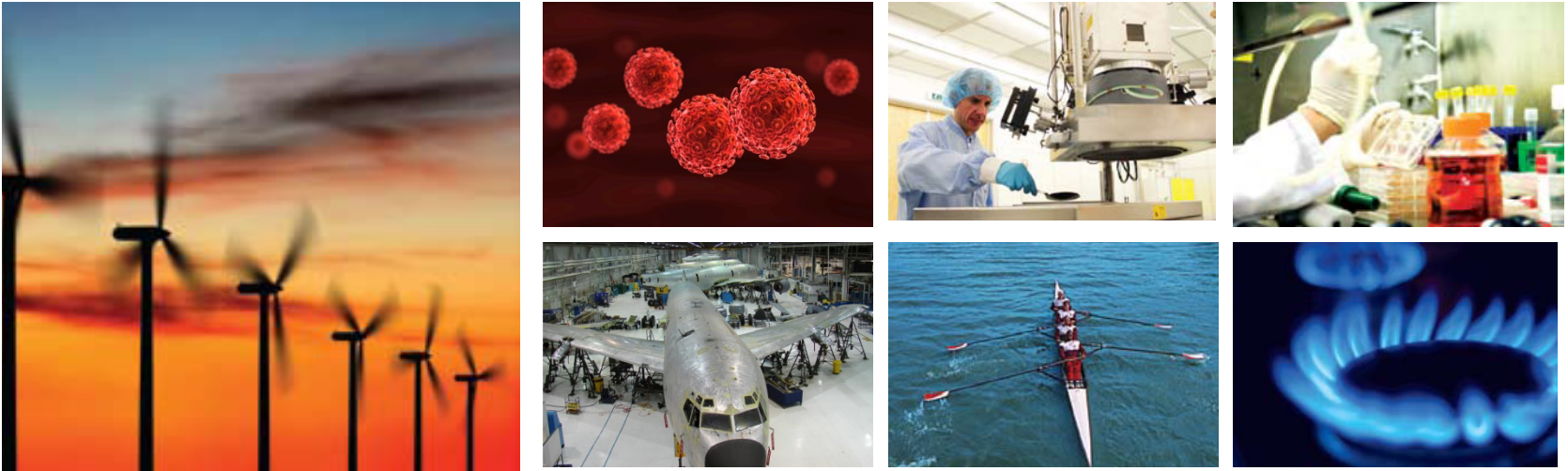
Work Experience

- First-Line Supervisors of Construction Trades and Extraction Workers
- First-Line Supervisors of Mechanics, Installers, and Repairers
- First-Line Supervisors of Production and Operating Workers
- First-Line Supervisors of Transportation and Material-Moving Machine and Vehicle Operators

Tulsa WIB Priorities

High Priority

- Heavy and Tractor-Trailer Truck Drivers
- Accountants and Auditors
- Bookkeeping, Accounting, and Auditing Clerks
- Carpenters
- Electricians
- Computer Support Specialists
- Petroleum Engineers
- Computer Systems Analysts
- Aircraft Mechanics and Service Technicians
- Information Security Analysts, Web Developers, and Computer Network Architects
- Computer Programmers
- Construction Managers



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