Introduction

High-quality K-12 career and technical education (CTE) pathways that are aligned with regional economic needs can provide students with the knowledge, skills and credentials that can lead to continued advancement and economic security.

Northwest Arkansas (NWA) school districts offer students a range of CTE pathways to pursue based on their interests, but little is known about the quality and accessibility of these programs at a regional level. To learn more, the Walton Family Foundation engaged Insightful Education Solutions to research the following:

1. What constitutes a high-quality program?
2. Do NWA students have access to high-quality CTE programs?
3. How do school CTE leaders and students feel about CTE as a pathway to postsecondary success?

The findings, a mixture of quantitative and qualitative data, can hopefully help the region’s educators, postsecondary institutions and employers take steps to provide NWA students with the pathways that matter most for success after high school.

Based on these findings, recommendations are made regarding potential areas of programmatic focus and future research to address identified gaps and build on current strengths and interest in achieving greater access to high-quality programs across the region.
Research Question #1:

What Constitutes a High-Quality Program?
To learn from regional expertise and develop a framework to guide the research, we first convened an advisory group and researched best practices from other states to form a shared definition of high-quality CTE pathways.

A high-quality CTE pathway is a sequence of aligned, interconnected academic and workforce experiences that enable learners to master a particular subject, set of competencies or program, earn one or more employer-valued credentials and go on to pursue an occupation with sustainable wages.

Note: Strong state and local CTE programs should contain a range of high-quality pathways across a variety of industry sectors.
Attributes of a High-Quality CTE Pathway

In addition to the conceptual definition, these attributes were developed to serve as a rubric for identifying and building high-quality program pathways.

- Aligns with high-demand, high-skill and higher-wage (H³) sectors and occupations
- Offers credentials valued by employers
- Reflects courses that are sequential and progressive
- Includes robust standards that represent the necessary academic, technical and employability knowledge and skills
- Includes courses and/or exams eligible for early postsecondary credit and aligns with postsecondary credentialed programs
- Incorporates a continuum of work-based learning experiences

Note: These attributes are consistent with the federal Perkins V federal grant definition as well as examples of high-quality CTE pathways in leading states and regions.
Example of a High-Quality CTE Pathway

Mechatronics/Advanced Manufacturing pathway adapted from Tennessee
Research Question #2:

Do NWA students have access to high-quality CTE programs?
### Top 10 Industry Sectors - Northwest Arkansas

<table>
<thead>
<tr>
<th>Sector</th>
<th>Employed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Healthcare &amp; Social Assistance</td>
<td>30,210</td>
</tr>
<tr>
<td>Manufacturing</td>
<td>29,104</td>
</tr>
<tr>
<td>Retail Trade</td>
<td>28,457</td>
</tr>
<tr>
<td>Accommodations &amp; Food Service</td>
<td>25,276</td>
</tr>
<tr>
<td>Management of Companies &amp; Enterprises</td>
<td>25,168</td>
</tr>
<tr>
<td>Educational Services</td>
<td>21,456</td>
</tr>
<tr>
<td>Transportation &amp; Warehousing</td>
<td>19,683</td>
</tr>
<tr>
<td>Construction</td>
<td>17,871</td>
</tr>
<tr>
<td>Professional, Scientific &amp; Technical Svs.</td>
<td>15,795</td>
</tr>
<tr>
<td>Admin. Support &amp; Waste Management and Remediation Svs.</td>
<td>13,158</td>
</tr>
</tbody>
</table>

### Top 10 Occupations - Northwest Arkansas

<table>
<thead>
<tr>
<th>Occupation</th>
<th>Employed</th>
<th>Annual Mean Wage</th>
</tr>
</thead>
<tbody>
<tr>
<td>General &amp; Operation Managers</td>
<td>6,453</td>
<td>$97,200</td>
</tr>
<tr>
<td>K-12 Educators</td>
<td>5,279</td>
<td>$63,100</td>
</tr>
<tr>
<td>First-Line Supervisors</td>
<td>4,838</td>
<td>$65,050</td>
</tr>
<tr>
<td>Registered Nurses</td>
<td>4,047</td>
<td>$71,500</td>
</tr>
<tr>
<td>Sales Reps, Wholesale &amp; Manufacturing</td>
<td>3,304</td>
<td>$88,900</td>
</tr>
<tr>
<td>Software, Web Developers, Programmers</td>
<td>2,802</td>
<td>$95,100</td>
</tr>
<tr>
<td>Accountants &amp; Auditors</td>
<td>2,256</td>
<td>$78,600</td>
</tr>
<tr>
<td>Logisticians &amp; Project Mgmt. Specialists</td>
<td>2,011</td>
<td>$79,700</td>
</tr>
<tr>
<td>Business Operations Specialists</td>
<td>1,932</td>
<td>$76,200</td>
</tr>
<tr>
<td>Financial Managers</td>
<td>1,740</td>
<td>$150,600</td>
</tr>
</tbody>
</table>

Source: Jobs EQ/Data from 2022 Q4

Workforce Alignment

An initial step in assessing the quality of CTE programs in NWA was to map out regional workforce needs. The following were identified as high-demand, high-skill and higher-wage (H³) sectors/occupations.
With workforce data in hand, we examined the number of CTE completers (those who have completed 3+ courses within a career cluster) by program of study.

Over the last three years, just three* of the region’s top 10 completed CTE pathways are aligned with H^3 jobs. In contrast, the top five completed pathways are in agriculture-related fields. Agriculture, Forestry, Fishing and Hunting industry sectors make up only 1.2% of the overall workforce in NWA.

The top three sectors featuring high-skill and higher-wage occupations that are projected to grow the most in the next five years are:

- **Healthcare and Social Assistance**: 3,621 jobs
- **Management of Companies and Enterprises**: 2,495 jobs
- **Manufacturing**: 2,119 jobs

By comparison, regional jobs in the agriculture sector are projected to grow by only 180 jobs over this same period.

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### Top 10 Programs of Study by Completions (2020-2022)

<table>
<thead>
<tr>
<th>Program of Study</th>
<th>Completions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agribusiness Systems</td>
<td>4,232</td>
</tr>
<tr>
<td>Agricultural Power, Structural and Technical Systems</td>
<td>3,107</td>
</tr>
<tr>
<td>Animal Systems</td>
<td>1,985</td>
</tr>
<tr>
<td>Plant Systems</td>
<td>1,637</td>
</tr>
<tr>
<td>Natural Resources/Environmental Service Systems</td>
<td>1,636</td>
</tr>
<tr>
<td>Office Administration*</td>
<td>1,447</td>
</tr>
<tr>
<td>Pre-Educator*</td>
<td>1,121</td>
</tr>
<tr>
<td>Medical Professions*</td>
<td>1,097</td>
</tr>
<tr>
<td>Advanced Nutrition and Dietetics</td>
<td>977</td>
</tr>
<tr>
<td>Family and Consumer Sciences - Family Studies</td>
<td>910</td>
</tr>
</tbody>
</table>

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*Indicates programs of study with fewer completions.
We found significant misalignment between CTE pathway completions and regional workforce needs. Only three of the top 10 completed pathways are directionally aligned with $H^3$ occupations.

### Top 10 CTE Pathways by Completion
- Agribusiness Systems
- Agricultural Power, Structural & Technical
- Animal Systems
- Natural Resources/Environmental Systems
- Plant Systems
- Office Administration
- Pre-Educator
- Medical Professions
- Advanced Nutrition & Dietetics
- Family & Consumer Sciences – Entrepreneurial Design

### Top 10 High-Demand, High-Skill, Higher-Wage Occupations
- General & Operational Managers
- K-12 Educators
- First-Line Supervisors
- Registered Nurses
- Sales Reps., Wholesale & Manufacturing
- Software, Web Developers, Programmers
- Accountants & Auditors
- Logisticians & Project Management Specialists
- Business Operations Specialists
- Financial Managers
Program Quality

Too few K-12 students who complete CTE pathways are achieving metrics associated with pathway quality. On average, 34% of completers also earned early postsecondary credit, 17% earned an industry credential, and 20% went on to enroll in a postsecondary program in the state after high school.

Early postsecondary credit had the highest attainment rate across all programs; however, it is still relatively low. Students completing formal work-based learning experiences, another attribute of a high-quality program, were even lower than the three indicators referenced here with just 2% of completers in the last three years in Benton and Washington Counties attaining a WBL course credit.

Percent of completers that achieve Industry Certification, Postsecondary Matriculation or Early Postsecondary Credit varies widely across programs.

Note: Industry credential data was not collected in 2019-20. Postsecondary matriculation data was not available for 2021-22.
Research Question #3:

How do school CTE leaders and students feel about CTE as a pathway to postsecondary success?
CTE Leader Survey

To better understand perceptions, successes and challenges of current CTE programs in NWA, we worked with the Office of Education Policy at the University of Arkansas to conduct a survey of CTE leaders in the spring of 2023. Respondents included CTE coordinators, principals/administrators and superintendents.

- 100% of respondents who responded that connecting academic learning to real-world skills is "As important as" meeting college entrance requirements.

- 100% of respondents who responded that CTE is "As important as" math, English, social studies and science.

- 100% of respondents who responded that gaining exposure to several different careers is "As important as" college planning.

n= 42 respondents
The survey found that CTE leaders in NWA highly valued the importance of outcomes associated with high-quality CTE programs and pathways.

Despite challenges in alignment and quality, there is overwhelming enthusiasm and support for CTE programs in the region.

- **Students possess the knowledge, skills and experience needed in their chosen field or occupation.**
  - Important or Very Important: 98%
  - Important or Very Important: 2%

- **Students have interacted with employers in their chosen field or occupation.**
  - Important or Very Important: 88%
  - Important or Very Important: 12%

- **Students can continue working towards a credential aligned with their CTE pathways at the postsecondary/advanced trades level.**
  - Important or Very Important: 93%
  - Important or Very Important: 7%

*n= 42 respondents*
CTE leaders noted three key challenges in being able to offer higher-quality CTE programs to their students.

Top Challenge #1
Aligning CTE pathways with high-skill, high-demand and higher-wage occupations in our region
Noted by 60%

Top Challenge #2
Having access to sustainable funding that can support high-priority CTE pathways
Noted by 57%

Top Challenge #3
Finding and/or hiring teachers with the advanced technical knowledge and skills to teach CTE courses
Noted by 55%

n= 42 respondents
Overall, CTE is a priority and valued by districts. With a couple of exceptions, most administrators and CTE directors pointed to a strong district/school culture for CTE.

Lack of intentional dedicated funding means that what gets offered is up to districts and not necessarily reflective of regional needs. Most CTE directors and administrators expressed the desire to offer more/different programs if they had more funding, the right staff and equipment, etc.

Distance to/from postsecondary providers and lack of articulation agreements is a real barrier for students in smaller districts. Some students already spend a long time getting to/from their high school. Additional long distances to and from postsecondary partners make those providers difficult to access.

Finding and working with employers is very much a district-by-district effort. CTE coordinators and administrators felt like this is an area in which they could use more support.
In focus groups with students, we heard:

- **CTE provides purpose and relevance to high school.**
  Students spoke passionately about the opportunities to learn real-world skills and make connections with postsecondary experiences.

- **For rural district students, CTE allows them to meet people from across the state and nation.**
  The student organizations associated with CTE programs provide opportunities to travel, present and engage with a variety of peers and adults.

- **Students spoke about the leadership skills they were learning in CTE.**
  This was particularly true of students who were engaged in community projects or work-based learning.

- **Overall, they want more.**
  From more school offerings to expanded access to postsecondary programs and work-based learning, students expressed a desire for more options (even though many understood limitations in funding, staff, etc).
Summary

1. There is significant misalignment between CTE pathway completions and regional workforce needs. The majority of CTE pathway completions are in the agriculture sector when regional workforce needs are most concentrated in healthcare, advanced manufacturing and management of companies/enterprises.

2. Too few students who complete CTE pathways achieve metrics associated with high-quality pathways. On average, 34% of completers also earned early postsecondary credit, 17% earned an industry credential and 20% went on to enroll in a postsecondary program in the state after high school.

3. Despite challenges in alignment and quality, there is overwhelming enthusiasm and support for CTE programs in the region. Education leaders surveyed were unanimous in prioritizing CTE as important opportunities, and students interviewed voiced their desire for more diverse and better program offerings.
CTE Pathway Archetypes & Other Recommendations
Pathway Archetypes

The following pathway examples or "archetypes" represent possible offerings within high-demand sectors with high-skill and higher-wage occupations in Northwest Arkansas.

Included in each set of archetypes are several CTE programs of study that:

1) Directly lead to identified occupations
2) Provide students an opportunity to earn valued industry credentials
3) Matriculate to postsecondary credential programs

*Note: These archetypes were developed based on pathway/CTE programs of study in leading states and regions.*
Pathway Archetypes

Example archetypes for Northwest Arkansas reflect in-demand, moderate-to-high-skill occupations, both current and emerging in the region.

**Health Services**
- Occupations include RNs, Medical and Health Services Managers and Health Support Professionals

**Advanced Manufacturing**
- Occupations include Industrial Maintenance Technicians, Machinists, First-Line Supervisors and Quality Control Professionals

**Building and Construction**
- Occupations include HVAC and NCCER Professionals

**Business Management and Administration**
- Occupations include General and Operations Managers, Business Operations Specialists, Management Analysts, Project Managers and HR Specialists

**Marketing, Distribution and Logistics**
- Occupations include Business Managers, Logisticians, Supply Chain Specialists and General Managers

**Education and Training**
- Occupations include K-12 Teachers, Education Administrators, Special Education Teachers, Librarians, Postsecondary and Career and Technical Education Educators
# Health Services Pathway

In-demand, moderate-to-high-skill occupations in this industry sector in Arkansas include Registered Nurse (RN), Licensed Practice Nurse (LPN), Medical and Health Services Managers and Emergency Medical Technician (EMT).

<table>
<thead>
<tr>
<th>Program of Study</th>
<th>Description</th>
<th>Example Course Sequence</th>
</tr>
</thead>
</table>
| Nursing Services (NS)        | This program of study will equip students with the necessary knowledge and skills to pursue a postsecondary nursing program. | • Lvl 1: Foundations of Health Services  
• Lvl 2: Medical Therapeutics or Medical Terminology  
• Lvl 3: Nursing Services I  
• Lvl 4: Nursing Services II and/or NS WBL |
| Emergency Medical Services (EMS) | This program of study will equip students with the knowledge and skills necessary for careers in the emergency medical field. | • Lvl 1: Foundations of Health Services  
• Lvl 2: Medical Therapeutics  
• Lvl 3: Emergency Medical Services I  
• Lvl 4: Emergency Medical Services II and/or EMS WBL |
| Therapeutic Services (TS)    | This program of study is designed to prepare students to pursue careers in the fields of dentistry, pharmacology, nutrition or rehabilitation. | • Lvl 1: Foundations of Health Services  
• Lvl 2: Health Services Anatomy & Physiology  
• Lvl 3: Introduction to Dental Services, Pharmacology, Rehabilitation Services or Nutrition Science  
• Lvl 4: Kinesiology and/or TS WBL |
| Health Informatics (HI)      | This program of study is designed to prepare students to pursue careers dealing with the management and use of patient information in accordance with regulatory requirements of the healthcare field. | • Lvl 1: Foundations of Health Services  
• Lvl 2: Principles of Health Informatics or Medical Terminology  
• Lvl 3: Healthcare Information Security  
• Lvl 4: Healthcare Administration and Management and/or HI WBL |
| Diagnostic Services (DS)     | This program of study will prepare students for careers specializing in the detection, diagnosis and treatment of disease and medical conditions. | • Lvl 1: Foundations of Health Services  
• Lvl 2: Medical Therapeutics  
• Lvl 3: Diagnostic Services I  
• Lvl 4: Diagnostic Services II and/or DS WBL |
## Health Services Pathway

<table>
<thead>
<tr>
<th>Program of Study</th>
<th>2030 Long-Term Employment Projections in NWA</th>
<th>Postsecondary Articulation</th>
<th>Example Industry-Valued Certifications</th>
</tr>
</thead>
</table>
| Nursing Services (NS)          | • Healthcare Practitioners and Technical Occupations +15.8%  
• Healthcare Support Occupations +31.2% | Northwest Arkansas Community College  
• Health Professions  
  • CNA/PCA+  
  • Dental Assisting  
  • EMS  
  • Health Information Management Nursing  
  • PT Assistant  
  • Respiratory Therapist Northwest Technical Institute  
• Allied Health  
  • CNA  
  • Practical Nursing  
  • Sterile Processing Tech  
  • Surgical Tech | • Basic Life Saver (BLS)  
• Biotech Assistant (BACE)  
• EMT  
• CNA  
• FEMA-CERT  
• FIRST AID  
• CPR  
• AED  
• Infant & Child CPR  
• Dental/Health Assisting  
• Home Health Aide  
• Practical Nursing  
• Nutrition, Food and Wellness Pre-PAC  
• Pharmacy Tech |
| Emergency Medical Services (EMS) | Regional Employers:  
  • Washington Regional Medical Center  
  • Northwest Health System  
  • Mercy Hospital NW Arkansas | Regional Employers:  
  • Washington Regional Medical Center  
  • Northwest Health System  
  • Mercy Hospital NW Arkansas | Regional Employers:  
  • Washington Regional Medical Center  
  • Northwest Health System  
  • Mercy Hospital NW Arkansas |
| Therapeutic Services (TS)      |                                            |                                            |                                                                  |
| Health Informatics (HI)        |                                            |                                            |                                                                  |
| Diagnostic Services (DS)       |                                            |                                            |                                                                  |

Source: Arkansas Division of Workforce Services - NW Arkansas Workforce Development Area
# Advanced Manufacturing Pathway

In-demand, moderate-to-high-skill occupations in this emerging industry sector in Arkansas include Industrial Maintenance Technicians, CNC Machinists, Production Supervisors, Welders, Quality Control Inspectors and Automation and Robotics Technicians.

<table>
<thead>
<tr>
<th>Program of Study</th>
<th>Description</th>
<th>Example Course Sequence</th>
</tr>
</thead>
</table>
| **Welding**                               | This program of study will prepare students with the knowledge and skills to become Entry-Level or Higher-Level Welders. | Lvl 1: Foundations of Manufacturing  
Lvl 2: Welding I  
Lvl 3: Welding II  
Lvl 4: Advanced Welding and/or Welding WBL |
| **Electro-Mechanical Technology (EMT)**   | This program of study will equip students to pursue careers in advanced manufacturing facilities such as Maintenance and Repair, Industrial Machinery, Master Mechanic, Electro-Mechanical Technician or Electro-Mechanical Engineer. | Lvl 1: Foundations of Manufacturing  
Lvl 2: Electro-Mechanical I  
Lvl 3: Electro-Mechanical II  
Lvl 4: Electro-Mechanical Systems Integration and/or EMT WBL |
| **Machining Technology (MT)**             | This program of study is designed to prepare students to pursue careers such as Computer-Controlled Machine Tool Operator, CNC Machining Tool Programmer or Machinist. | Lvl 1: Foundations of Manufacturing  
Lvl 2: Principles of Machining I  
Lvl 3: Principles of Machining II  
Lvl 4: Advanced Machining and/or MT WBL |
| **Automation and Robotics Technology (ART)** | This program of study will prepare students with the knowledge and skills to work in industries where manufacturing automation is emerging such as Automated Systems Technology or Robotics Maintenance and Development. | Lvl 1: Foundations of Manufacturing  
Lvl 2: Automatic and Robotics Technology I  
Lvl 3: Automatic and Robotics Technology II  
Lvl 4: Automatic and Robotics Technology III and/or ART WBL |
## Advanced Manufacturing Pathway

<table>
<thead>
<tr>
<th>Program of Study</th>
<th>2030 Long-Term Employment Projections in NWA</th>
<th>Postsecondary</th>
<th>Example Industry-Valued Certifications</th>
</tr>
</thead>
</table>
| Welding                                  | • Installation, Maintenance and Repair Occupations +12.4%  
• Production Occupations +4.1%                                                             | Northwest Arkansas Community College  
• Electronics Technology  
• Robotics  
• STEM  
• Business-Computer Information  
Northwest Technical Institute  
• Electronics and Automation  
• Industrial Maintenance and Ammonia Refrigeration  
• Welding                                                             | • AC/DC Electrical Systems  
• Amatrol (various)  
• AWS (various)  
• Welding  
• Data Analytics  
• Machine Learning  
• Cloud Practitioner  
• Basic Hydraulics  
• Basic Pneumatics  
• CNC Certifications (various)  
• Blueprint Reading  
• Safety for Machining  
• Electric Motor Control  
• Electric Relay Control |
| Electro-Mechanical Technology (EMT)       | Regional Employers:  
• Walmart  
• Tyson Foods  
• JB Hunt Transport Services  
• Procter & Gamble  
• Georgia-Pacific  
• Rockline Industries  
• Bekaert Corporations  
• Ball Corporation                                                           |                                                                               |                                                                               |
| Machining Technology (MT)                |                                                                                                             |                                                                               |                                                                               |
| Automation and Robotics Technology (ART)  |                                                                                                             |                                                                               |                                                                               |
**Building and Construction Pathway**

In-demand, moderate-to-high-skill occupations in this industry sector in Arkansas include HVAC professionals and NCCER professionals.

<table>
<thead>
<tr>
<th>Program of Study</th>
<th>Description</th>
<th>Example Course Sequence</th>
</tr>
</thead>
</table>
| Residential and Commercial (R&C)      | This program of study will prepare students with the knowledge and skills to enter and sustain a career in residential and/or commercial construction. | Lvl 1: Foundations of Building and Construction  
Lvl 2: R & C Construction I  
Lvl 3: R & C Construction II  
Lvl 4: Construction Management and/or R&CC Construction WBL |
| Commercial Construction                |                                                                             |                                                              |
| Mechanical, Electrical and Plumbing (MEP) Systems | This program of study will equip students to pursue careers in an HVAC, electrical or plumbing trade of their choosing. | Lvl 1: Foundations of Building and Construction  
Lvl 2: MEP Systems I  
Lvl 3: MEP Systems II  
Lvl 4: Applied MEP Systems Integration and/or MEP Systems WBL |
# Building and Construction Pathway

<table>
<thead>
<tr>
<th>Program of Study</th>
<th>2030 Long-Term Employment Projections in NWA</th>
<th>Postsecondary</th>
<th>Example Industry-Valued Certifications</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residential and Commercial (R&amp;C)</td>
<td>• Construction and Extraction Occupations +7.8%</td>
<td>• Construction Technology</td>
<td>• NCCER (various)</td>
</tr>
<tr>
<td>Construction</td>
<td>• Construction Industry Growth +7%</td>
<td>• Integrated Design</td>
<td>• Concrete Finishing</td>
</tr>
<tr>
<td></td>
<td>Regional Employers:</td>
<td>• Electrical Apprentice</td>
<td>• Construction Technology</td>
</tr>
<tr>
<td></td>
<td>• Baldwin &amp; Shell</td>
<td>• HVAC</td>
<td>• Core</td>
</tr>
<tr>
<td></td>
<td>• Nabholz Construction</td>
<td>• Plumbing Apprentice</td>
<td>• Electrical</td>
</tr>
<tr>
<td></td>
<td>• Crossland Construction Company</td>
<td>• Construction Industry Safety (Certificate of Proficiency)</td>
<td>• Basic Principles of Construction</td>
</tr>
<tr>
<td></td>
<td>• Milestone Construction Company</td>
<td>Northwest Arkansas Community College</td>
<td>• Building Constructions Occupations</td>
</tr>
<tr>
<td></td>
<td>• Flintco</td>
<td>• HVAC/R Certification</td>
<td>• Building Construction Technology</td>
</tr>
<tr>
<td></td>
<td>• Metroplan Construction</td>
<td></td>
<td>• Carpentry</td>
</tr>
<tr>
<td></td>
<td>• Lindsey Management Company</td>
<td></td>
<td>• Construction Masonry (Block/Brick)</td>
</tr>
<tr>
<td></td>
<td>• Various retail and commercial developers</td>
<td></td>
<td>• Fundamentals of Construction</td>
</tr>
<tr>
<td>Mechanical, Electrical and</td>
<td></td>
<td>Northwest Technical Institute</td>
<td>• Construction Certification (S/P2)</td>
</tr>
<tr>
<td>Plumbing (MEP) Systems</td>
<td></td>
<td>• HVAC/R Certification</td>
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</tbody>
</table>
# Marketing, Distribution and Logistics Pathway

In-demand, moderate-to-high skill occupations in this industry sector in Arkansas include Marketing Specialists/Managers, Market Research Analysts, Logisticians, Public Relations Specialists, Transportation, Storage, Distribution Managers, etc.

<table>
<thead>
<tr>
<th>Program of Study</th>
<th>Description</th>
<th>Example Course Sequence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Marketing Management (MM)</td>
<td>This program of study will prepare students with the knowledge and skills to pursue a career in marketing, advertising, sales and business management.</td>
<td>• Lvl 1: Foundations of Business and Marketing</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Lvl 2: Advertising and Public Relations</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Lvl 3: Digital Marketing and Market Analytics</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Lvl 4: Marketing Operations and/or MM WBL</td>
</tr>
<tr>
<td>Supply Chain Logistics (SCL)</td>
<td>This program of study will provide students with a solid foundation of knowledge and skills necessary to understand and manage the complex systems involved in the movement of goods and materials from production to consumption.</td>
<td>• Lvl 1: Foundations of Business and Marketing</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Lvl 2: Supply Chain Logistics I</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Lvl 3: Supply Chain Logistics II</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Lvl 4: Supply Chain Logistics III and/or SCL WBL</td>
</tr>
<tr>
<td>Entrepreneurship</td>
<td>This program of study will prepare students interested in starting their own businesses or pursuing a career in entrepreneurship with the knowledge and skills necessary to understand the principles of entrepreneurship and develop the mindset required for success in the business world.</td>
<td>• Lvl 1: Foundations of Business and Marketing</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Lvl 2: Entrepreneurship I</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Lvl 3: Entrepreneurship II</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Lvl 4: Entrepreneurship Leadership and Innovation and/or WBL</td>
</tr>
</tbody>
</table>
## Marketing, Distribution and Logistics Pathway

<table>
<thead>
<tr>
<th>Program of Study</th>
<th>2030 Long-Term Employment Projections in NWA</th>
<th>Postsecondary</th>
<th>Example Industry-Valued Certifications</th>
</tr>
</thead>
</table>
| Marketing Management (MM) | - Transportation and Material Moving Occupations +12.2%  
- Professional and Business Services +8.7% | Business Administration  
- Business Management  
  - General Business  
  - Entrepreneurship  
  - Retail Management  
  - Logistics Management | Entrepreneurship Endorsement (Certiport)  
Facebook Blueprint  
Google Analytics  
Social Marketing Certification (Hootsuite)  
Hubspot  
ICEV Express Employment (various)  
IC3  
Quickbooks  
National Retail Federation (various), including Warehouse, Inventory and Logistics  
PMP Lite |
| Supply Chain and Logistics (SCL) | Regional Employers:  
- Walmart  
- Tyson Foods  
- JB Hunt Transport Services  
- FedEx  
- McKee Foods  
- Nestle USA  
- Kimberly Clark | | |
| Entrepreneurship | | | |

Source: Arkansas Division of Workforce Services - NW Arkansas Workforce Development Area
# Business Management and Administration Pathway

In-demand, moderate-to-high-skill occupations in this industry sector in NWA include General and Operations Managers, Business Operations Specialists, Management Analysts, Project Management and Human Resources Specialists.

<table>
<thead>
<tr>
<th>Program of Study</th>
<th>Description</th>
<th>Example Course Sequence</th>
</tr>
</thead>
</table>
| Business Management (BM)              | This program of study will prepare students with the knowledge and skills necessary to succeed in various business environments and prepare them for future studies or entry-level employment in the field of business management. |  • Lvl 1: Foundations of Business Management  
  • Lvl 2: Financial Management  
  • Lvl 3: Business Strategy and Planning  
  • Lvl 4: International Business Management and/or BM WBL                                                                                       |
| Human Resource Management (HRM)       | This program of study will prepare students with the knowledge and skills necessary to excel in various human resources roles and prepare them for future studies or entry-level employment in the field of human resources management. |  • Lvl 1: Foundations of Business Management  
  • Lvl 2: Business Communications  
  • Lvl 3: Human Resource Management I  
  • Lvl 4: Human Resource Management II and/or HRM WBL                                                                                          |
| Operations Management (OM)            | This program aims to equip students with the skills and knowledge necessary to succeed in various operational roles and prepare them for future studies or entry-level employment in the field of operations management. |  • Lvl 1: Foundations of Business Management  
  • Lvl 2: Operations Management I  
  • Lvl 3: Operations Management II  
  • Lvl 4: Operations Strategy and Supply Chain Management and/or BOM WBL                                                                         |
## Program of Study

<table>
<thead>
<tr>
<th>Program of Study</th>
<th>2030 Long-Term Employment Projections in NWA</th>
<th>Postsecondary</th>
<th>Example Industry-Valued Certifications</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Business Management (BM)</strong></td>
<td>• Management Occupations +7.6%</td>
<td>Northwest Arkansas Community College</td>
<td>• Entrepreneurship Endorsement (Certiport)</td>
</tr>
<tr>
<td></td>
<td>• Business and Financial Operations Occupations +10.9%</td>
<td>Business Administration</td>
<td>• Financial/Digital Literacy</td>
</tr>
<tr>
<td><strong>Human Resource Management (HRM)</strong></td>
<td>Regional Employers:</td>
<td></td>
<td>• Facebook Blueprint</td>
</tr>
<tr>
<td></td>
<td>• Walmart</td>
<td></td>
<td>• Hubspot</td>
</tr>
<tr>
<td></td>
<td>• Tyson Foods</td>
<td></td>
<td>• Hootsuite</td>
</tr>
<tr>
<td></td>
<td>• JB Hunt Transport Services</td>
<td></td>
<td>• Google Analytics</td>
</tr>
<tr>
<td></td>
<td>• University System</td>
<td></td>
<td>• ICEV Express Employment (various)</td>
</tr>
<tr>
<td></td>
<td>• Arvest Bank</td>
<td></td>
<td>• IC3</td>
</tr>
<tr>
<td></td>
<td>• Northwest Health</td>
<td></td>
<td>• Quickbooks</td>
</tr>
<tr>
<td></td>
<td>• Supplier Companies (various)</td>
<td></td>
<td>• Microsoft Specialist (various)</td>
</tr>
<tr>
<td><strong>Operations Management (OM)</strong></td>
<td>Regional Employers:</td>
<td></td>
<td>• PMP Light</td>
</tr>
<tr>
<td></td>
<td>• Walmart</td>
<td></td>
<td>• Human Resources certification</td>
</tr>
<tr>
<td></td>
<td>• Tyson Foods</td>
<td></td>
<td>• Banking and Finance Operations</td>
</tr>
<tr>
<td></td>
<td>• JB Hunt Transport Services</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• University System</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Arvest Bank</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Northwest Health</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Supplier Companies (various)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: Arkansas Division of Workforce Services - NW Arkansas Workforce Development Area
# Education and Training

In-demand, moderate-to-high-skill occupations in this industry sector in Arkansas include K-12 Teachers, Education Administrators, Special Education Teachers, Librarians, Postsecondary and CTE Educators.

## Program of Study

<table>
<thead>
<tr>
<th>Program of Study</th>
<th>Description</th>
<th>Example Course Sequence</th>
</tr>
</thead>
</table>
| Teaching and Training (TT)| This program of study will equip students interested in the field of education with foundational knowledge of instruction, assessment, classroom management, lesson planning and educational technology. | Lvl 1: Foundations of Teaching and Training  
Lvl 2: Teaching and Training I  
Lvl 3: Teaching and Training II  
Lvl 4: Teaching and Training III and/or TT WBL |

## 2030 Long-Term Employment Projections in NWA

<table>
<thead>
<tr>
<th>Program of Study</th>
<th>2030 Long-Term Employment Projections in NWA</th>
<th>Postsecondary</th>
</tr>
</thead>
</table>
| Teaching and Training (TT)| • Education, Training and Library Occupations +18.1%  
• Educational Services is #3 in the top 10 growth industries, expected to grow 14.6%                                                                                                                                 | Northwest Arkansas Community College  
  • Associate of Arts Teaching  
  • Certified Teaching Assistant (CTA)  
  • Parapro Praxis |
|                           | Regional Employers:  
  • NWA Public School Districts                                                                                                                                                             |                                                                                                                                               |
1. Given the enthusiasm for CTE and the identified labor shortages, regional partners should focus efforts to build out CTE programming in NWA in Healthcare, Advanced Manufacturing, Marketing/Distribution/Logistics, Building/Construction, Business Management and Administration and Education and Training.

2. Any strategy to improve CTE should be grounded in the common definition for high-quality pathways that improves student outcomes and aligns with regional economic and workforce needs and priorities.

3. Developing consistent cross-region CTE pathways will require shared resources, economies of scale and a shift away from "go it alone" approaches.

4. Further analysis is needed around the longer-term outcomes of current NWA CTE programs for learners such as postsecondary credential attainment, employment, wage earnings, etc.
Appendix

Data & Methodology
Data Sources

Division of Career and Technical Education (DCTE)
- Perkins V data
- DCTE labor market data
- Work-based learning completion data

Arkansas Office of Innovation for Education
- CTE programs of study completion data
- Early postsecondary credit completion data
- Industry credential attainment data

Division of Elementary and Secondary Education
- Statewide enrollment data
- Postsecondary matriculation data

Office of Education Policy (University of Arkansas)/Insightful
- Survey data
- Focus group data

Other Sources
Data Limitations

- Due to lack of access to student-level data, this analysis relies on aggregate data which limits the ability to fully investigate the outcomes of CTE students.

- Concentration data may be inflated due to current business rules for counting. Until 2022-23, all students who took a level 1 course and any other level 2 or 3 course would be counted as a concentrator, even if those courses were not in the same program of study. Therefore, this analysis focuses on completer/completion data to more accurately understand student outcomes related to CTE programs of study.

- Industry certification data do not specify which certifications or how many certifications a student earned. These data are also only available for the 2021 and 2022 school years.

- Postsecondary matriculation data were only available for the 2020 and 2021 school years.

- The state’s current structure for organizing programs of study does not allow for easy analysis of directional alignment with H3 occupations. Therefore, this analysis focuses on program of study completion.
### Terms and Definitions

| Program of Study | A coordinated, non-duplicative sequence of academic and technical content at the secondary and postsecondary level that meets requirements outlined in Perkins V. |
| Completers | Students who have completed three (3) courses within a career cluster program of study. |
| Concentrators | Students who enroll in a minimum of two (2) units of credit in a CTE program area. |
| High-Quality Indicators | 1) Earned industry-recognized credential or certification, 2) earned early postsecondary credits, and 3) postsecondary matriculation. |
| Earned Industry Certification | Graduates who were reported to have earned an industry-recognized credential prior to graduating high school. |
| Earned Early Postsecondary Credits | Graduates who earned any Advanced Placement, International Baccalaureate, dual/concurrent credit prior to graduating high school. |
| Postsecondary Matriculation | Graduates who were reported to be enrolled in a postsecondary placement by DIS and ARData. |
| $H^3$ | High demand, high-skill, and higher-wage occupations. |
Benton & Washington County

<table>
<thead>
<tr>
<th></th>
<th>2019-2020</th>
<th>2020-2021</th>
<th>2021-2022</th>
<th>3 Years Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>HS Enrollment</td>
<td>30,318</td>
<td>33,498</td>
<td>34,750</td>
<td>98,566</td>
</tr>
<tr>
<td>CTE Completions</td>
<td>10,050</td>
<td>9,272</td>
<td>10,471</td>
<td>29,793</td>
</tr>
<tr>
<td>WBL Completions</td>
<td>598</td>
<td>2</td>
<td>50</td>
<td>650</td>
</tr>
</tbody>
</table>

The school districts included in the NWA region (by county) are:

- **Benton:**
  - Arkansas Arts Academy
  - Arkansas Connections Academy
  - Bentonville School District
  - Decatur School District
  - Founders Classical Academies Of Arkansas
  - Gentry School District
  - Gravette School District
  - Haas Hall Academy
  - Pea Ridge School District
  - Rogers School District
  - Siloam Springs School District

- **Washington:**
  - Elkins School District
  - Farmington School District
  - Fayetteville School District
  - Greenland School District
  - Lincoln School District
  - Prairie Grove School District
  - Responsive Ed Solutions Premier High School Of Springdale
  - Springdale School District
  - West Fork School District