

**MDC**

# **Where the Jobs Are**

**Opportunity and Challenges in Arkansas Employment**

**A report to the Winthrop Rockefeller Foundation**



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## **ABOUT MDC**

MDC is a nonprofit organization headquartered in Durham, N.C., that has been publishing research and developing programs focused on expanding opportunity, reducing poverty, and addressing structural inequity for nearly 50 years. MDC's focus is on: defining gaps and mobilizing leaders to create a will for change; demonstrating sustainable solutions and developing them into effective models; and then incubating them so they can be replicated at scale for maximum impact. For more information about MDC, please visit their website at [www.mdcinc.org](http://www.mdcinc.org).

## **ABOUT THE WINTHROP ROCKEFELLER FOUNDATION**

For 40 years, the Winthrop Rockefeller Foundation has worked to make a difference by helping to build and sustain the organizations that serve and strengthen Arkansas. Through grantmaking and strategic partnerships, WRF is working even harder to help close the economic and educational gaps that leave too many Arkansas families in persistent poverty. Working together, the needle can and must move from poverty to prosperity for all Arkansans. For more information on the Winthrop Rockefeller Foundation, go to [www.wrfoundation.org](http://www.wrfoundation.org).

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## INTRODUCTION

From Pine Bluff to Bentonville and from Texarkana to Blytheville—Arkansas employers speak of a consistent challenge: “We’ve got jobs, but we just don’t have the people to fill them.” This notion of an economy poised to grow, but without the talent to meet growth opportunities, is a common concern of employers in Arkansas and across the nation. While anecdotes can be useful, deep quantitative analysis is required to ensure that these concerns are based in reality.

The Winthrop Rockefeller Foundation asked MDC, an organization with nearly 50 years of experience analyzing workforce development trends in the South, to take a quantitative look at the current and projected job situation in the state of Arkansas. This report is a result of that investigation.

MDC was charged with answering the following questions:

1. What are the current and projected opportunities for jobs for Arkansans?
2. In what industry sectors do employers face difficulty filling positions?
3. How many of these jobs can be considered “good jobs,” those paying at least a living wage?
4. Which industry sectors have the greatest potential for growth in good jobs? For these selected sectors, where are the most significant labor force gaps?
5. What differences exist in current and projected job growth across the different regions in Arkansas?

## KEY FINDINGS

In this report, we try to answer each of these five questions and analyze what the results mean for the future of work in Arkansas. The five key findings are:

### **1. ARKANSAS HAS JOB GROWTH, BUT AT SLOWER RATE THAN THE NATION AS A WHOLE**

After a slowdown due to the national Great Recession, Arkansas is poised for significant job growth over the next decade. Between 2013 and 2023, the state is forecast to add 148,000 jobs, which represents a 9.5 percent increase from 2013 levels. While this is good news for the state, it is still 5 percentage points less than the projected growth rate for the nation.

But the addition of these new jobs does not tell the whole story of the need to fill open positions. More than 25 percent of the current workforce in Arkansas will need to be replaced in the next 10 years. Replacement needs between 2013 and 2023 are forecast to be close to 400,000 jobs; putting the total projected employment in the state over the next 10 years, including both new and replacement needs, at an estimated 546,000 jobs.

### **2. PROJECTED GROWTH IS PRIMARILY IN LOWER-SKILL AND LOWER-WAGE JOBS**

While there is projected growth in Arkansas jobs, this growth is overwhelmingly in occupations that require the least amount of educational training and provide the lowest wages. Nearly 70 percent of the projected job openings in the state are in occupations that typically require a high school diploma, GED, or less for entry. Only 30 percent require a postsecondary credential or higher for entry. And there is a direct correlation between the degree level of individuals and their compensation. Currently, 87 percent of the jobs in Arkansas that pay less than a living wage do not require a postsecondary credential.

### **3. THE NUMBER OF SKILLED INDIVIDUALS IN ARKANSAS IS INCREASING**

While there is significant job growth forecast in lower-skilled, lower-wage jobs, the trend in Arkansas is one of a population increasing in skills and educational credentials. Since 2009, the numbers of Arkansans with a postsecondary degree has increased 25.6 percent—from 33,000 postsecondary awards in 2009 to 42,000 in 2013. This growth, should it remain consistent, could have real implications in creating good jobs for Arkansans. Increased levels

of educational attainment in the state over the next 10 years will improve workers' chances of obtaining a living-wage job and better career advancement, while at the same time attracting more industries and businesses seeking a high-skilled workforce.

#### **4. CERTAIN CLUSTERS ARE POISED FOR GROWTH; WILL FACE CHALLENGE FILLING POSITIONS**

In examining employment trends, MDC uses industrial clusters (see list on pages 11-12) as a unit of analysis as opposed to economic sectors. While sectors focus on one particular dimension of an industry, a cluster represents the entire value chain of an industry from the suppliers to the end products and includes services and specialized infrastructure that support production along the way. Two of the most important clusters in Arkansas – Biotech and Health Care, and Manufacturing – were most commonly mentioned in interviews with industry experts in Arkansas as facing the biggest challenges in meeting the demand to fill projected jobs. The Biotech and Health Care cluster is growing at an 11 percent clip and is forecast to add nearly 36,000 jobs in the next 10 years. A potential barrier to growth in this cluster is that some of the most in-demand jobs will require a postsecondary degree and yet pay less than a living wage in Arkansas. Manufacturing is growing in the state as well, albeit less than the Biotech and Health Care cluster. Challenges in meeting growth in this cluster appear to be in filling very high-skill jobs, particularly those in engineering.

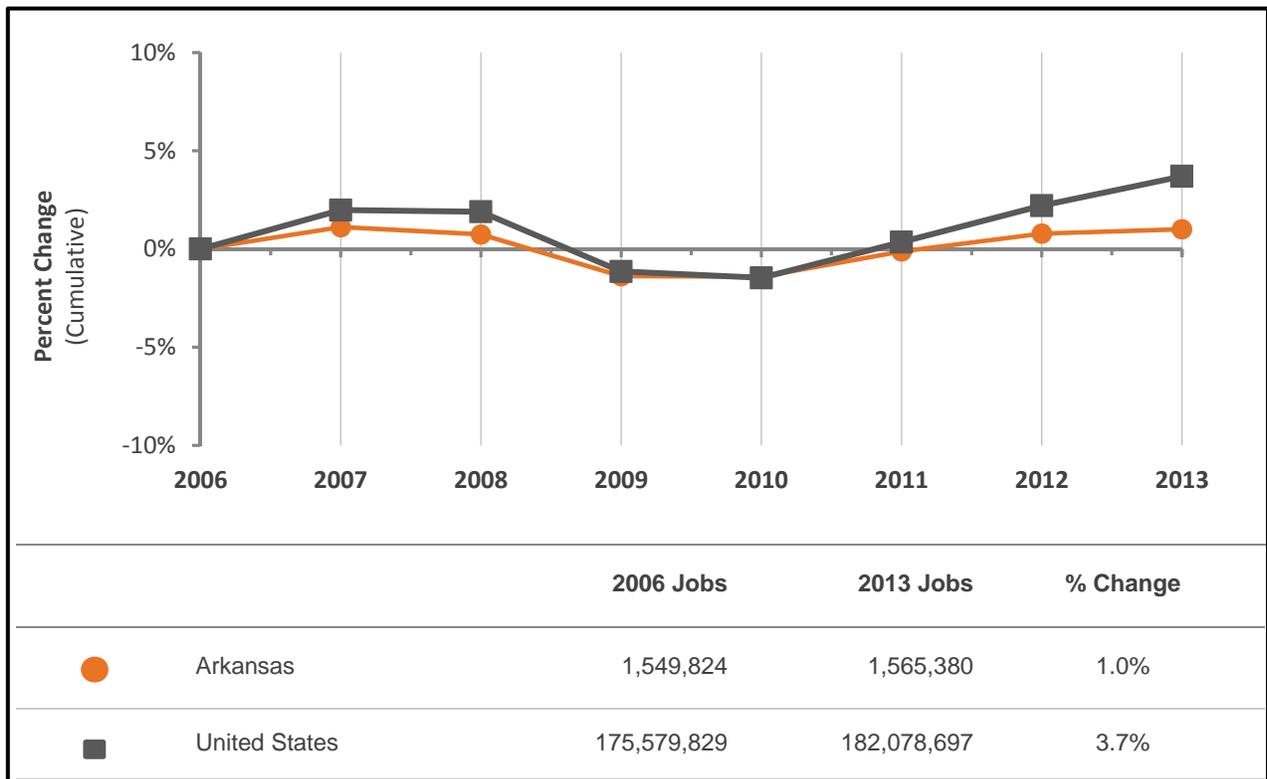
#### **5. THERE ARE REGIONAL DIFFERENCES IN EMPLOYMENT OPPORTUNITIES**

While the findings above apply to almost all of Arkansas, there are clear differences in the availability of jobs by region. Thus, statewide solutions may not address the particular needs of a region without taking into account the industrial makeup of the region in question. For this study, MDC is using the concept of labor sheds to analyze regional economies. This allows more analysis of commuting patterns to give a better sense of the job availability in particular regions of the state. The three regions that are experiencing the greatest job growth are in the Northeast, Northwest, and the West North Central Labor Sheds. Conversely, the Lower Arkansas River Labor Shed is projected to experience a slight decline in job growth between 2013 and 2023.

## INDUSTRY JOB GROWTH TRENDS: THE GREAT RECESSION THROUGH 2013

The national Great Recession impacted Arkansas in much the same way it impacted the rest of the nation: significant job losses. During the recession, Arkansas industries shed 39,000 net jobs. Jobs declined from a peak of 1.57 million in 2007 to 1.53 million in 2010. Since that time, Arkansas has nearly rebounded to the pre-recession level with just under 1.57 million jobs in the state in 2013. By comparison, however, jobs in the United States increased by 4 percent in the same period.

**Figure 1: Percentage Change in Jobs, 2006 – 2013**

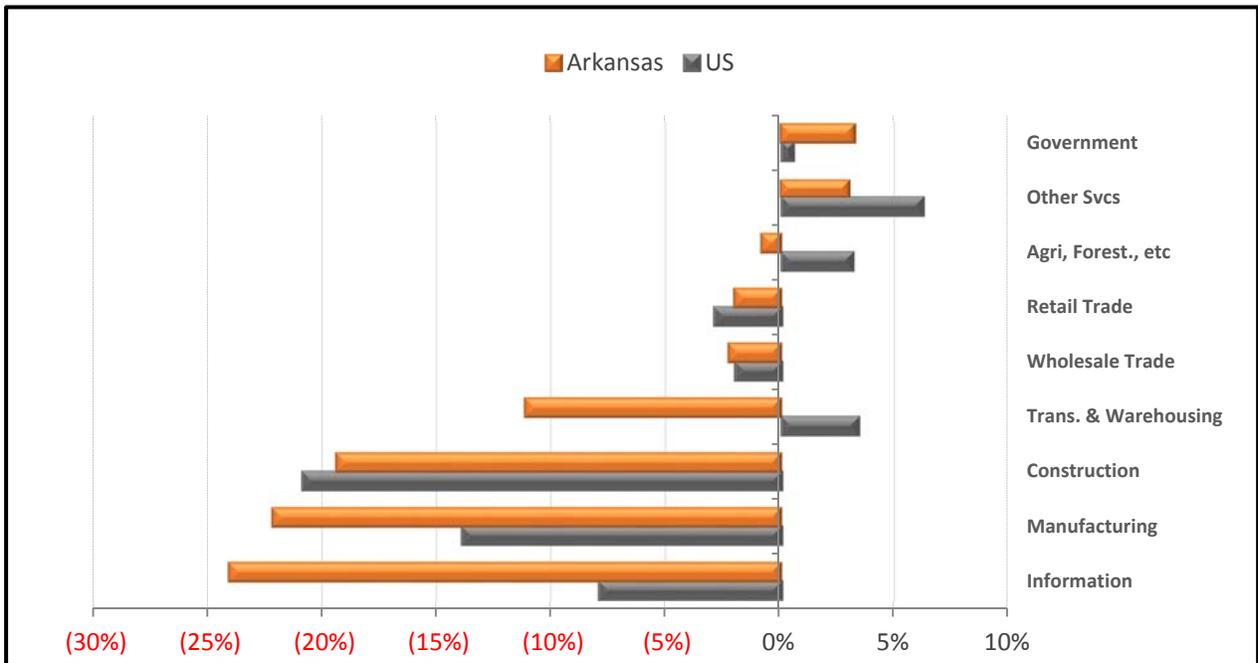


*Source: EMSI 2014.2 – QCEW Employees, Non-QCEW Employees, Self-Employed, and Extended Proprietors.*

The stagnating job growth in the industrial sectors in Arkansas was similar to that of the nation. As Figure 2 on the next page shows, the Construction, Manufacturing, Transportation and Warehousing (Construction), and Information sectors experienced double-digit declines in jobs between 2006 and 2013 in Arkansas—and with the exception of the industries that fall

into the Construction sector, the percentage of jobs lost during that period exceeded the nation as a whole. All told, these four sectors accounted for 79,000 jobs lost during this time frame. During this period, the Agriculture, Forestry, Fishing, and Hunting sector in Arkansas also shed jobs, while the nation added jobs from 2006 to 2013.

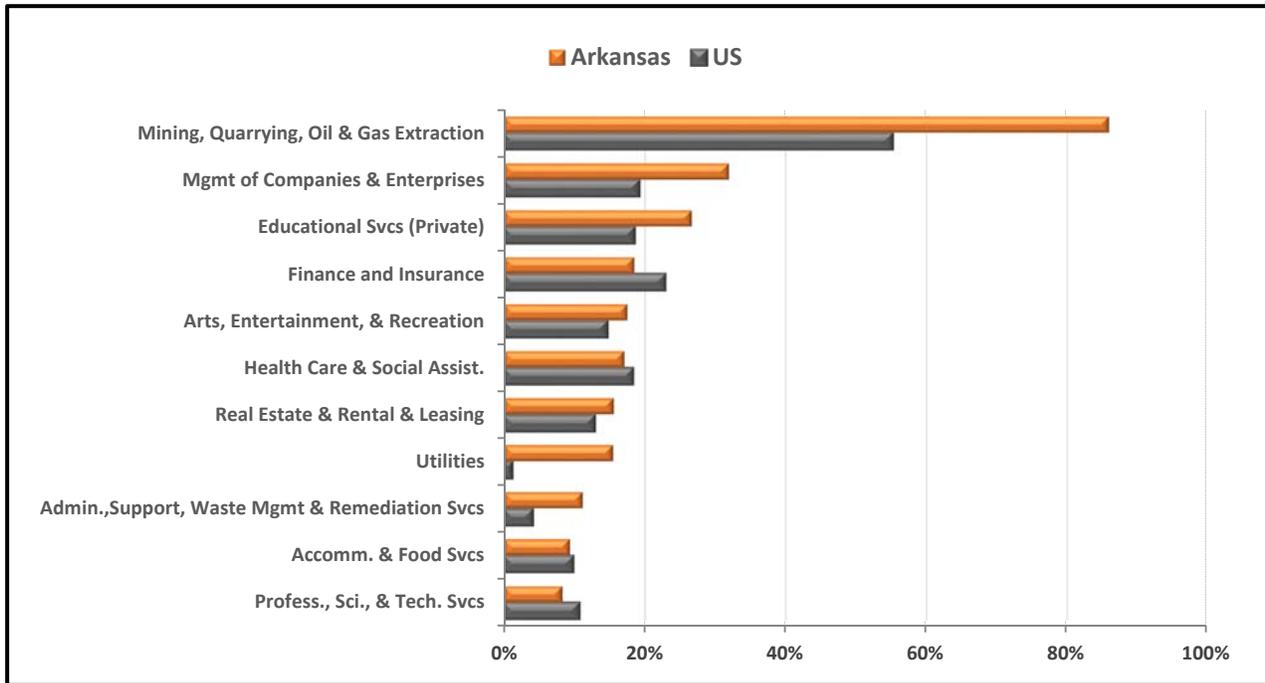
**Figure 2: Sectors Experiencing the Least Job Growth in Arkansas, 2006 – 2013**



*Source: EMSI 2014.2 – QCEW Employees, Non-QCEW Employees, Self-Employed, and Extended Proprietors.*

Arkansas, however, greatly surpassed the nation in the rate of job creation between 2006 and 2013 in three sectors: Mining, Quarrying, and Oil and Gas extraction; Management of Companies and Enterprises; and Utilities. As Figure 3 on the next page shows, the percentage change in Mining, Quarrying, and Oil and Gas extraction jobs during the period is 86 percent, compared with 55 percent for the nation as a whole. Jobs in the Utilities and Management of Companies and Enterprises sectors grew by 15 percent and 32 percent, respectively. In terms of sheer raw numbers of jobs, the three sectors added more than 16,500 jobs over the seven-year time period.

**Figure 3: Sectors Experiencing the Most Job Growth in Arkansas, 2006 – 2013**



*Source: EMSI 2014.2 – QCEW Employees, Non-QCEW Employees, Self-Employed, and Extended Proprietors.*

## WHERE THE JOBS ARE CURRENTLY: CONCENTRATION BY SECTOR IN ARKANSAS

The largest four sectors in the Arkansas economy, in terms of jobs, are (1) Government, (2) Health Care and Social Assistance, (3) Retail Trade, and (4) Manufacturing. Figure 4 details the jobs by industry sector and also includes a measure of concentration. The location quotient (LQ) measures how concentrated each sector is in Arkansas, as compared with the nation. A LQ equal to, or close to 1, means the state has a similar share of jobs in an industry as the nation. LQ's above 1.20 often tell a different story about a sector, in that they tend to identify industries or sectors that make a region more competitive, are often associated with industries or sectors that multiply job growth in a region, and, with a few exceptions, tend to be associated with higher wages.

Manufacturing, which accounts for 10 percent of all jobs in Arkansas, has a robust LQ of 1.46. In addition to Manufacturing, the sectors within Arkansas that are particularly competitive based on a higher than expected concentration of jobs in the region are Mining, Quarrying,

## WHERE THE JOBS ARE

and Oil and Gas extraction; Utilities; Transportation and Warehousing; Management of Companies and Enterprises; and Agriculture, Forestry, Fishing, and Hunting. Of these sectors, only the Agriculture, Forestry, Fishing, and Hunting sector has an average annual earnings per worker less than the state average of \$41,125.

**Figure 4: Jobs by NAICS Sector – 2013**

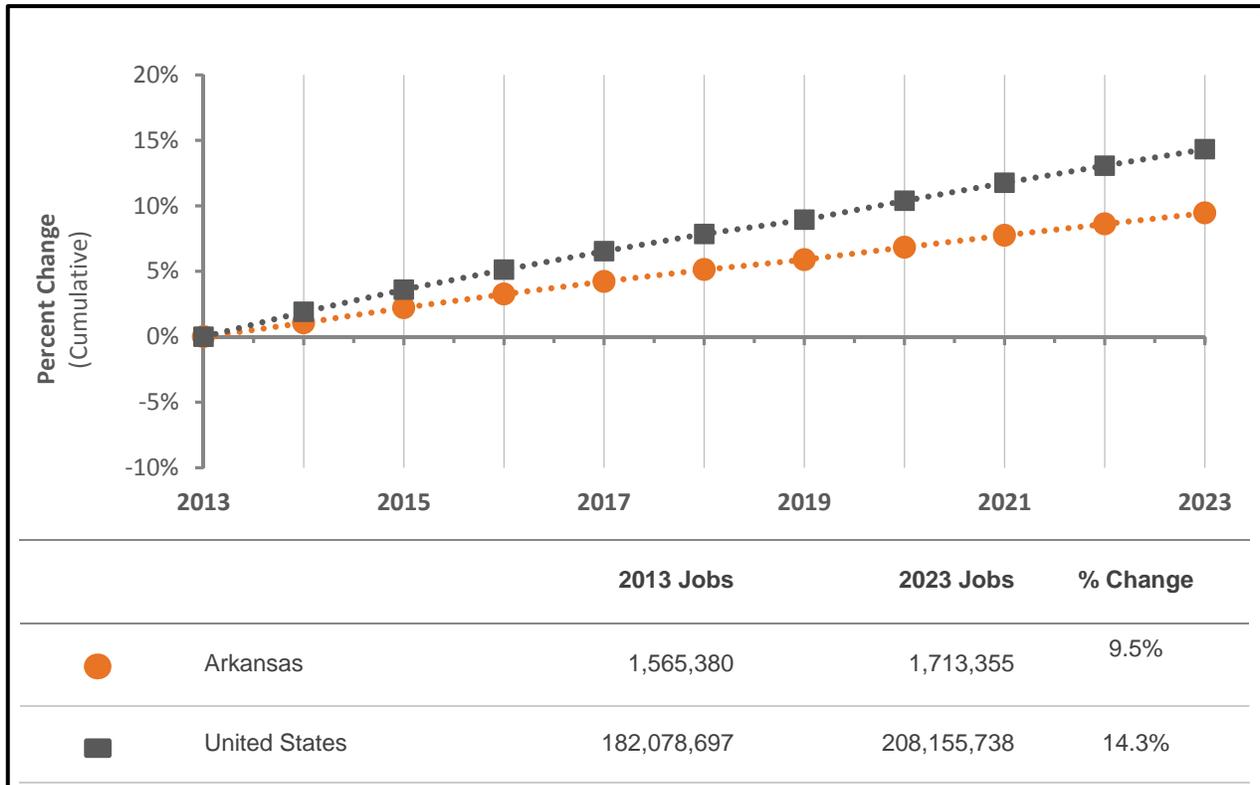
NAICS Category	# Jobs	% of Total Jobs	2014 Average Earnings	Location Quotient	Establishments
All Industries	1,565,380		\$41,125		86,369
11 - Agriculture, Forestry, Fishing, and Hunting	62,526	4%	\$28,484	2.08	1,983
21 - Mining, Quarrying, and Oil and Gas Extraction	16,298	1%	\$72,057	1.31	519
22 - Utilities	8,149	1%	\$101,453	1.65	415
23 - Construction	83,437	5%	\$37,039	1.07	6,783
31 - Manufacturing	158,513	10%	\$52,694	1.46	3,043
42 - Wholesale Trade	51,194	3%	\$66,761	0.94	6,815
44 - Retail Trade	161,332	10%	\$26,612	1.04	11,161
48 - Transportation and Warehousing	66,119	4%	\$48,254	1.30	2,874
51 - Information	17,631	1%	\$54,373	0.62	1,151
52 - Finance and Insurance	61,059	4%	\$50,294	0.69	4,808
53 - Real Estate and Rental and Leasing	55,187	4%	\$24,778	0.76	3,283
54 - Professional, Scientific, and Technical Services	62,888	4%	\$50,716	0.58	8,109
55 - Management of Companies and Enterprises	32,615	2%	\$117,621	1.69	501
56 - Administrative and Support and Waste Management and Remediation Services	86,686	6%	\$23,683	0.89	4,225
61 - Educational Services (Private)	22,646	1%	\$24,907	0.59	728
62 - Health Care and Social Assistance	180,026	12%	\$43,918	1.03	13,794
71 - Arts, Entertainment, and Recreation	20,130	1%	\$14,810	0.58	925
72 - Accommodation and Food Services	102,656	7%	\$16,255	0.92	5,720
81 - Other Services (except Public Administration)	88,878	6%	\$20,535	1.00	5,345
90 - Government	227,409	15%	\$51,607	1.10	4,189

*Source: EMSI 2014.2 – QCEW Employees, Non-QCEW Employees, Self-Employed, and Extended Proprietors.*

**LOOKING FORWARD: INDUSTRY JOB GROWTH, 2013 THROUGH 2023**

Arkansas is poised for significant job growth over the next decade as exhibited in Figure 5.

**Figure 5: Percentage Change in Jobs, 2013 – 2023**



*Source: EMSI 2014.2 – QCEW Employees, Non-QCEW Employees, Self-Employed, and Extended Proprietors.*

By 2023, the number of jobs across all economic sectors is expected to grow by 9.5 percent. Between 2013 and 2023, the state is forecast to add 148,000 jobs. While this growth is welcome, it is at a rate 5 percentage points less than that of the nation as a whole.

Projected job growth in the state is propelled by the Health Care and Social Assistance (+29,600 jobs); Administrative and Support and Waste Management and Remediation Services (+19,000 jobs); Accommodation and Food Services (+15,000 jobs); and Government sectors (+12,000 jobs).

Within the Health Care and Social Assistance sector, the subsector driving employment growth is the Ambulatory Care Services sector, which includes doctors' offices and other health care practitioners that provide services either directly or indirectly to ambulatory patients (e.g., chiropractors, physical therapists, dentists, outpatient dialysis centers). Growth in this subsector is projected to add 11,500 jobs between 2013 and 2023.

Social Assistance Services employment is forecast to add an additional 11,200 jobs to the state during the time period analyzed in this report. Businesses in this subsector include individual and family service organizations (e.g., private adoption agencies, senior centers, day-care centers, crisis centers, shelters and emergency relief centers, as well as vocational rehabilitation centers).

Projected employment growth in Arkansas's Administrative and Support and Waste Management and Remediation Services sector is primarily a function of the Janitorial, Extermination/Pest Control, Landscaping, and Other Building-Cleaning Services. These industries make up nearly half of the new job creation in the state. The other subsectors within Administrative and Support and Waste Management and Remediation Services responsible for significant job growth are Employment Agencies and Business Support Services (such as call centers).

An examination of job growth in Arkansas by sector is exhibited on the following page in Figure 6.

## OPPORTUNITIES AND CHALLENGES IN ARKANSAS EMPLOYMENT

**Figure 6: Projected Job Growth by NAICS Sector for the State of Arkansas, 2013 – 2023**

NAICS Category	2013 Jobs	2023 Jobs	2013 – 2023 Change	Job Growth/ (Decline)
All Industries	1,565,380	1,713,355	147,975	9%
Agriculture, Forestry, Fishing, and Hunting	62,526	61,226	(1,300)	(2%)
Mining, Quarrying, and Oil and Gas Extraction	16,298	20,907	4,609	28%
Utilities	8,149	8,414	265	3%
Construction	83,437	82,771	(666)	(1%)
Manufacturing	158,513	159,154	641	0%
Wholesale Trade	51,194	57,038	5,844	11%
Retail Trade	161,332	167,194	5,862	4%
Transportation and Warehousing	66,119	67,444	1,325	2%
Information	17,631	17,539	(92)	(1%)
Finance and Insurance	61,059	72,887	11,828	19%
Real Estate and Rental and Leasing	55,187	66,875	11,688	21%
Professional, Scientific, and Technical Services	62,888	72,228	9,340	15%
Management of Companies and Enterprises	32,615	35,616	3,001	9%
Administrative and Support and Waste Management and Remediation Services	86,686	105,781	19,095	22%
Educational Services (Private)	22,646	28,381	5,735	25%
Health Care and Social Assistance	180,026	209,684	29,658	16%
Arts, Entertainment, and Recreation	20,130	24,764	4,634	23%
Accommodation and Food Services	102,656	117,569	14,913	15%
Other Services (except Public Administration)	88,878	98,441	9,563	11%
Government	227,409	239,442	12,033	5%

*Source: EMSI 2014.2 – QCEW Employees, Non-QCEW Employees, Self-Employed, and Extended Proprietors.*

### REFINING OUR UNDERSTANDING OF THE REGIONAL ECONOMY

While sectors focus on one particular dimension of an industry, a cluster represents the entire value chain of an industry from the suppliers to the end products and includes services and specialized infrastructure that support production along the way. While there are many

definitions of clusters available, for this analysis MDC employs the definition of industry clusters that explains links and connections between companies beyond geographic proximity:

*“Clusters are geographic concentrations of interconnected companies, specialized suppliers, service providers, and associated institutions in a particular field that are present in a nation or region. Clusters arise because they increase the productivity with which companies can compete.”*

— Institute for Strategy & Competitiveness, Harvard Business School<sup>1</sup>

The following clusters<sup>2</sup> were reviewed for this report:

- Advanced Materials
- Agribusiness, Food Processing and Technology (Agribusiness)
- Apparel and Textiles (Textiles)
- Arts, Entertainment, Recreation, and Visitor Industries (Recreation)
- Biotech and Health (Health)
- Business and Financial Services (Business)
- Chemicals and Chemical-based Products (Chemicals)
- Defense and Security (Defense)
- Education and Knowledge Creation (Education)
- Energy: Fossil and Renewable (Energy)
- Forest and Wood Products (Forest Products)
- Glass and Ceramics
- Information Technology and Telecommunications (Information)
- Transportation and Logistics (Transportation)
- Manufacturing Supercluster (Manufacturing):
  - Primary Metals Manufacturing (Metals Mfg)
  - Fabricated Metal Products Manufacturing (Fabrication Mfg)
  - Machinery Manufacturing (Machinery Mfg)

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<sup>1</sup> (n.d.). Retrieved from Cluster Studies, Institute for Strategy and Competitiveness website: [www.isc.hbs.edu/competitiveness-economic-development/research-and-applications/Pages/cluster-studies.aspx](http://www.isc.hbs.edu/competitiveness-economic-development/research-and-applications/Pages/cluster-studies.aspx)

<sup>2</sup> The industry clusters reviewed in this report are based on definitions created by Christine Nolan and Purdue University's Center for Regional Development.

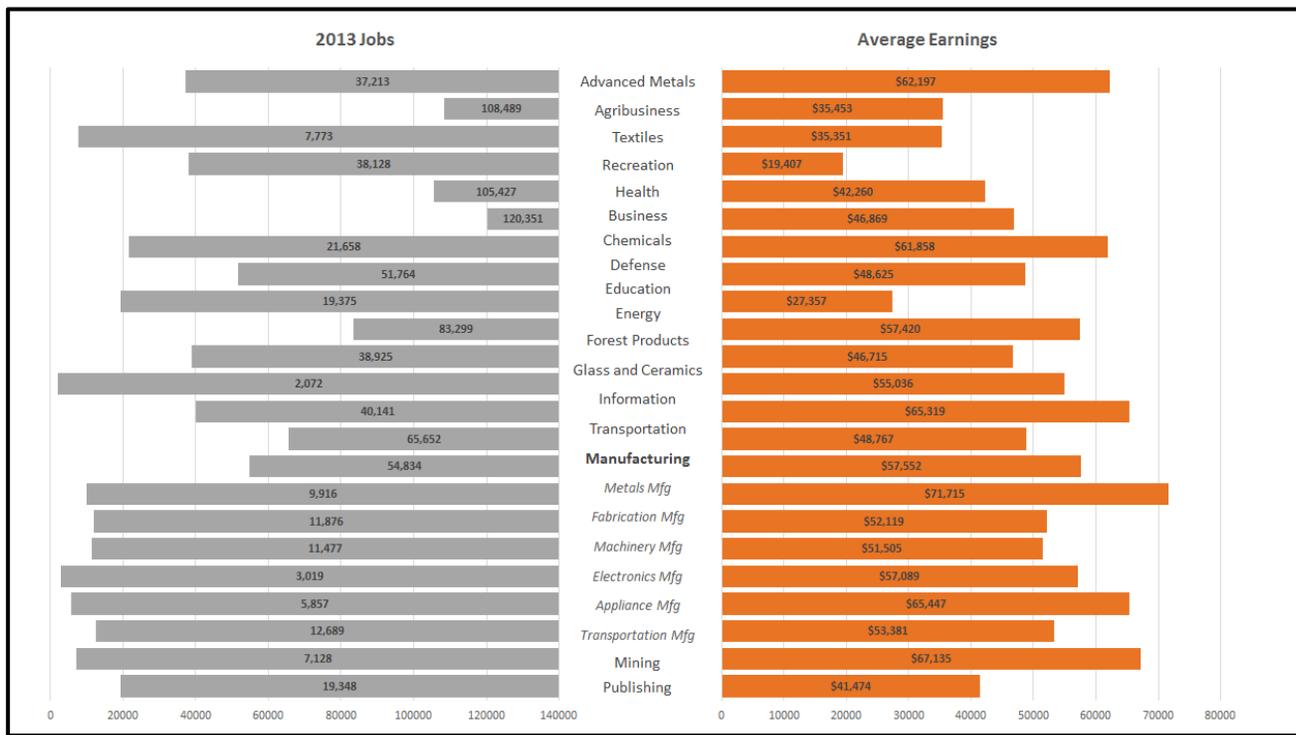
## OPPORTUNITIES AND CHALLENGES IN ARKANSAS EMPLOYMENT

- Computer and Electronic Products Manufacturing (Electronics Mfg)
- Electrical Equipment, Appliance, and Components Manufacturing (Appliance Mfg)
- Transportation Equipment Manufacturing (Transportation Mfg)
- Mining
- Printing and Publishing (Publishing)

The MDC team included the Manufacturing “supercluster,” to gauge how manufacturing as a whole plays a part in the state. It should be noted, however, that superclusters often dilute what is unique about a region and do not allow for education and training providers to understand what kind of specialized occupational training needs to occur within a cluster in a region. Manufacturing, for instance, is a highly specialized cluster with different needs depending on the area of specialization.

All of the clusters were broadly defined, so as to be as inclusive as possible of rural areas. Figure 7 shows the current employment and average earnings in each of these clusters.

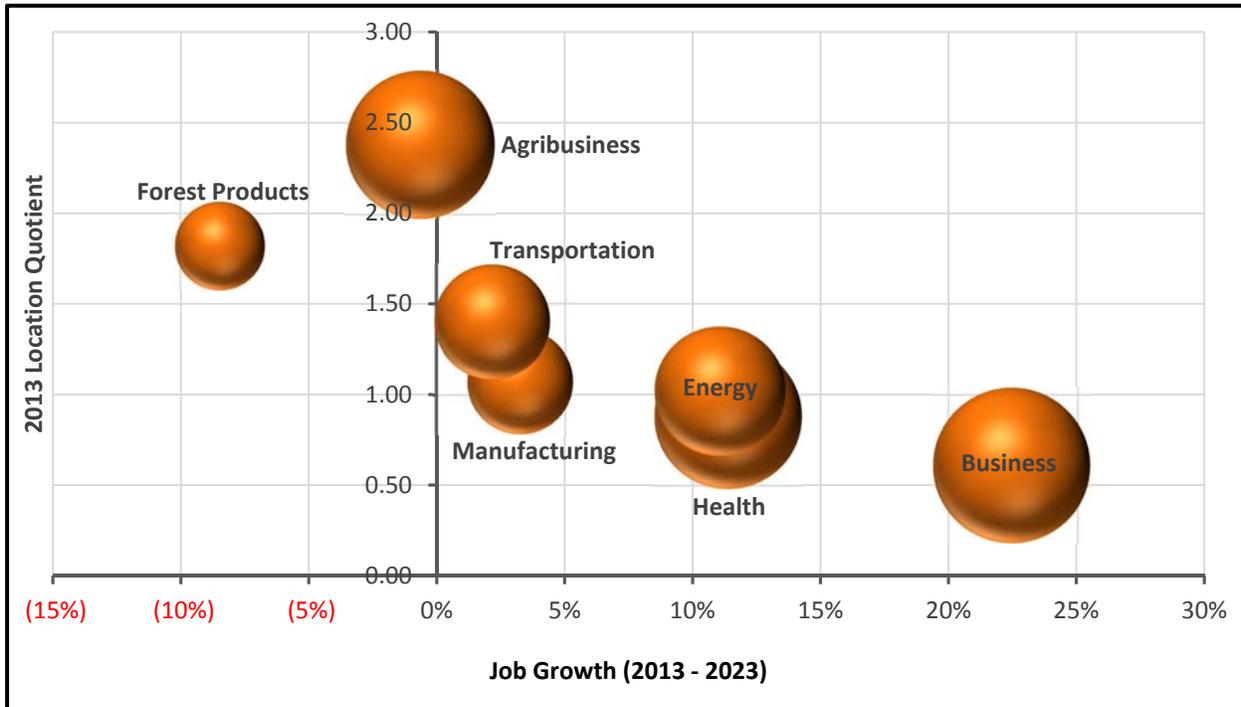
**Figure 7: Current Employment and Average Earnings by Cluster, Arkansas, 2013**



*Source: EMSI 2014.2 – QCEW Employees, Non-QCEW Employees, Self-Employed, and Extended Proprietors.*

For this study, MDC took a closer look at the clusters that contributed the most to Arkansas’s economy in terms of current employment, projected job growth, and their relative concentration compared to the nation as a whole. Figure 8 shows these clusters and their current and projected job growth between 2013 and 2023. In addition, the chart adds the dimensions of location quotients and size of employment to growth to offer an overall picture of the state’s economy. The seven clusters represent 36 percent of total jobs in 2013 as well as 32 percent of projected new jobs added between 2013 and 2023.

**Figure 8: Comparison of Job Growth by Selected Cluster, Arkansas, 2013 – 2023**



*Note: Bubble Size represents 2013 jobs in each cluster.*

*Source: EMSI 2014.2 – QCEW Employees, Non-QCEW Employees, Self-Employed, and Extended Proprietors.*

As Figure 8 shows, two sectors with the highest concentration, Forest Products and Agribusiness, are also the two clusters that are facing job losses over the next two years. Manufacturing, which has a location quotient statewide of 1.42, is poised to have an extremely modest growth of 2 percent through 2023. The fastest-growing clusters are Energy, Health,

and Business, of which, the latter two employ more Arkansans than any of the studied clusters for this report.

The Health and Manufacturing clusters were most commonly mentioned in interviews with industry experts in Arkansas as facing the biggest challenges in meeting the demand to fill projected jobs. The Health cluster is growing at an 11 percent clip, and is forecast to add nearly 36,000 jobs in the next 10 years. The subsector driving employment growth in the cluster is Ambulatory Care Services. This subsector is projected to add 11,500 jobs between 2013 and 2023.

While it is useful to look at clusters on a statewide basis, there are revealing differences in concentration by region. In the appendix, MDC spends some time profiling each region's industrial makeup. Maps of the state showing location quotient in each cluster by county are included in the appendix.

### **PROJECTING OCCUPATIONS: UNDERSTANDING THE TYPES OF JOBS NEEDED, 2013 TO 2023**

Understanding the industrial base in the state gives insight into what is driving employment, which ultimately determines the mix of occupations needed in a region. To see how forecasted job growth will likely affect the future employment needs in Arkansas—and ultimately the needs for education and training—MDC looked at not only new jobs, but also replacement jobs needed to meet demand. Replacement jobs arise as a result of workers retiring or otherwise permanently leaving an occupation. The estimate of replacement needs<sup>3</sup> gives a more complete picture of the total demand for labor in a region. This complete picture of demand can also help job seekers and education and training providers get a better sense of the training that will be needed to prepare for future demand.

More than 25 percent of the current workforce in Arkansas will need to be replaced in the next 10 years. Replacement needs between 2013 and 2023 are forecast to be close to 400,000

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<sup>3</sup> Estimate of replacement needs does not count workers who change jobs but remain in the same occupation.

jobs. Thus, the total projected employment in the state, including both new and replacement needs, over the next 10 years is estimated to be 546,000 jobs.

Figure 9 gives an overall view of the mix of occupations across all economic sectors in Arkansas by occupational category. Within these categories are 786 occupations. As with most states and regions, new job growth is dominated by the retail and personal-care industries. Sales and Related Occupations are projected to add more than 1,800 jobs annually, or a total of 18,825 jobs between 2013 and 2023. Non-farm animal caretakers, hairstylists, child-care workers, and personal-care aides are a few of the occupations propelling new job growth in the Personal Care and Service Occupations category.

## OPPORTUNITIES AND CHALLENGES IN ARKANSAS EMPLOYMENT

**Figure 9: Projected Job Openings by Occupational Category in Arkansas, 2013 – 2023\***

Description	2013 Jobs	2023 Jobs	New Jobs	Replacement Jobs	Total Openings	Median Hourly Earnings
All Occupations	1,565,380	1,713,355	147,975	398,507	546,482	\$16.11
Sales and Related Occupations	190,309	209,134	18,825	53,818	72,643	\$13.66
Office and Administrative Support	199,895	212,539	12,644	48,336	60,980	\$13.43
Food Preparation and Serving Related Occupations	102,065	114,952	12,887	38,549	51,436	\$8.91
Management	126,717	135,857	9,140	30,135	39,275	\$23.02
Transportation and Material Moving	117,460	120,962	3,502	30,857	34,359	\$13.82
Personal Care and Service	69,010	83,597	14,587	17,831	32,418	\$9.51
Production	117,462	119,999	2,537	29,259	31,796	\$14.10
Education, Training, and Library	80,801	91,109	10,308	18,422	28,730	\$19.24
Health care Practitioners and Technical	78,220	87,523	9,303	17,807	27,110	\$30.50
Business and Financial Operations	64,758	76,168	11,410	14,533	25,943	\$25.13
Building and Grounds Cleaning and Maintenance	61,603	71,589	9,986	15,288	25,274	\$9.43
Installation, Maintenance, and Repair	62,757	67,373	4,616	16,547	21,163	\$16.39
Construction and Extraction	76,553	78,202	1,649	18,766	20,415	\$14.86
Health care Support	43,838	50,527	6,689	9,316	16,005	\$10.79
Arts, Design, Entertainment, Sports, and Media	28,815	33,809	4,994	7,444	12,438	\$14.97
Protective Service	25,045	27,573	2,528	7,214	9,742	\$14.62
Community and Social Service	20,419	23,477	3,058	5,295	8,353	\$17.19
Computer and Mathematical	22,991	26,687	3,696	4,575	8,271	\$28.34
Architecture and Engineering	13,914	15,214	1,300	3,627	4,927	\$28.70
Farming, Fishing, and Forestry	15,530	15,183	(347)	5,100	4,753	\$11.59
Life, Physical, and Social Science	9,441	10,806	1,365	3,140	4,505	\$27.02
Legal	9,817	11,075	1,258	1,887	3,145	\$29.83
Unclassified Occupations	9,798	12,581	2,783	(0)	2,783	\$13.60
Military	18,161	17,418	(743)	762	19	\$18.50

*\*Note: EMSI occupation employment data are based on final EMSI industry data and final EMSI staffing patterns. Occupational wage estimates also affected by county-level EMSI earnings by industry.*

*Source: EMSI 2014.2 – QCEW Employees, Non-QCEW Employees, Self-Employed, and Extended Proprietors.*

For the clusters selected for analysis in this report, the total labor demand by businesses will be significant in the coming years. Figure 10 shows the projected new and replacement jobs by cluster. For the Business cluster, the replacement needs are nearly the same as the forecast new jobs created—meaning over the course of the time period ending in 2023, this cluster

will need to replace 22 percent of its current workforce while at the same time making room for more than 27,000 new jobs.

Even clusters facing job losses will have significant staffing needs over the next 10 years. As mentioned earlier, the Agribusiness and Forest Products clusters are contracting in the state, which typically means the workforce system will need to help persons dislocated from these industries find employment in other thriving sectors of the economy, which may require upgraded jobs skills and training. However, given the significant number of projected replacement needs, job losses in these industries may be offset by the need to refill positions affected by attrition.

**Figure 10: Job Openings by Selected Cluster**

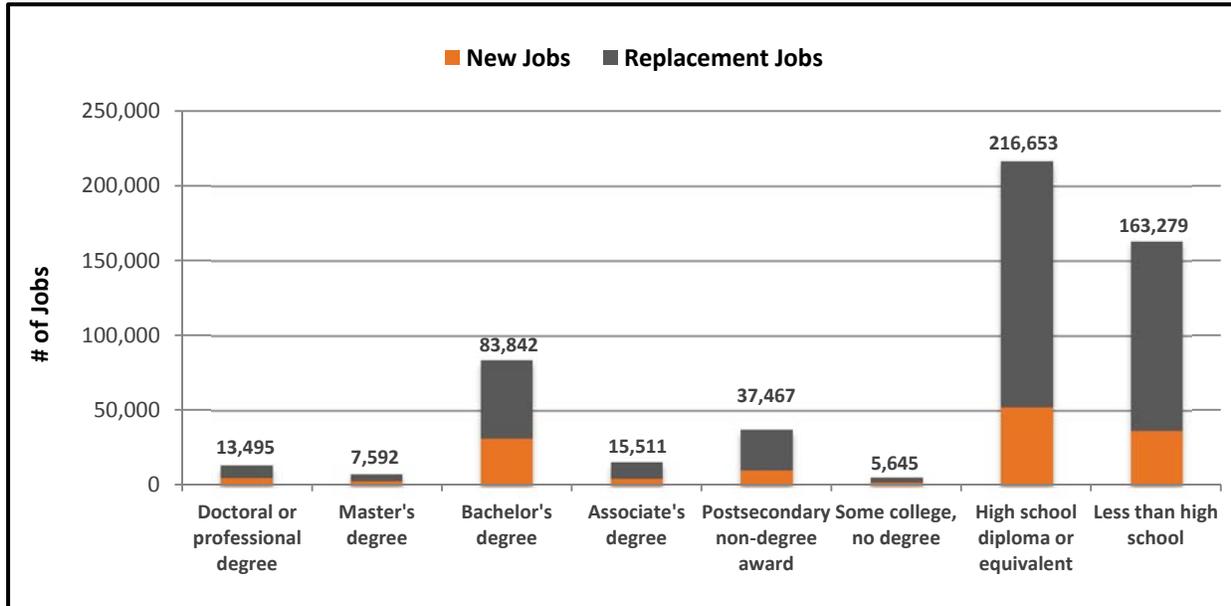
Cluster Name	2013 Jobs	2023 Jobs	New Jobs	Replacement Jobs	Total Openings
Business and Financial Services	120,351	147,380	27,029	26,402	53,431
Biotech and Health	105,427	117,434	12,007	23,659	35,666
Energy (Fossil and Renewable)	83,299	92,518	9,219	22,417	31,636
Agribusiness, Food Processing, and Technology	108,489	107,776	(713)	26,992	26,279
Transportation and Logistics	65,652	67,074	1,422	15,722	17,144
Manufacturing Supercluster	54,835	56,623	1,788	12,902	14,690
Forest and Wood Products	38,925	35,625	(3,300)	9,978	6,678

*Source: EMSI 2014.2 – QCEW Employees, Non-QCEW Employees, Self-Employed, and Extended Proprietors.*

While the sheer number of job openings in these clusters is impressive, there is still the need to understand the skill requirements of these jobs. A true skills analysis is outside the scope of this report, but understanding the educational requirements typically required by employers gives us a basic understanding of the type of careers available to Arkansans. An examination of the projected demand in Arkansas shows that the occupations with the greatest number of openings are also the ones that typically require the least amount of entry-level education and training. Nearly 70 percent of the projected job openings are in occupations that typically require a high school diploma, GED, or less for entry. Only 30 percent of the projected job

openings in Arkansas currently require a postsecondary credential or higher for entry. Figure 11 shows the breakdown of new and replacement jobs by credential level.

**Figure 11: Educational Requirements of Projected Jobs Openings in Arkansas, 2013 to 2023\***



*\*Note: Does not include job openings for which there is not a corresponding education and training level listed for entry level employees. This information is not collected for unclassified occupations.*

*Source: EMSI 2014.2 – OES (QCEW Employees and Non-QCEW Employees classes of worker), U.S. Census, ACS (Self-Employed, Extended Proprietors, and Arkansas Department of Workforce Services).*

A projected increase in low-skill jobs is not specific to Arkansas but part of a larger issue throughout the South. In the report "A Decade Behind: Breaking Out of the Low-Skill Trap in the Southern Economy,"<sup>4</sup> the Center on Education and the Workforce found that the demand for postsecondary talent in the American South is rising at a slower rate than rest of the country. This sluggish growth in jobs requiring postsecondary training is dampening the overall wealth in Southern states. The report's findings suggest that over the past three decades, employers have been paying more for educational attainment. The report projects

<sup>4</sup> Carnevale, A. P., & Smith, N. (2012, July). *A decade behind: Breaking out of the low-skill trap in the Southern economy*. Washington, DC: Center on Education and the Workforce. Retrieved from [cew.georgetown.edu/south](http://cew.georgetown.edu/south)

that by 2020, 66 percent of jobs nationally will require postsecondary education and training, compared with just 59 percent of the jobs in the South.

### **ALL JOBS ARE NOT GOOD JOBS: LIVING-WAGE JOBS**

Perhaps the biggest concern facing Arkansas is the fact that the forecast for employment growth matches the current reality of the wage mix in the state. That is that jobs in the state are overwhelmingly ones that pay less than a living wage. There is no doubt that wages matter to job seekers. Often lower-income individuals have to consider the costs of getting to and from work, child-care expenses, and taxes when accepting a position. Some wages, unfortunately, end up costing the worker more than they are actually bringing home in their paycheck. In Arkansas, the estimated annual cost of living for a single adult without children to survive is \$16,350 (or \$7.86 hourly). The 2014 state minimum wage, which is pegged to the federal minimum wage, is \$7.25 an hour, below the estimated minimum cost of living for a single adult. Though the income needed to sustain a family increases as family size and composition vary, the state minimum wage is the same for all individuals, regardless of how many dependents they may have. Recent legislation that raised Arkansas's minimum wage still falls far below the living-wage calculation.

A comparison of the wage standards is presented in Figure 12 on the next page. The living wage is the hourly rate individuals living in Arkansas must earn to support their family, if they are the sole provider. The poverty wage is typically quoted as gross annual income and has been converted to an hourly wage for the sake of comparison. In most cases, the minimum wage fails to meet the hourly income needed to cover the poverty wage for a family.

The living-wage calculation assumes an individual is working full time and is adjusted based on the size of the household. The living wage varies based on the cost of living and taxes where families live and is available for smaller geographies. For a more accurate estimate of the living wage for a particular geography within Arkansas, please visit the *Poverty in America - Living Wage Calculator* website at [livingwage.mit.edu](http://livingwage.mit.edu).

**Figure 12: Comparison of Wage Standards in Arkansas<sup>5</sup>, 2013**

Hourly Wages	1 Adult	1 Adult, 1 Child	1 Adult, 2 Children	1 Adult, 3 Children	2 Adults	2 Adults, 1 Child	2 Adults, 2 Children	2 Adults, 3 Children
Living Wage	\$7.86	\$16.37	\$20.80	\$26.38	\$12.80	\$16.03	\$17.44	\$20.35
Poverty Wage	\$5.21	\$7.00	\$8.80	\$10.60	\$7.00	\$8.80	\$10.60	\$12.40
Minimum Wage	\$7.25	\$7.25	\$7.25	\$7.25	\$7.25	\$7.25	\$7.25	\$7.25

*Source: Living Wage Calculator - Part of Poverty in America, The Living Wage Project.*

While the minimum wage sets an earnings threshold under which our society is not willing to let families slip, it fails to account for the true expenses families incur or for inflationary pressures. Consequently, many working adults will need to supplement their income with public benefits and/or hold multiple jobs in order to afford to feed, clothe, house, and provide medical care for themselves and their families.

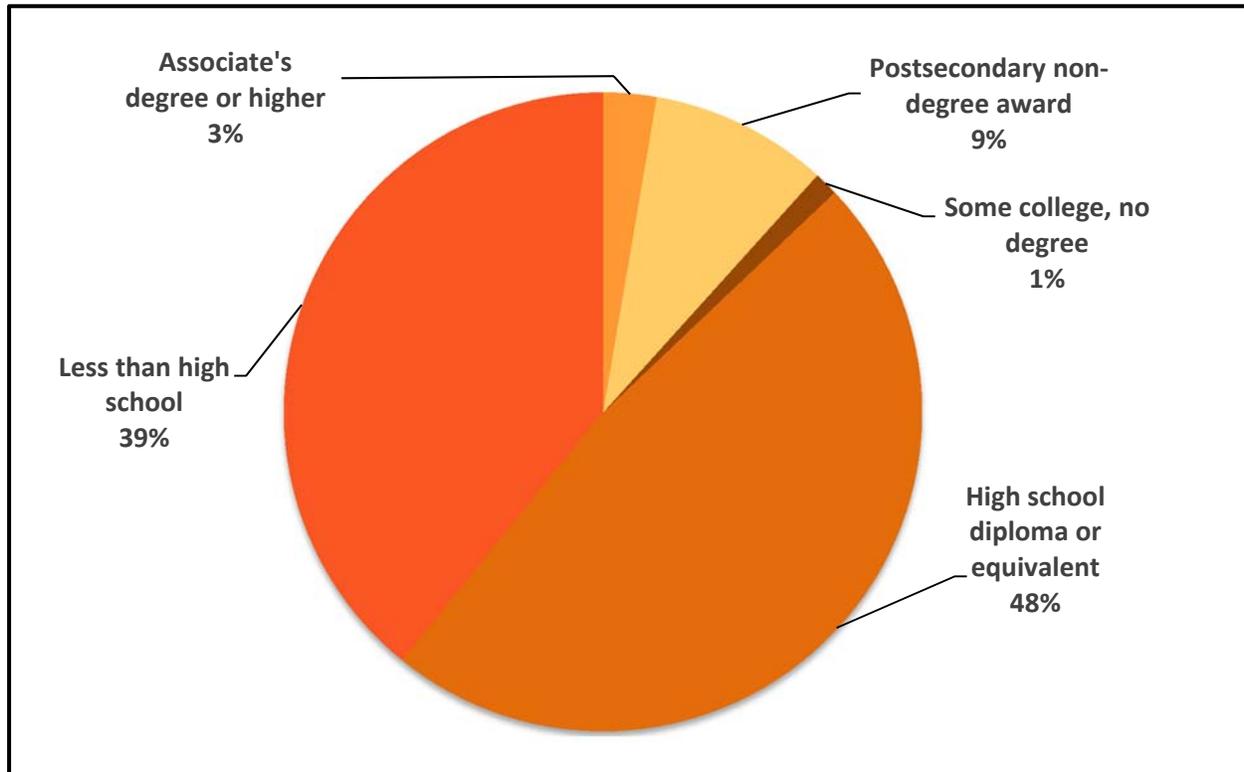
The median hourly earnings for a job in Arkansas is \$16.11—\$33,508 annually—just under the living wage needed by a family consisting of one adult and one child and just above the living wage needed to sustain a family consisting of two adults and one child in Arkansas. In 2013, 65 percent of the jobs in the state were in occupations that offer median hourly earnings below the living wage for sustaining a family unit consisting of one adult and one child.

Critically, there is a direct correlation between the degree level of individuals and their compensation. Figure 11 shows, the educational level most often needed to enter an occupation in Arkansas, based on the educational level of the incumbent workforce in these positions, is a high school degree or less. In Arkansas, 87 percent of the jobs with median hourly earnings below \$16.37. This amount is the living wage for a family consisting of one adult and one child. These jobs are in occupations that typically are lower-skill and require a high school diploma, its equivalent, or less. Thirteen percent of jobs, with median hourly

<sup>5</sup> "The living wage shown is the hourly rate that an individual must earn to support their family, if they are the sole provider and are working full-time (2080 hours per year). All values are per adult in a family unless otherwise noted. The state minimum wage is the same for all individuals, regardless of how many dependents they may have. The poverty rate is typically quoted as gross annual income. We have converted it to an hourly wage for the sake of comparison." (Source: Living Wage Calculation for Arkansas. [livingwage.mit.edu/states/05](http://livingwage.mit.edu/states/05))

earnings less than the living wage for a family—roughly 132,000 jobs total—still require at least some level of postsecondary education for entry-level employment.

**Figure 13: Percent of Jobs Paying Less than Living Wages by Entry-Level Education, 2013**



*Source: EMSI 2014.2 – QCEW Employees, Non-QCEW Employees, Self-Employed, and Extended Proprietors, and the Living Wage Project.*

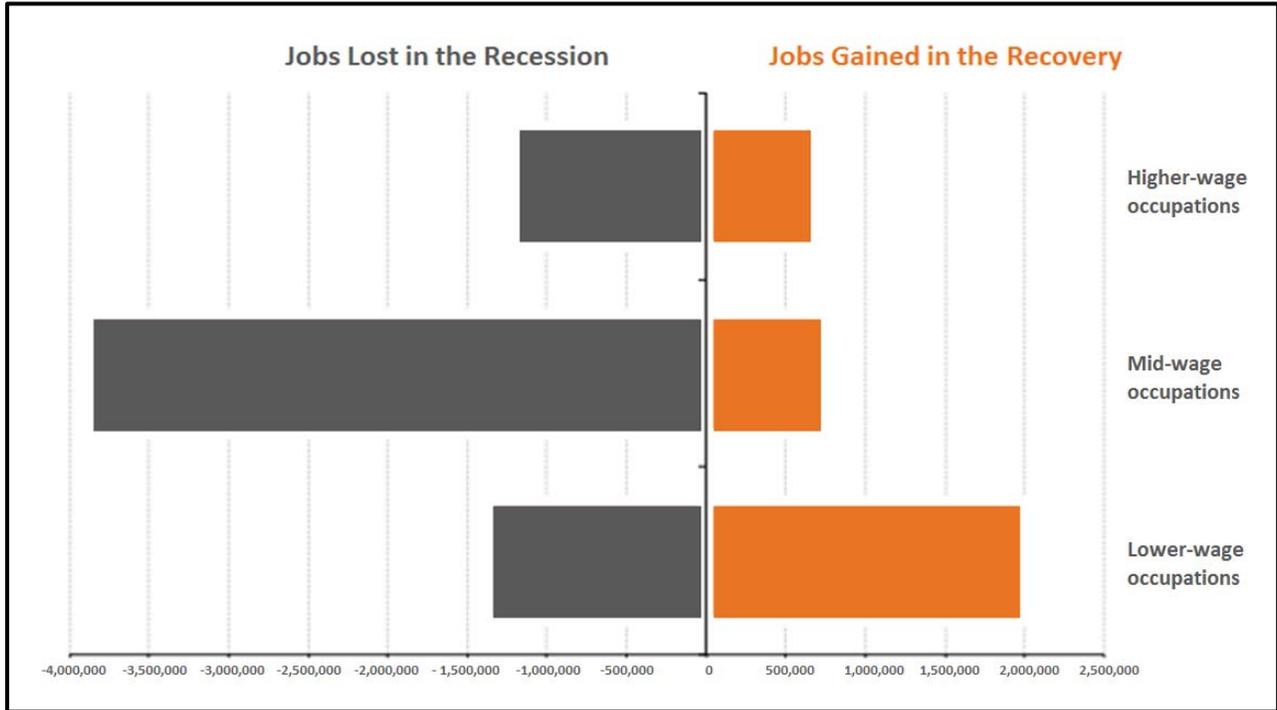
Arkansas is not alone in facing these challenges. The National Employment Law Project found that most of the job gains during the recovery were concentrated in lower-wage occupations.<sup>6</sup> In 2011, the Economic Policy Institute projected that 28 percent of workers in the United States will hold low-wage jobs in 2020.<sup>7</sup> However, the analysis defines low-wage jobs as those

<sup>6</sup> Bernhardt, A., McKenna, C., & Evangelist, M. (2012, August). *The low-wage recovery and growing inequality*. New York, NY: National Employment Law Project. Retrieved from [nelp.org/page/-/Job\\_Creation/LowWageRecovery2012.pdf?nocdn=1](http://nelp.org/page/-/Job_Creation/LowWageRecovery2012.pdf?nocdn=1)

<sup>7</sup> Luhby, T. (2012, August). Low-paying jobs are here to stay. *CNNMoney*. Retrieved from [money.cnn.com/2012/08/02/news/economy/low-pay-jobs/index.htm?iid=HP\\_LN](http://money.cnn.com/2012/08/02/news/economy/low-pay-jobs/index.htm?iid=HP_LN)

with wages at or below a poverty level for a family of four. If the living wage was applied to this analysis, the number would increase.

**Figure 14: Net Jobs Gains by Occupational Wage Group, During Great Recession & Recovery\*, 2008 – 2012**



*\*Note: Recession is 2008 Q1 to 2010 Q1; recovery is 2010 Q1 to 2012 Q1.*

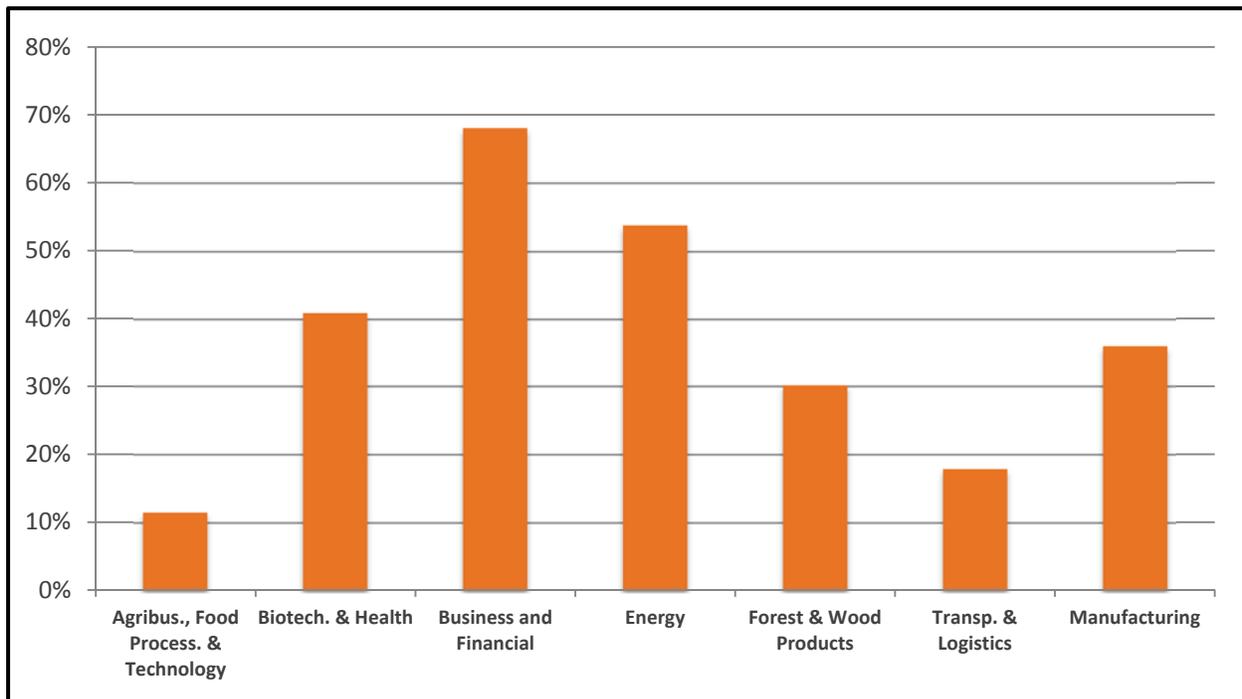
*Source: NELP analysis of Current Population Survey.*

Some clusters provide better opportunities for workers to earn a living wage than others. Clusters with jobs concentrated in occupations that typically do not require a postsecondary degree, such as Agribusiness and Forest Products, tend to have fewer jobs that pay family-sustaining wages. The exception to this trend is the Manufacturing supercluster.

Many of the jobs, and by extension job openings, are concentrated in occupations where employers typically do not require a postsecondary credential. Most of the jobs are in occupations that have typically required a high school diploma or equivalent for entry. However, highly skilled occupations, like industrial machinery mechanics, metal and plastic patternmakers, and machinery workers all have median hourly earnings above the living-wage

amount for one adult and one child in the state. Overall, 36 percent of the jobs in manufacturing pay above the living-wage hourly rate of \$16.37, as depicted in Figure 15. Many of these jobs, however, are in mid- to advanced-career opportunities—such as management and business operations specialists—that may not be immediately available to younger workers or workers just entering the workforce.

**Figure 15: Cluster Jobs with Living-Wage Median Hourly Earnings, Arkansas, 2013**



*Source: EMSI 2014.2 – QCEW Employees, Non-QCEW Employees, Self-Employed, and Extended Proprietors, and the Living Wage Project.*

In health science occupations, the notion that more education leads to good jobs is challenged. Across all sectors of the Arkansas economy, healthcare workers are in high demand. Within the Health cluster, 56 percent of the jobs are in occupations that require some level of postsecondary credential for entry. Even with a postsecondary credential, several health-related careers offer wages that do not allow those workers to support their household. Figure 16 on the next page shows the jobs in the health science field that pay less than a living wage—only two do not typically require at least some postsecondary credential.

**Figure 16: Health Science Careers Paying Less Than a Living Wage**

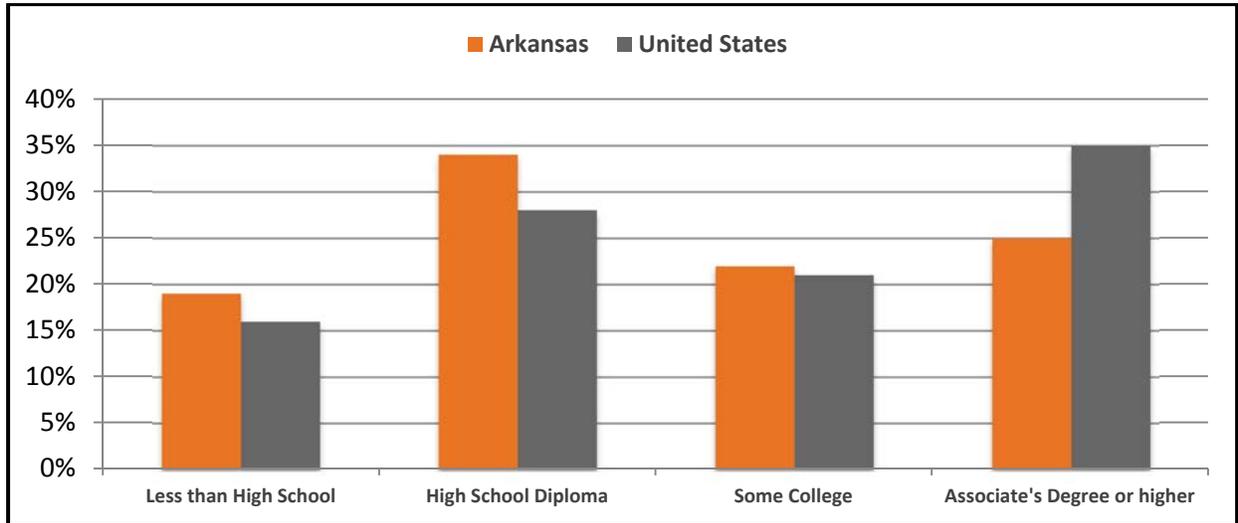
Description	2013 Jobs	2023 Jobs	Median Hourly Earnings	Typical Entry Level Education
Psychiatric Technicians	626	716	\$10.64	Postsecondary non-degree award
Dietetic Technicians	219	239	\$10.99	Associate's degree
Pharmacy Technicians	3,552	4,104	\$12.09	High school diploma or equivalent
Emergency Medical Technicians and Paramedics	2,131	2,438	\$12.93	Postsecondary non-degree award
Medical Records and Health Information Technicians	1,396	1,564	\$13.87	Postsecondary non-degree award
Ophthalmic Medical Technicians	228	269	\$14.17	Postsecondary non-degree award
Opticians, Dispensing	618	710	\$14.51	High school diploma or equivalent
Recreational Therapists	197	211	\$15.57	Bachelor's degree
Veterinary Technologists and Technicians	313	416	\$15.78	Associate's degree
Medical and Clinical Laboratory Technicians	1,430	1,627	\$15.85	Associate's degree
Health Care Practitioners and Technical Workers	266	311	\$16.24	Bachelor's degree

*Source: EMSI 2014.2 – QCEW Employees, Non-QCEW Employees, Self-Employed, and Extended Proprietors, and the Living Wage Project.*

## ASSESSING THE CURRENT PIPELINE OF WORKERS

Fitting its current status as a state with an abundance of low-wage jobs, Arkansas’s rate of educational attainment lags far behind the rest of the nation. In 2013, only 25 percent of Arkansans had a degree from postsecondary institutions, compared with 35 percent nationally. Fortunately, the trend appears to be on the upswing from 2003. Figure 17 on the next page compares the postsecondary educational attainment for the working-age population of Arkansas and the United States.

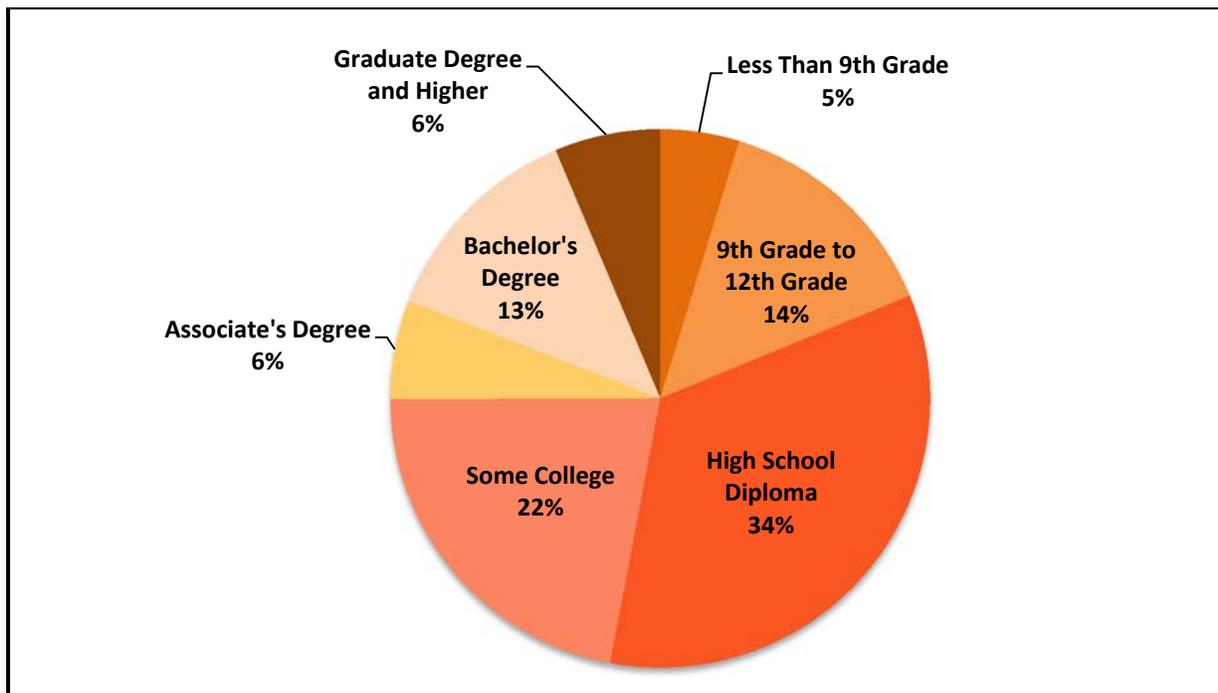
**Figure 17: Percent of the Population Age 25 and Older with a Postsecondary Degree**



Source: EMSI 2014.2 & IPEDS database, U.S. Department of Education's National Center for Education Statistics.

A more detailed breakdown of the educational attainment of adults in Arkansas over the age of 25 years in 2013 is represented in Figure 18.

**Figure 18: Distribution of Arkansas Adults 25 and Older by Educational Level, 2013**



Source: EMSI 2014.2 & IPEDS database, U.S. Department of Education's National Center for Education Statistics.

Still, demand from business and industry often drives the educational attainment sought by individuals. Given the current concentration of jobs in Arkansas that do not require a postsecondary credential, it is understandable that a significant portion of the population has a high school diploma or less. The demand for labor often pushes the supply for educational attainment. In Arkansas, the industrial profile is shifting from jobs concentrated in clusters that benefit from Arkansas natural resources (e.g., Forest Products and Energy) and agriculture (e.g. Agribusiness) into jobs that require, and pay, for higher skills and education.

Since 2009, the number of degrees awarded by postsecondary institutions has increased 25.6 percent—from 33,300 postsecondary awards in 2009 to 42,600 in 2013. This growth, should it remain consistent, could have real implications in creating good jobs for Arkansans. Increased levels of educational attainment in the state over the next 10 years will improve a worker's chances of obtaining a living-wage job and better career advancement and will more likely attract industry and businesses seeking a high-skilled workforce.

To get a sense of how well the educational supply meets the needs of future demand for labor, MDC compared the number of completions by training program to annualized projected job openings. The purpose of this exercise is to answer the question, "Are the educational institutions in Arkansas prepared to meet the demand for workers in the next decade? If not, where are the gaps that need to be filled? Where might there be a surplus of workers?"

The analysis of the pipeline of workers to meet the needs of employers unearthed several occupations where the typical entry-level education requirement did not require education and training beyond the high school level. Consequently, the analysis of the current pipeline of workers focuses on jobs that are higher in skill, have median hourly earnings equal to or above \$16.37, and typically require some level of postsecondary training. This resulted in a review of 257 occupations, more than 320,000 jobs in 2013, and annual openings of more than 11,700 jobs for the 10-year period ending in 2023.

For most of the occupations identified in this gap/surplus analysis, the educational system produced enough workers on an entry-level basis to meet the job openings. However, in a few cases, potential shortages of workers were identified either because the number of recent graduates is less than the projected number of openings on an annual basis or because the region did not have an educational program that specifically trained for an occupation. In cases where there are educational and training programs, but not enough recent completers, the gap is less concerning, especially as the labor market rebounds and people enter back into the workforce to take these occupations. Since the educational program exists in the region, it is logical to believe that the needs of employers, if not currently met, can be met by enhancing the workforce system between educational providers and employers.

Employers, however, face a different challenge for occupations with significant job openings for which there are not corresponding educational and training programs in the state. They most likely have to recruit employees from outside the region. In interviews with existing employers in the state, several mentioned that recruiting for particular occupations proved challenging and often led to businesses putting off expanding in the state. One occupational area where there does seem to be a significant shortage is engineering. For the engineering occupations listed in Figure 19 on the next page, there are job growth opportunities but no corresponding academic programs at colleges or universities in the state that can provide the suggested required credentials for entry into these occupations.

**Figure 19: Selected Engineering Occupations, Projected Growth and Earnings**

Occupation	2013 Jobs	2013 – 2023 % Job Growth	Median Hourly Earnings	Typical Entry-Level Education
Aerospace Engineers	262	5%	\$33.02	Bachelor's degree
Marine Engineers and Naval Architects	28	11%	\$23.43	Bachelor's degree
Materials Engineers	116	11%	\$36.84	Bachelor's degree
Mining and Geological Engineers (Including Mining Safety Engineers)	24	13%	\$23.20	Bachelor's degree
Nuclear Engineers	125	14%	\$35.09	Bachelor's degree
Petroleum Engineers	136	23%	\$51.35	Bachelor's degree

*Source: EMSI 2014.2 – QCEW Employees, Non-QCEW Employees, Self-Employed, and Extended Proprietors, and IPEDS.*

Please refer to the appendix for a complete list of occupations in which corresponding education and training programs are not currently being offered by postsecondary institutions in the state of Arkansas.

It should be noted that not all shortages mentioned by employers are evidenced by the data. Analysis of the Manufacturing supercluster reveals the greatest concern regarding potential employee shortages. Interviewees consistently have mentioned difficulties in finding qualified applicants to fill positions that require a range of technical skills. However, the quantitative analysis of the cluster does not necessarily support this perception. The lack of qualified welders to meet employer demand was a frequently cited example. Strictly looking at the numbers, it appears there are enough welders to meet the demand in manufacturing firms. The mismatch is more likely due to breakdowns in the systems by which postsecondary graduates are connected to employers, lack of industry-specific technical training, and concerns about the wage rates associated with these careers.

This method of determining workforce gaps and surpluses has certain limitations. The first concerns the method of estimating supply and demand. The primary element of this limitation is that the estimated allocation of completers of postsecondary institutions to occupations is based on the ultimate distribution demand. That is, the methodology assumes that the

graduates from a given program will distribute themselves across occupations more or less in line with the demand for those occupations.

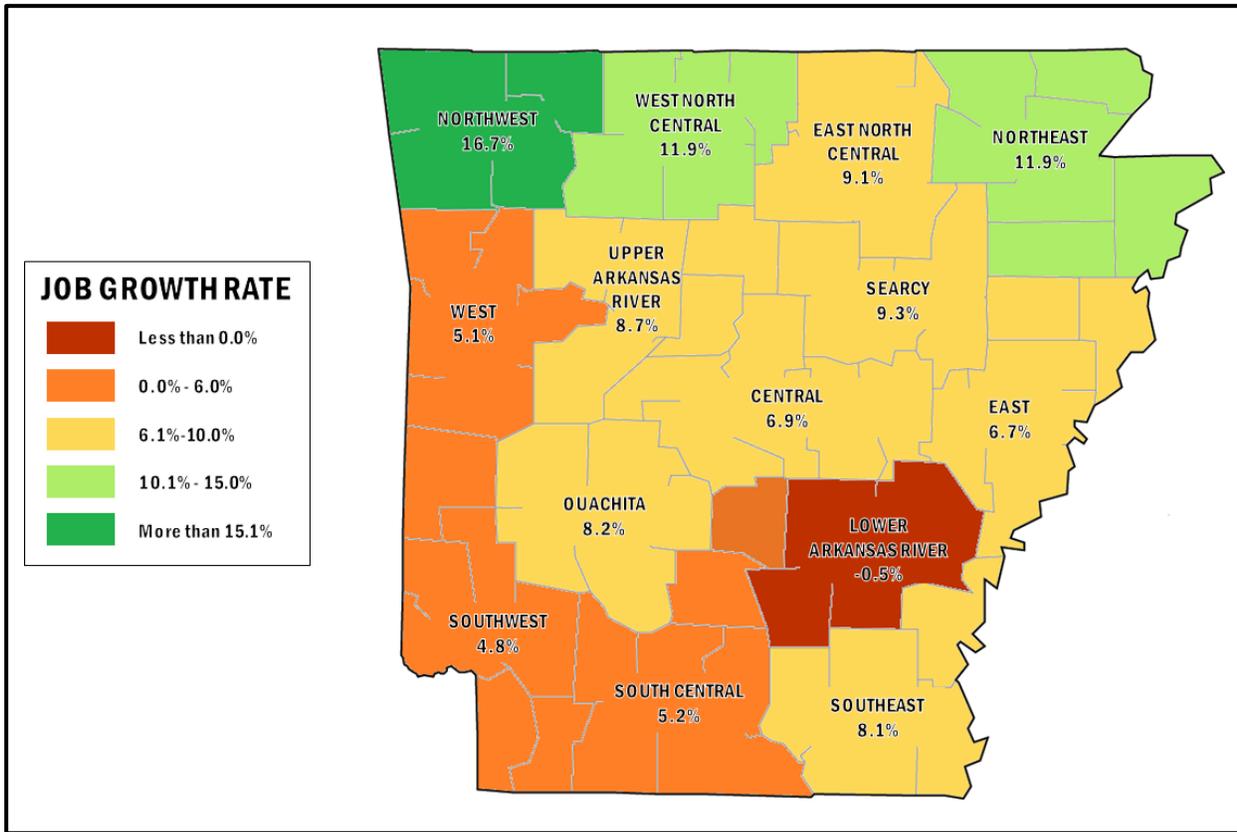
This method does not account for unemployment, those who go into another field, or those who drop out of the labor force. MDC believes, however, that labor market demand was still the best available basis of estimating how program graduates would be allocated and goes much further in attempting this allocation than most other labor market gap analyses. In addition, the methodology does not account for in-migration of already-prepared workers, the rapid relocation of dislocated workers (who may be able to transition quickly with on-the-job training), or the role of other educational institutions in preparing workers for specific occupations.

### **REGIONAL DIFFERENCES IN THE ECONOMY**

While the information in this report applies to almost all of Arkansas, there are clear differences in the availability of jobs by region. Thus, statewide solutions may not address the particular needs of a region without taking into account the industrial makeup of the region in question.

For this study, MDC is using the concept of labor sheds to analyze regional economies. This allows more analysis of commuting patterns to give a better sense of the job availability in particular regions of the state. The three regions that are experiencing the greatest job growth are in the Northeast, Northwest, and the West North Central Labor Sheds. Conversely, the Lower Arkansas River Labor Shed is projected to experience a slight decline in job growth between 2013 and 2023. Figure 20 shows projected job growth by region.

**Figure 20: Map of Growth by Arkansas Labor Shed**



*Source: EMSI 2014.2 – QCEW Employees, Non-QCEW Employees, Self-Employed, and Extended Proprietors.*

There are also substantial differences in industrial makeup by region. Figure 21 shows the employment in the studied clusters as a percentage of total regional employment. The appendix includes detailed discussions of each of the region’s projected job growth and industrial concentrations.

**Figure 21: Percentage of Employment in Arkansas Labor Sheds by Industrial Cluster, 2013**

Region	Agribusiness	Biotech and Health	Business & Financial	Energy	Forest & Wood Products	Manufacturing	Transportation & Logistics
Central	2.0%	7.0%	11.1%	4.9%	1.6%	2.2%	3.5%
East	8.9%	6.5%	4.9%	4.1%	1.0%	1.6%	6.0%
East North Central	13.3%	9.1%	5.1%	3.9%	2.5%	1.8%	3.8%
Lower Arkansas River	11.5%	7.8%	4.0%	5.1%	3.8%	5.0%	3.9%
Northeast	11.2%	5.4%	4.2%	4.7%	1.9%	10.9%	6.1%
Northwest	8.2%	4.9%	7.8%	3.9%	1.9%	2.4%	5.6%
Ouachita	3.3%	8.3%	8.4%	4.0%	4.0%	2.1%	2.2%
Searcy	9.0%	7.5%	5.8%	7.5%	1.8%	4.6%	5.5%
South Central	3.1%	7.7%	4.6%	13.9%	5.5%	3.5%	3.4%
Southeast	8.8%	7.0%	4.7%	3.6%	11.5%	1.5%	2.6%
Southwest	16.4%	5.5%	4.5%	5.4%	4.3%	4.4%	5.3%
Upper Arkansas River	16.3%	5.0%	5.6%	6.7%	2.7%	4.2%	4.8%
West	10.0%	7.5%	5.7%	8.5%	2.5%	5.3%	5.0%
West North Central	7.4%	8.6%	6.3%	3.2%	3.3%	4.7%	4.1%

*Source: EMSI 2014.2 – QCEW Employees, Non-QCEW Employees, Self-Employed, and Extended Proprietors.*

## THE QUESTIONS LEFT UNANSWERED

This study was designed to take an analytical look at the current and projected trends in employment in Arkansas. And by design it raises some critical questions that the state will need to develop strategies to address in the coming years.

### 1. HOW CAN THE STATE CREATE BETTER-PAYING JOBS?

The numbers are striking: 65 percent of the jobs in the state are currently in occupations that offer median hourly earnings below the living wage and forecasts show that job growth remains concentrated in similar opportunities. While the economic recovery across the nation appears not to be accompanied by a growth in wages, in Arkansas, and the rest of the South, the problem is worse.

There unfortunately is not a silver bullet to addressing this issue. However, understanding the industrial makeup of the state and devoting some strategic attention to those industries and those occupations that provide the highest wages are worth consideration.

Understanding the needs of industries that traditionally not only pay their workers more but have opportunities for high-skill jobs will be critical in developing any effective strategies to increase the number of better-paying jobs in the state.

### **2. WHAT ROLE DO SOFT SKILLS PLAY IN EMPLOYMENT GAPS?**

As the study shows, there are not identifiable gaps in terms of the numbers of individuals in Arkansas who can fill the number of low- and medium-skill jobs that make up so much of the state's economy. Interviews with companies and industry experts, however, do point to real concerns about the ability of companies to fill open positions in jobs in this lower-skill spectrum. Understanding the reasons for this difficulty in connecting employees to opportunities will be critical. Employers traditionally focus on the lack of soft skills in prospective employees as the major deterrent to employment, pointing to issues such as punctuality and ability to pass drug screening as major concerns. While these issues are undoubtedly true in some cases, a further exploration of the role of low wages in discouraging employment is necessary to get a full picture of the reasons for any employment gaps that are occurring.

### **3. WHAT CAN THE STATE'S POSTSECONDARY SYSTEM DO?**

In certain higher-skill jobs, particularly engineering, there are identifiable gaps between employer needs and employee credentials. Making sure that local universities and two-year institutions are producing enough graduates, and not just graduates but those with the correct skill set should be a priority in addressing job-skill mismatch issues that exist in the state.

### **4. WHAT ARE THE CAREER LADDERS IN THE STATE?**

There will always be jobs that pay low wages and that can be classified as low skill. The question then becomes are these dead-end jobs, or with the proper training and connections, can they lead to jobs that pay better? Understanding the career ladders particularly in clusters of growth will be key to making sure that Arkansas moves from a low-wage economy to one that produces jobs that pay enough to ensure a high quality of life for everyone in the state.

### METHODOLOGY

The purpose of this report is to build off of existing research to determine the number, type, and geographic location of jobs within the state and where jobs are forecast to grow in the future. To begin MDC's analysis of jobs and regional influences of the labor market, MDC reviewed existing literature and studies on employment trends and projections of the Arkansas labor market. This information was helpful to lay the groundwork for the interview protocol and data analyses. For example, the definitions of regions are based on the labor sheds identified by the University of Arkansas at Little Rock (UALR) report, "Adapting to a New Economy: Innovation and Industry Clusters in Arkansas."

The industry clusters definitions used in this report are also the same as the UALR report. The industry clusters used in this report are based on definitions created by Christine Nolan and Purdue University's Center for Regional Development. The definitions are lists of standard NAICS codes, which categorize hundreds of types of business activity. The Purdue research team defined clusters that could be usefully applied to analysis of both rural and urban-metropolitan regions in the United States, using county-level data as a base.

The data MDC used in this report are from Economic Modeling Specialists, Inc. (EMSI). EMSI collects information from state and federal databases, including the Quarterly Census of Employment and Wages (QCEW), Non-Employer Statistics (NES), County Business Patterns, Regional Economic Information Systems (REIS), and Bureau of Labor Statistics (BLS) Occupational Employment Statistics. EMSI then uses a proprietary algorithm to estimate the suppressed job numbers (those numbers that are undisclosed by the government to maintain employer wage/benefit confidentiality). For this report MDC used the complete dataset, which includes the self-employed jobs not covered under the Unemployment Insurance law. Using the complete dataset is especially helpful in economies that have a significant number of animal and crop farming jobs. Thus, EMSI allows for a review of the whole labor market, moving beyond the jobs that are typically reported by the state to the BLS. The difference

between the EMSI complete dataset and the 2013 BLS QCEW is about 418,400 jobs in Arkansas.

In addition to quantitative analysis, MDC conducted interviews with representatives of selected companies in a variety of key clusters in the region. These interviews were critical to understand the current and projected needs for filling jobs in the state.

### ACKNOWLEDGEMENTS

The findings described in this report are based on research commissioned by the Winthrop Rockefeller Foundation and conducted by a team of researchers from MDC, Inc.

The methods and early findings of the study were reviewed by an advisory group composed of experts from the public, nonprofit, and private sectors in Arkansas. Members included:

- Jerry Adams, Board Member, Winthrop Rockefeller Foundation
- Cory Anderson, Vice President, Winthrop Rockefeller Foundation
- Adam Arroyos, Founder/CEO, GrandSlam Performance Associates
- René Bryce-Laporte, Principal, Bryce-Laporte Information & Consulting
- Russell Carey, Program Associate, Winthrop Rockefeller Foundation
- Charisse Childers, Director, Arkansas Department of Career Education
- Marvin Childers, President, The Poultry Federation
- Kim Davis, Director of External Relations & Economic Development, Northwest Arkansas Council
- Kathy Deck, Director, University of Arkansas Center for Business and Economic Research
- Bob East, Founding Member, East-Harding Construction
- Glen Fenter, Former President, Mid-South Community College
- Gina Gomez, Executive Director, Hispanic Community Services, Inc.
- Regan Gruber Moffitt, Associate Vice President, Winthrop Rockefeller Foundation
- Ryan Hale, NW Arkansas & Delta Programs Officer, Walton Family Foundation
- Heather Larkin, President & CEO, Arkansas Community Foundation
- Dr. Marta Lloyd, Executive Director, Winthrop Rockefeller Institute
- Mike Malone, President & CEO, Northwest Arkansas Council
- Chris Masingill, Federal Co-Chair, Delta Regional Authority
- Don Munro, Founder, Munro Shoes
- Lisenne Rockefeller, Board Member, Winthrop Rockefeller Foundation
- Bill H. Stovall, III, Executive Director, Arkansas Community Colleges
- Terry Trevino-Richard, State Director, LULAC
- Lori Walker, Economic Development Specialist, City of Pine Bluff
- Sherece West, President & CEO, Winthrop Rockefeller Foundation
- Randy Zook, President & CEO, Arkansas State Chamber





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