2016-2017

SEPTEMBER 12, 2016

Yavapai COLLEGE

ENVIRONMENTAL SCAN

2016-2017

PRESENTED BY: INSTITUTIONAL EFFECTIVENESS AND RESEARCH
AND THE YC REGIONAL ECONOMIC DEVELOPMENT CENTER

TABLE OF CONTENTS

EXECUTIVE SUMMARY AND KEY FINDINGS

INTRODUCTION

An environmental scan is a vital component of informed strategic planning and decision making. The environmental scan pulls information from national, state, county, and local community levels to examine trends in the areas of competition, demographics, economics, labor force, education, and technology. The report is organized as follows:

Section I: Competition—this section addresses and summarizes Yavapai College's higher education and community education competitors.

Section II: Demographics—this section presents key demographics at the national and state level, and provides a detailed look at Yavapai County.

Section III: Economics—this section presents economic trends impacting U.S. colleges and universities.

Section IV: Labor Force—this section addresses labor force trends in Yavapai County and alignment of Yavapai College programs with workforce demands.

Section V: Education—this section addresses education trends impacting colleges and universities. In addition to national and state trends, specific information for Yavapai County is included.

Section VI: Technology—this section addresses technology trends that higher education institutions must balance to ensure the security of information while meeting the evolving changes demanded by students.

Section VII: Social and Political—this section presents current social and political trends affecting colleges and universities today.

The following two pages present the key trends identified during this environmental scanning process.

KEY FINDINGS

COMPETITION

- **Higher education is one of the most competitive sectors in the nation**. Yavapai College's biggest competitors are online programs and courses offered by in-state institutions that also maintain a physical presence in Arizona. Rio Salado, A Maricopa Community College, offers 56 online programs and more than 500 online classes. Most of Rio Salado's course offer between 6 and 8 start dates per semester.

- **Arizona public universities are aggressively marketing to high school seniors statewide**. Arizona universities are using generous scholarship awards, athletic teams, and recreational facilities to entice students. Academic scholarships are available to students with a core high school GPA as low as 3.00, and many students receive a full tuition scholarship with a core GPA above 3.50.

- **Yavapai College's career and technical education programs are not immune from for-profit competition**. Wizard Education, a provider of allied health and paramedicine programs, is offering coursework in Prescott and some classes are offered at worksites like fire stations.

DEMOGRAPHICS

- **Yavapai County's fastest growing age group is residents age 65 and older.** Yavapai County's retirement population is nearly twice that of Arizona and the United States. In the next five years, residents age 65 and older are forecasted to increase by more than 7,000 people. In contrast, the population under 55 is anticipated to decline by about 2,300.

- **The county's workforce population significantly lags the state and nation in educational attainment**. Yavapai County's bachelor's degree attainment rate is 1.6 times lower than the U.S. level and 1.4 times below the Arizona measure.

ECONOMIC

- **Unemployment at near pre-recession levels.** Yavapai County's unemployment rate of 4.9% is lower than the state rate of 5.5%. Community college credit enrollment typically runs counter-cyclical to employment rates.

- **42 million jobs will require training beyond high school but less than a bachelor's degree**. Yavapai College is in position to supply workers with the required training, but the key will be to relocate more of these jobs to Yavapai County.

LABOR FORCE

- **Yavapai College programs align well with industry needs.** Cross-referencing industry sector growth with occupational growth over the past five years indicates high demand for academic programs in healthcare, manufacturing, management, business and public administration, marketing and communications, and informational technologies.

- **Top county employment sectors include government, healthcare, retail, food and accommodation, and manufacturing**. Of these top five sectors, three (government, healthcare, manufacturing) provide average earnings ranging from $48,948 to $58,556.

EDUCATION

- **High school enrollments continue to decline in Yavapai County**. Between 2011 and 2016, high school enrollments in the county have declined about five percent.

- **Nationally, community colleges have experienced five straight years of declining enrollment**. Arizona community colleges have mirrored the national experience.

- **Low college degree completion rates persist**. With 60 percent of jobs by 2020 requiring postsecondary training, the need to increase degree and certificate completion has never been greater.

TECHNOLOGY

- **Prevention of cyberattacks and IT security are a top priority**. The threat of cyberattacks leading to data breaches and ransom demands is intensifying for colleges and universities. More than ever, it is vital for colleges to invest in IT threat intelligence, and staff with expertise to mitigate risk.

SOCIAL AND POLITICAL

- **State disinvestment in higher education persists**. Arizona's support of Yavapai College has been on a downward trend and now represents less than 2% of the operating budget. There is a high probability that state funding of Yavapai College will decrease in the near future.

- **Political activism on college campuses is on the rise.** Recent heightened tensions surrounding race and sexual orientation have colleges and universities wrestling with issues ranging from free speech to inclusivity. Student activism on campuses has centered on calls for more diversity, cultural competency training, and increased support for marginalized students.

COMPETITION

Higher education is one of the most competitive sectors in the nation. Driven by technological change, globalization, divestment of state funding, and changing public and political attitudes, completion has never been greater. Today, there are more than 5,000 colleges and universities in the United States. These higher education institutions range from refrigeration schools to community colleges to elite research-based universities.

ONLINE EDUCATION

Online Education. Colleges and universities continue to invest in and expand their online programs. Arizona public universities have expanded their online presence, and their marketing efforts often reach Yavapai County residents. Many online programs offer multiple program/course start dates. While online programs do not have geographic boundaries, YC's chief competitors are online programs where the offering institution also maintains a physical presence in Arizona.

Rio Salado, a Maricopa Community College, offers 56 online programs and more than 500 online classes. Rio's 2016-17 tuition rate is $86 per credit hour. Many of the Rio Salado online programs are in direct competition with YC programs. Most of Rio Salado's courses offer between 6 and 8 start dates per semester.
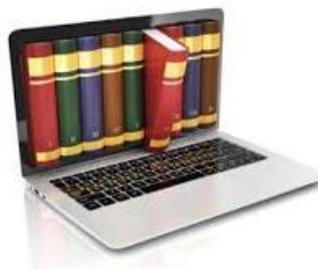
Arizona State University (ASU) offers more than 100 online programs. ASU offers exclusive tuition rates ($490 to $533 per credit hour) for students enrolled in fully online programs with no additional program fees. The University of Arizona and Northern Arizona University also offer online programs and coursework.

STATE UNIVERSITIES

Arizona universities are determinedly marketing statewide and using athletic teams and facilities such as recreation centers to entice recent high school graduates. Arizona universities also offer generous scholarship awards covering up to 100 percent of tuition for high school students with a 3.50 core high school GPA. Academic scholarships are also available for high schools students with core GPAs as low as 3.00.

Traditional Age Student Marketing Advantages

Figure 1. Arizona public universities market athletics and recreation opportunities to recent high school graduates.

PRIVATE FOR-PROFIT INSTITUTIONS

Private for-profit institutions in and outside of Arizona are aggressively marketing for undergraduate residential students. Similar to state universities, the private institutions leverage athletics, and extracurricular facilities to recruit bachelor's degree-seeking students. Competitors are not limited to universities.

Grand Canyon University (GCU) is YC's primary for-profit competitor for recent high school graduates. GCU regularly visits local area high schools and provides campus tours including attendance at an athletic event for high school students.

YC's career and technical education programs are not immune from for-profit competition. YC's Emergency Medical Services and Paramedic programs face competition from Wizard Education, which offers programs in Prescott and at times offers coursework at local fire stations. Wizard Education is not an accredited institution.

Universal Technical Institute (UTI), with campuses in Arizona and throughout the western United States, heavily markets through television ads for programs offered by YC: Automotive, Collision Repair, Diesel, Motorcycle, Computer Numerical Control, and Welding. While UTI classes have significantly higher tuition, they start new courses every 3 weeks. A similar competitor is Wyoming Technical (WyoTech); however, they do not have any campuses in Arizona. Both UTI and WyoTech are accredited by the Accrediting Commission of Career Schools and Colleges (ACCSC), an agency recognized by the U.S. Department of Education.

The YC Lineman Program also faces competition from the Northwest Lineman College that has campuses located in California, Florida, Idaho, and Texas.

Arizona Technical College opened a location in Cottonwood, Arizona; however, it is unclear what programs will be offered at this site and when the institution will begin offering courses. Arizona Tech is not an accredited institution.

MICROCREDENTIALS

The idea of non-traditional skill credentialing is gaining traction. Companies like Coursera and Udacity, primarily provider of MOOCs, are beginning to award "microcredentials." How these microcredentials will be received by employers and industry are still unclear; however, the U.S. Department of Education has a demonstration project exploring ways to give financial aid to nontraditional providers of short-term certificate programs.[1] The Lumina Foundation is also backing efforts to establish standards for education credentialing.

One of the fastest growing microcredential areas is computer programming. The number of coding "boot camp" programs have exploded over the past four years. These boot camps are short-term programs (10 weeks) in computer programming, web programming, and computer science related areas. The boot campus—selective, expensive and intense—are tailored to the skills employees are looking for Early results have shown high placement for boot camp graduates in high wage occupations. While most boot camp programs are private providers, traditional higher education institutions like Northeastern University and Seattle Central Community College have started offering coding boot camps to meet the demand for high-tech job openings.

COMMUNITY EDUCATION--ARTS

In the Prescott area, the non-profit Milagro Arts Center (MAC) provides classes, workshops, and studio facilities in ceramics, photography, digital media, letterpress, and printmaking. The Sedona Arts Center offers similar courses and workshops in the Sedona area. These offerings represent direct competition for students interested in art coursework for personal interest. MAC and Sedona Arts Center course and workshop lengths vary from one day to four weeks. Course fees are competitive with YC tuition. MAC also sells monthly studio access passes for $125 (members) or $155 (non-members).

DEMOGRAPHICS

This section addresses demographic trends occurring at the national and state level, but primarily focuses on Yavapai County. Yavapai County's population is spread out over 8,000 square miles, geographically divided by the Mingus Mountain range. The Prescott area in the west county and Verde Valley in the eastern portion of the county are the two primary population centers. Analyzing these areas is tricky due to a lack of data collected at the sub-county level.[2] To obtain as clear a picture as possible, this analysis used Zip code level data from demographics provider Easy Analytic Software, Inc. (EASI). Zip code groups were divided into three regions: West County (Prescott area), East County (Verde Valley), and Balance of County.

POPULATION

Yavapai County's 2016 population is 224,281. Over the next five years, the County population is forecasted to grow by 3%, slightly below the Arizona and U.S. projections of 4.0% and 3.8% respectively.

National, Arizona, and Yavapai County Population and Projections

	2010	2016	2021	Net Growth Forecast (2016-2021)	% Growth Forecast (2016-2021)
United States	308,745,538	322,648,494	335,026,718	12,378,224	3.8
Arizona	6,392,017	6,868,559	7,142,659	274,100	4.0
Yavapai County	211,033	224,281	230,977	6,696	3.0

Source: Easy Analytics Inc., 2016

Yavapai County Sub Area Population and Projections

	2010	2016	2021	Net Growth Forecast (2016-2021)	% Growth Forecast (2016-2021)
Yavapai County	211,033	224,281	230,977	6,696	3.0
West	133,038	141,542	145,765	4,223	3.0
East	68,338	72,459	74,616	2,157	3.0
Balance	9,657	10,280	10,596	316	3.1

Source: Easy Analytics Inc., 2016

Examining sub-county areas, one finds almost two-thirds of Yavapai County residents live in the west county, while about a third reside in the east county. Five-year population growth forecasts for all sub-county areas are at or near 3%.

Population Distribution by Sub County Area

- West
- East
- Balance
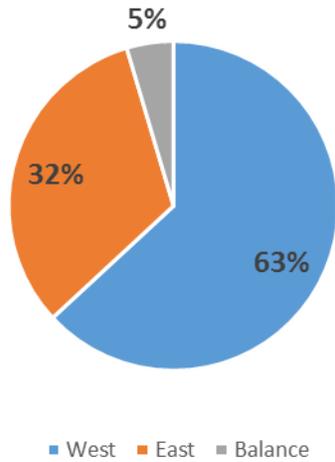
AGE GROUPS

Yavapai County's share of the population age 65 and older is near twice that of the Arizona as a whole. The over 65 population varies little over the three sub-county areas. Nearly half of the county's population is workforce age (25-64). The East and Balance sub-county areas have a lower proportion of traditional-age college students (18-24).

2016 Age Group Distribution
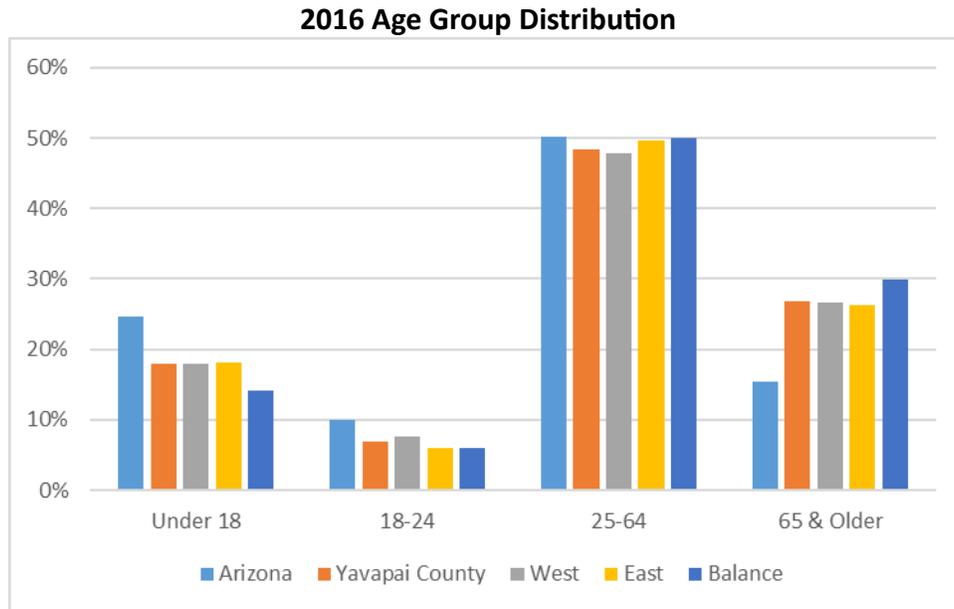
Source: Easy Analytics, Inc., 2016

Another indication of Yavapai County's significantly older population can be seen in the comparisons of median age.

2016 Median Age
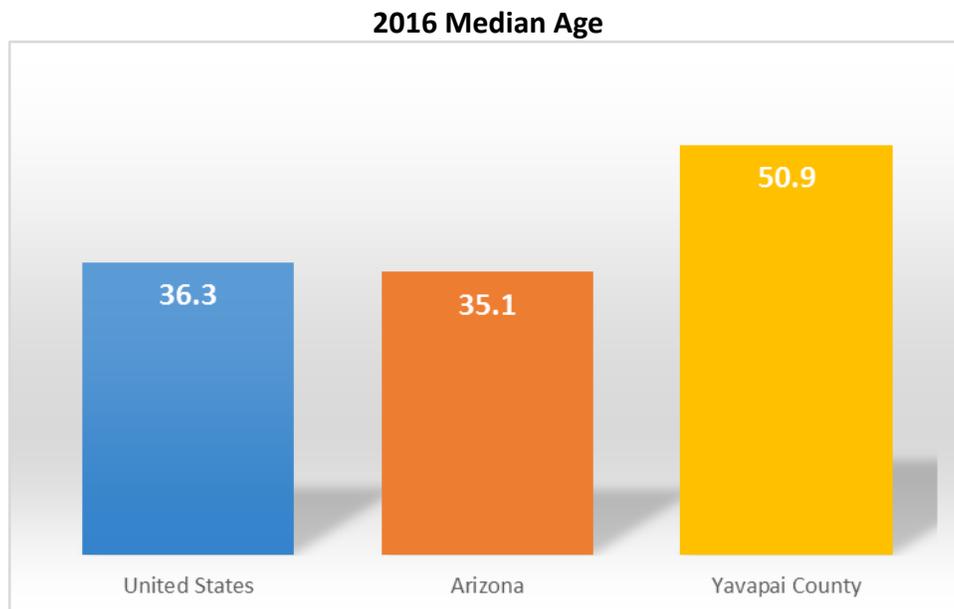
A closer inspection of age groups shows that the largest increases will occur in the 55-64 and 65-74 age groups that combined will add 8,674 new residents. In contrast, the 45-54 age group will shrink by 2,739 along with declines in the under 5 (-507) and 12 to 17 (-341) populations over the next five years. These age trends represent a potentially significant shift for Yavapai College and its curriculum and program offerings.

Yavapai County Population Projections by Age Group

	2016	2021	Net Growth Forecast (2016-2021)	% Growth Forecast (2016-2021)
Population, Median Age	50.9	52.7		3.5
Population Aged 0 to 5 Years	12,413	11,906	-507	-4.1
Population Aged 6 to 11 Years	13,598	13,737	139	1
Population Aged 12 to17 Years	14,039	13,698	-341	-2.4
Population Aged 18 to 24 Years	15,507	15,810	303	2
Population Aged 25 to 34 Years	20,024	21,362	1,338	6.7
Population Aged 35 to 44 Years	20,032	19,478	-554	-2.8
Population Aged 45 to 54 Years	28,129	25,390	-2,739	-9.7
Population Aged 55 to 64 Years	40,246	42,083	1,837	4.6
Population Aged 65 to 74 Years	37,012	43,849	6,837	18.5
Population Aged 75 to 84 Years	16,588	16,455	-133	-0.8
Population Aged 85 Years and Older	6,693	7,209	516	7.7

Source: Easy Analytics Inc., 2016

RACE AND ETHNICITY

The overwhelming majority (80%) of Yavapai County residents are White. Hispanics make up the next largest group at 14%.

Yavapai County Race and Ethnicity

	2016	2021	Net Growth Forecast (2016-2021)	% Growth Forecast (2016-2021)
POPULATION BY RACE				
White Population, Alone	198,647	203,791	5,144	2.6
Black Population, Alone	1,559	1,716	157	10.1
Asian Population, Alone	2,495	2,769	274	11.0
American Indian and Alaska Native Alone	4,282	4,617	335	7.8
Other Race Alone	11,507	12,087	580	5.0
Two or More Races	5,791	5,997	206	3.6
POPULATION BY ETHNICITY				
Hispanic Population	32,140	33,846	1,706	5.3
White Non-Hispanic Population	179,818	183,481	3,663	2.0

Source: Easy Analytics Inc., 2016

Yavapai College Median Age by Race and Ethnicity

	2016	2021
MEDIAN AGE BY RACE		
White Median Age	53.5	55.5
Black Median Age	36.6	39.1
Asian Median Age	44.9	45.6
American Indian and Alaska Native Median Age	34.8	37.8
Other Race Median Age	26.7	27
Two or More Races Median Age	24.5	24.4
MEDIAN AGE BY ETHNICITY		
Hispanic Median Age	28.3	29.9
White Non Hispanic Median Age	55.6	57.4

Source: Easy Analytics Inc., 2016

EDUCATIONAL ATTAINMENT

Yavapai County's over-age-25 bachelor's degree or higher attainment rate of 25% is below the Arizona (27%) and U.S. (29%) levels.

2016 Educational Attainment Population 25 and Older
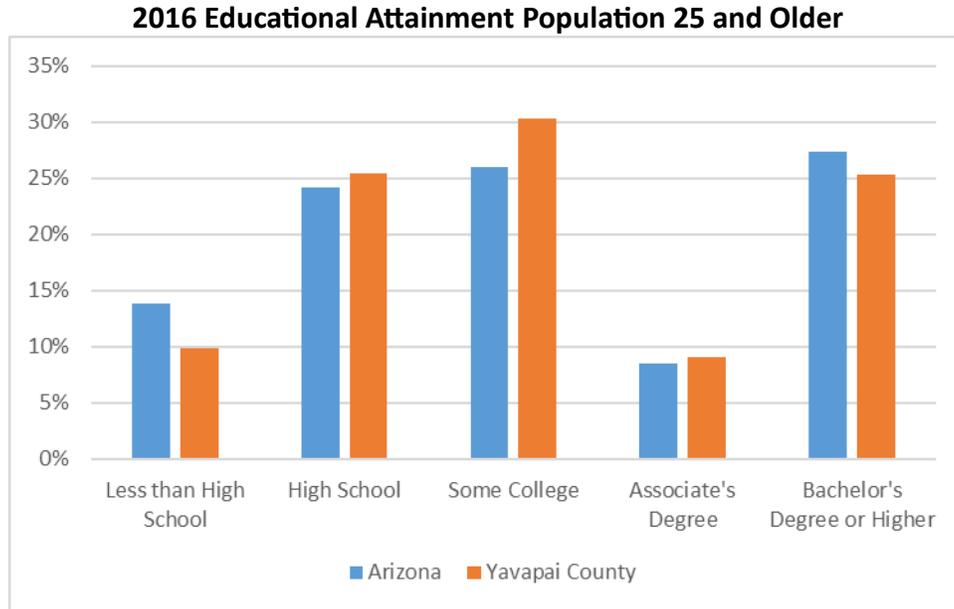
Source: Easy Analytics, Inc., 2016

Given Yavapai County's significantly older population, it is important to examine educational attainment for the workforce population (25-64).[2] Yavapai County's bachelor's degree attainment rate is about 1.6 times lower than the U.S. level and 1.4 times lower than the Arizona level.

Bachelor's Degree of Higher Population 25-64
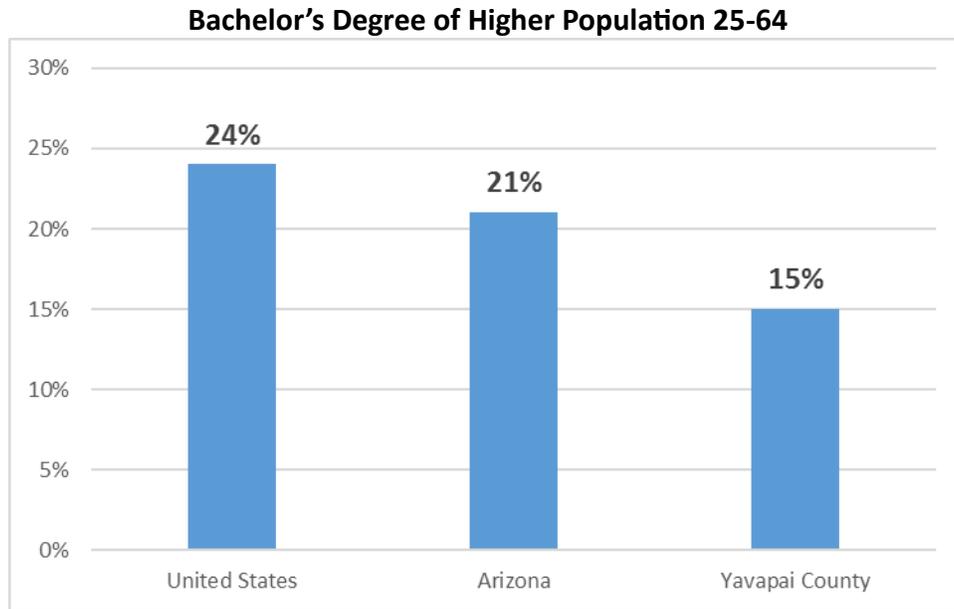
Source: Morrison Institute, The Role of Postsecondary Education in the Future of the Verde Valley Region., 2016

POVERTY

The Yavapai County poverty rate is slightly lower than the state. A look at sub-county areas found no significant differences by region of the county.
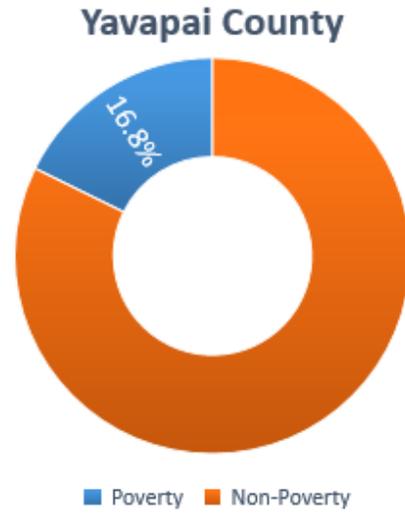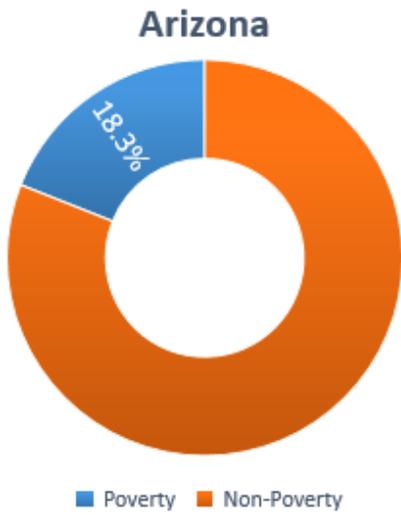
ECONOMIC

This section presents economic trends impacting colleges and universities. In addition to national and state trends, specific information for Yavapai County is included.

ECONOMIC TRENDS

Unemployment. Numerous factors affect community college enrollment. Community college enrollment typically runs counter-cyclical to employment rates. Hence, when employment rates increase, community college enrollments decline as students re-enter the workforce. Yavapai County's unemployment rate of 4.9 is below the Arizona rate and approaching pre-recession levels.

Unemployment Trends

Unemployment	2016	2015	2014	2013	2012	2011
Yavapai County	4.9	5.2	5.9	7.6	8.4	9.4
Arizona	5.5	6.1	6.8	7.6	8.5	9.7
United States	4.7	5.5	6.2	7.5	8.2	9.0

Source: Economic Research, Federal Reserve Bank of Saint Louis

State Disinvestment. Arizona's investment in Yavapai College has been on a downward trend and now represents less than 2% of the operating budget. There is a high probability state funding of Yavapai College will decrease in the near future. The Pima and Maricopa community college districts were defunded by the state for the fiscal year 2016.

High Cost of Living. Yavapai County's overall cost of living is higher than the national and Arizona average. The primary driving factor is housing costs that are 20% higher than the national average and 7% higher than the Arizona average.

Aging Workforce. It is estimated that 40% of the United States workforce will be eligible to retire in the next five years. As baby boomers exit the workforce, their replacements are no better educated, as witnessed by recent data showing Americans age 55 to 59 hold more advanced postsecondary degrees than their 30 to 34 counterparts did.

Continuous Learning. Technological innovation and globalization will require a labor force that is continuously adaptable to updating and learning new job skills.

Wages and Income inequality. Although unemployment has decreased, the purchasing power of average hourly wages in 2016 remains tantamount to 1974. Over the last three decades, the share of wealth owned by capital investment has exponentially grown above and

beyond wealth accumulated through labor wages. In 2000, labor's share of the national economy was 63%. By 2013, it was 57%, representing a shift in wealth from labor wages to capital income of approximately $750 billion annually. This income disparity has severely impacted the ability of rural and working poor to attend and fund their post-secondary education. Adult workers in the region often must maintain full-time employment, making upskilling through local educational resources difficult if not impossible. The persistence of stagnant wages places pressure on post-secondary systems to provide dual opportunities for the traditional student seeking individual enhancement and the non-traditional student seeking flexible and relevant upskilling.

By 2020, 60% of jobs will require some postsecondary training.[3] These projections suggest a need and demand for the services provided by Yavapai College.

42 million jobs will require training beyond high school but less than a bachelor's degree[3]*.* Yavapai College is in a position to supply workers with required training, but the key will be to relocate more of these jobs to Yavapai County. Efforts in business attraction through the Greater Prescott Regional Economic Partnership and the Prescott Valley Economic Development Foundation are aimed at the relocation of middle- to high-wage positions in manufacturing and aerospace to Yavapai County.

Georgetown University's Center on Education and the Workforce recently released a report, entitled "America's Divided Recovery: College Haves and Have Nots," which explores the dilemma facing American workers in 2016, noting that over 95% of jobs established during the recovery period have required some college education. 11.5 million out of 11.6 million jobs created in the past 8 years have been filled by those with at least some post-secondary education.[4]

During the recovery, those jobs requiring a graduate degree have gained 3.8 million jobs, those requiring a Bachelor's gained 4.6 million jobs, and those requiring an Associates gained 3.1 million jobs. Comparatively, jobs requiring a minimum of a high school diploma have gained only 80,000 jobs.[4]

Those workers who possess a Bachelor's degree earn 57% of all wages in the nation today, while employees with some college education make up 65% of the total labor force. 1.6 million jobs in management have been added since the recession, making it the largest occupational growth in the nation, followed closely by healthcare and technical occupations, which added 1.5 million jobs.[4]

Entrepreneurship. Business innovation is an essential element in creating economic opportunities in America. Venture capital investments are rebounding from the great recession. There are more than 5,000 entrepreneurship courses in higher education institutions across the United States. Increasingly, research finds that occupations across industry sectors are becoming more entrepreneurial in character, with a rise in opportunities to be independent contractors or small business owners. This phenomenon has impacted higher education by requiring entrepreneurial content to be an element in most disciplines.
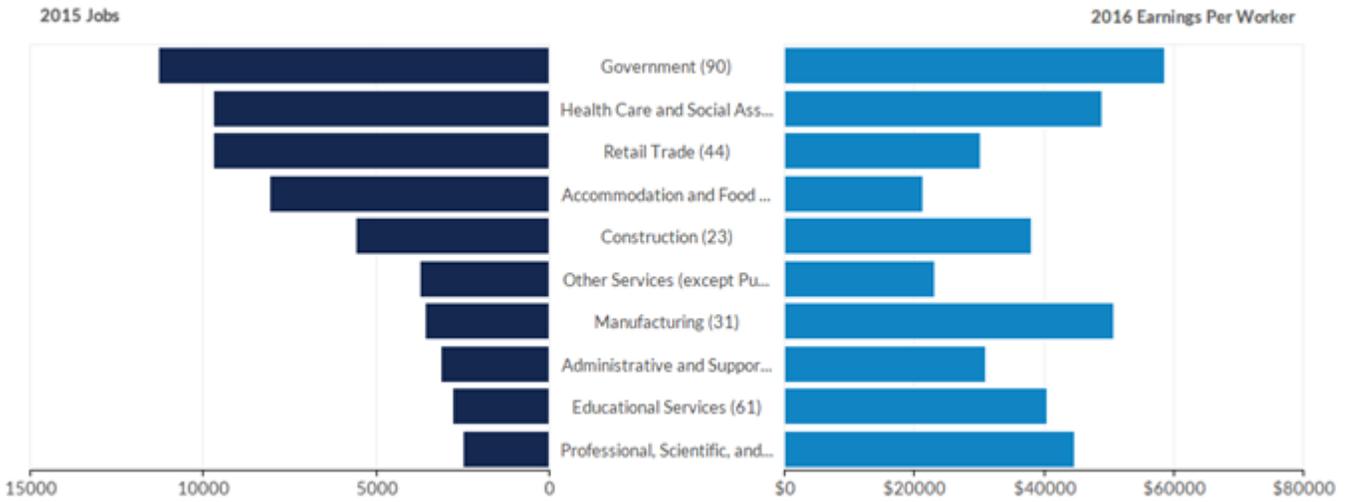
LABOR FORCE

This section addresses labor force trends in Yavapai County and alignment of Yavapai College programs with workforce demands.

INDUSTRY AND WORKFORCE GAP ANALYSIS

Yavapai County has the greatest amount of laborers in government, healthcare, retail, food and accommodation, and manufacturing sectors. Of these top five sectors, three provide some of the highest wages for county employment. Government currently employs 11,205 people with average earnings per worker at $58,556, healthcare and social assistance has 9,562 jobs with earnings of $48,948, and manufacturing employs 3,717 people with average earnings around $50,774. Retail and food and accommodation industry sectors employ approximately 19,044 workers in the county with average earnings at $30,323 and $21,400 respectively. Since the recession, Yavapai County labor statistics show a 21% growth in community and social service occupations, most of which require some college, and 18% growth in healthcare related occupations in the recovery period. The county has yet to recover its management, business and financial, and engineering positions, showing a 4% reduction to date in the first two categories, and a 26% reduction in jobs in engineering.

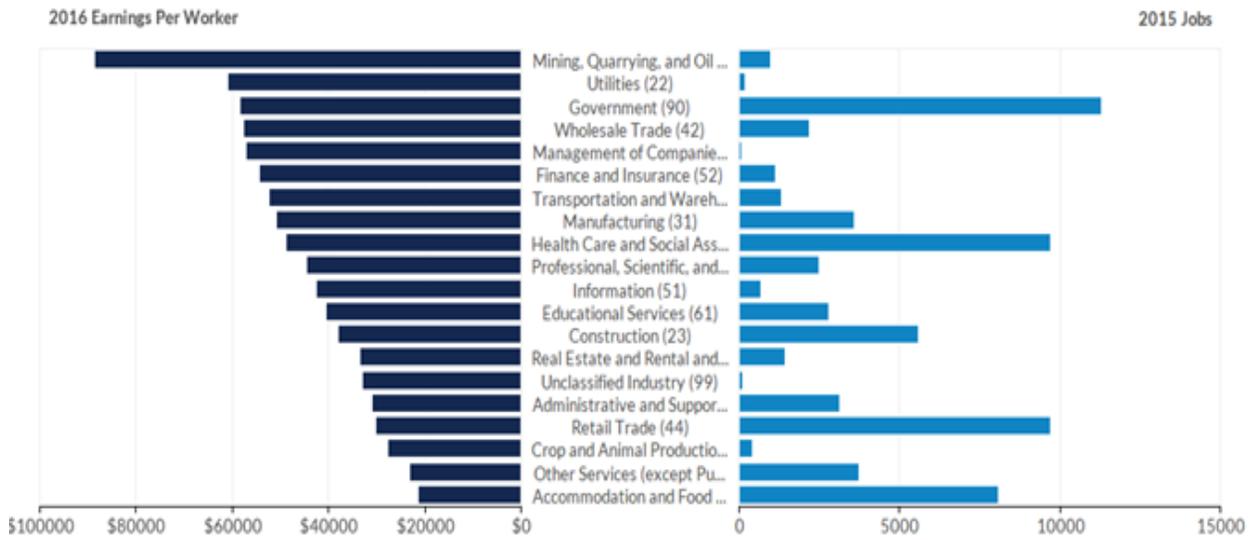Yavapai College currently has academic programming that pertains to four of the top five sectors. Emerging sectors such as wholesale trade, IT, and business and finance require stackable credentials that will articulate into bachelor's programs.   All of the top sectors discussed in this section have shown steady growth over a five-year period, signaling demand for continued and enhanced academic programming.

Largest Industry Sectors in Yavapai County 2016

2015 Jobs

2016 Earnings Per Worker

Government (90)
Health Care and Social Ass...
Retail Trade (44)
Accommodation and Food ...
Construction (23)
Other Services (except Pu...
Manufacturing (31)
Administrative and Suppor...
Educational Services (61)
Professional, Scientific, and...

15000 10000 5000 0

$0 $20000 $40000 $60000 $80000

Source: Arizona Department of Administration Employment and Populations Statistics Division, QCEW, and U.S. BEA and U.S. BLS.

Highest Paying Industries in Yavapai County 2016

2016 Earnings Per Worker

2015 Jobs

Mining, Quarrying, and Oil ...
Utilities (22)
Government (90)
Wholesale Trade (42)
Management of Companie...
Finance and Insurance (52)
Transportation and Wareh...
Manufacturing (31)
Health Care and Social Ass...
Professional, Scientific, and...
Information (51)
Educational Services (61)
Construction (23)
Real Estate and Rental and...
Unclassified Industry (99)
Administrative and Suppor...
Retail Trade (44)
Crop and Animal Productio...
Other Services (except Pu...
Accommodation and Food ...

$100000 $80000 $60000 $40000 $20000 $0

0 5000 10000 15000
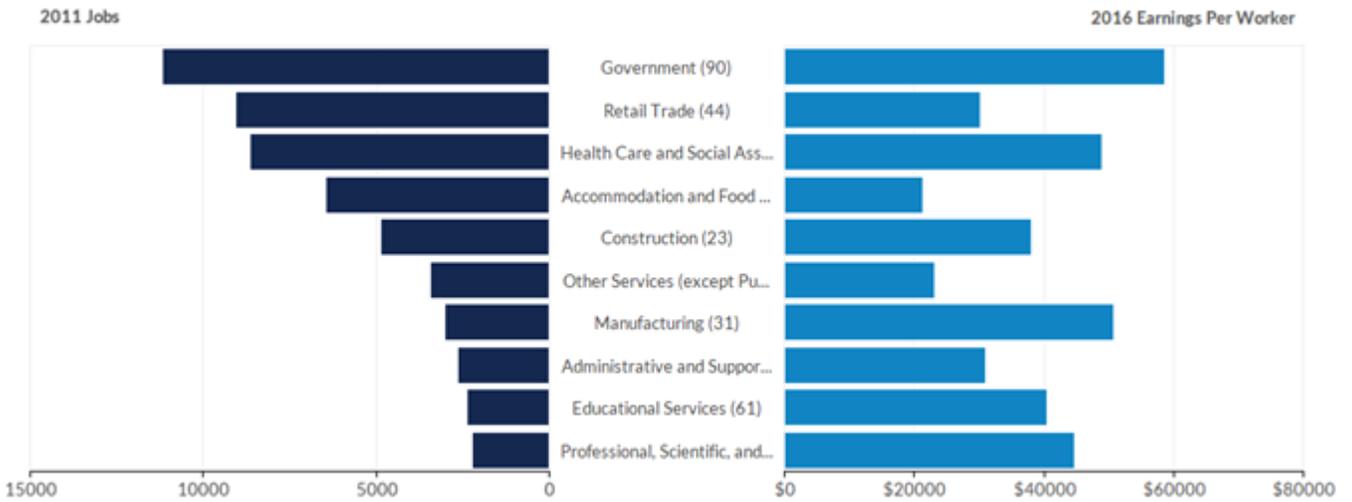
Source: Arizona Department of Administration Employment and Populations Statistics Division, QCEW, and U.S. BEA and U.S. BLS.

Yavapai County Job Growth by Industry Over 5 Years

Source: Arizona Department of Administration Employment and Populations Statistics Division, QCEW, and U.S. BEA and U.S. BLS.

Industry	2011 Jobs	2016 Jobs	Change in Jobs (2011-2016)	% Change	2016 Earnings Per Worker
Government	11,199	11,205	6	0%	$58,556
Retail Trade	9,078	10,261	1,183	13%	$30,323
Health Care and Social Assistance	8,634	9,562	928	11%	$48,948
Accommodation and Food Services	6,446	8,783	2,337	36%	$21,400
Construction	4,879	5,881	1,002	21%	$38,049
Other Services (except Public Administration)	3,456	3,723	266	8%	$23,097
Manufacturing	3,018	3,717	699	23%	$50,774

Industry	2011 Jobs	2016 Jobs	Change in Jobs (2011-2016)	% Change	2016 Earnings Per Worker
Administrative and Support and Waste Management and Remediation Services	2,628	3,533	905	34%	$31,087
Educational Services	2,377	2,749	372	16%	$40,434
Professional, Scientific, and Technical Services	2,241	2,772	531	24%	$44,690
Wholesale Trade	1,935	2,285	350	18%	$57,667
Arts, Entertainment, and Recreation	1,320	1,406	85	6%	$17,247
Real Estate and Rental and Leasing	1,301	1,419	118	9%	$33,380
Transportation and Warehousing	1,201	1,362	161	13%	$52,277
Finance and Insurance	1,194	1,126	-68	-6%	$54,507
Mining, Quarrying, and Oil and Gas Extraction	948	965	18	2%	$88,786
Information	701	687	-14	-2%	$42,649
Crop and Animal Production	454	443	-11	-2%	$27,752
Utilities	100	225	124	124%	$60,923
Management of Companies and Enterprises	50	70	20	39%	$57,297

Source: Arizona Department of Administration Employment and Populations Statistics Division, QCEW, and U.S. BEA and U.S. BLS.
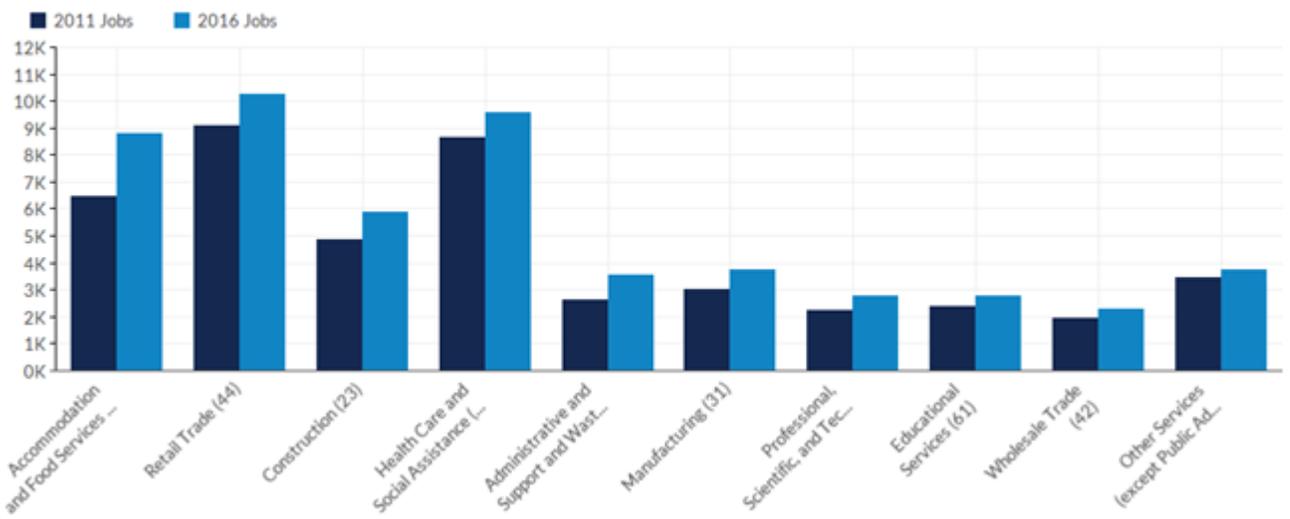
**Fastest Growing Industries in Yavapai County Over 5 Years**

All sectors listed in this table have grown between 350 and 2,300 jobs in the past five years.

Source: Arizona Department of Administration Employment and Populations Statistics Division, QCEW, and U.S. BEA and U.S. BLS.

Cross-referencing industry sector growth with occupational growth over the past five years verifies high demand for academic programs in healthcare, manufacturing, management, business and public administration, marketing and communications, and informational technologies.

Fastest Growing Occupations Over 5 Years
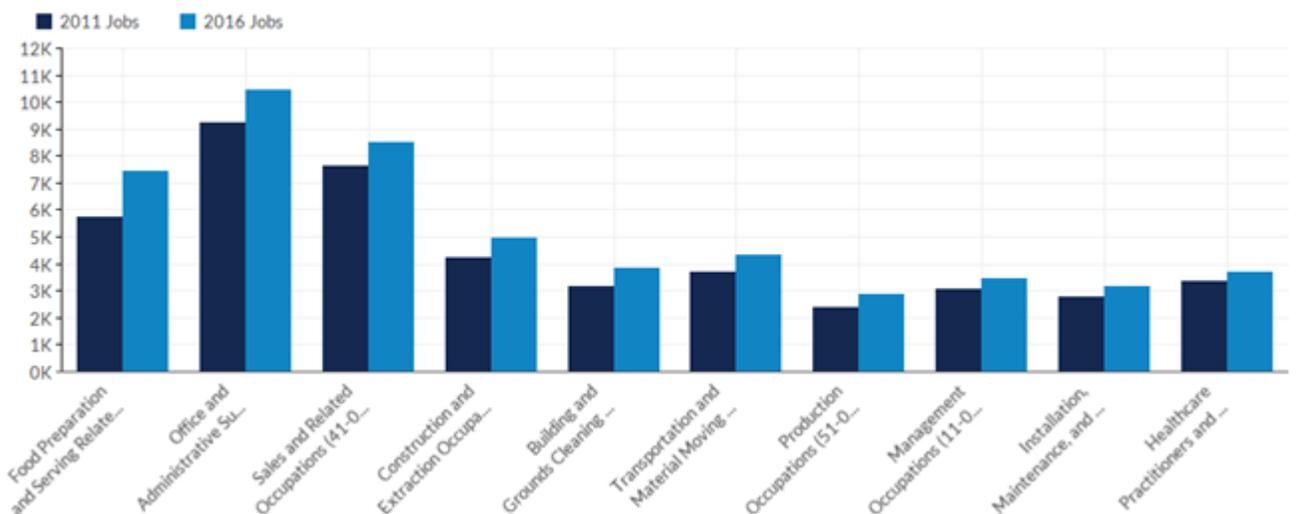
Source: Arizona Department of Administration Employment and Populations Statistics Division, QCEW, and U.S. BEA and U.S. BLS.

Occupation	2011 Jobs	2016 Jobs	Change in Jobs (2011-2016)	% Change	2014 Median Hourly Earnings
Food Preparation and Serving Related Occupations	5,709	7,424	1,715	30%	$9.82
Office and Administrative Support Occupations (including government and hotels)	9,214	10,423	1,209	13%	$14.70
Sales and Related Occupations	7,611	8,515	905	12%	$12.63
Construction and Extraction Occupations	4,236	4,937	701	17%	$17.25
Building and Grounds Cleaning and Maintenance Occupations	3,172	3,824	652	21%	$10.93
Transportation and Material Moving Occupations	3,688	4,327	639	17%	$14.11
Production Occupations	2,398	2,873	475	20%	$15.61
Management Occupations	3,048	3,445	396	13%	$30.10
Installation, Maintenance, and Repair Occupations	2,781	3,157	376	14%	$17.79
Healthcare Practitioners and Technical Occupations	3,353	3,710	357	11%	$38.47
Business and Financial Operations Occupations	1,776	2,083	306	17%	$24.46
Healthcare Support Occupations	1,786	2,088	303	17%	$13.91
Personal Care and Service Occupations	2,936	3,236	300	10%	$10.17

Occupation	2011 Jobs	2016 Jobs	Change in Jobs (2011-2016)	% Change	2014 Median Hourly Earnings
Community and Social Service Occupations	1,224	1,522	297	24%	$19.90
Arts, Design, Entertainment, Sports, and Media Occupations	1,409	1,561	152	11%	$15.44
Computer and Mathematical Occupations	547	662	115	21%	$25.90
Education, Training, and Library Occupations	4,099	4,161	61	1%	$19.19
Military occupations	468	528	60	13%	$18.25
Life, Physical, and Social Science Occupations	454	492	37	8%	$25.21
Architecture and Engineering Occupations	535	571	36	7%	$28.99

Source: Arizona Department of Administration Employment and Populations Statistics Division, QCEW, and U.S. BEA and U.S. BLS.

ACADEMIC PROGRAM CORRELATION

Yavapai College has many current strengths and various opportunities for development of academic programming that corresponds with current industry demand. Correlating stackable credentials with occupational structures will contribute to increased enrollment by occupational cohort and create demand for upskilling through YC academic program options. Ensuring articulation between new and updated YC certificates and associates degrees to the state university system will increase enrollment by offering traditional and non-traditional students more options for mixing and matching their continuing education goals. Management, IT, and marketing professions appear throughout all top sectors. Academic programs in these fields can be leveraged with specialty industry-based stackable credentials and YC job placement services to provide experiential learning in specific industries. Local industry input over the past three years has emphasized "soft skills," including written and verbal communication, along with basic mathematics. The ubiquitous character of English and math skills across industry sectors and occupations requires that reading comprehension, technical writing and mathematics are woven into vocational and technical training. This demand is well-established though studies that have been conducted across the nation.

Current research approaches:
- Faculty in welding, CNC, and electrical instrumentation are performing internships in local companies to identify new skills for curriculum and to better correlate current programming with occupational needs.
- Discipline-specific advisory boards meet annually.
- The REDC conducts industry sector roundtables from which skills for in-demand occupations are derived.
- Registered apprenticeship programs encompass individual inquiry on a company basis to correlate in-demand skills per occupation to current YC academic programming. Registered apprentices are full-time employees with a set educational path through YC.

Industry Sector & Occupations	Strengths	Opportunities
Healthcare and Social Assistance **Occupations:** Healthcare Practitioners Technician Occupations Healthcare Support Occupations (Medical Assistant) Personal Care & Service (Caregiving) Management Occupations	Existing academic programming - Nursing AAS - Medial Assistant - Technician Certs (phlebotomy, radiology, pharmacy) - Certified Nursing Assistant - Caregiver Certificate - Health Information Systems	Correlate existing classes with specialty occupation-based stackable credentials. AAS → BSN
Manufacturing **Occupations**: Production/Assembly Occupations Installation, Maintenance, and Repair Technicians CNC Set-up/Operators CNC Programmer Steel Fabricator (Welding) Design Engineer (CAD systems) Management Occupations	Up-to-date equipment for machining, welding, and industrial machine mechanics Existing program that prepares students for 3rd party industry exams	Expand and correlate stackable credentials to occupations (e.g. CNC certificate → programmer → design engineer) New Manufacturing Operations Certificate

Industry Sector & Occupations	Strengths	Opportunities
Accommodation and Food Service **Occupations:** Front Desk Clerks Lodging Managers Building, Grounds Cleaning, and Maintenance Occupations Bookkeeping, Accounting, and Auditing Clerks Cooks, restaurant Food Preparation Workers Chefs and Head Cooks	Existing culinary cert. Hotel and restaurant management cert. in planning	Stackable credentials that move from front desk to management (perhaps using registered apprenticeship program)
Retail Trade **Occupations**: Sales and Related Occupations Management Occupations Entrepreneurship	Existing management tracks: ▪ AAS ▪ Organizational Management Cert. ▪ Retail Management Cert. Current SBDC workshops: ▪ Social media and marketing ▪ Accounting fundamentals ▪ Financing ▪ Advanced Wordpress ▪ Product and service expansion	Articulation of management program to NAU Service Industry Management bachelors Creating pathway for SBDC workshops to aggregate into a 2-credit hour entrepreneurship class that can float as an elective in any degree or certificate program, students can take 3-hour modules that add up to a 2-credit hour class.

Industry Sector & Occupations	Strengths	Opportunities
Wholesale Trade **Occupations:** Transportation and Material Moving Occupations Management Occupations	No current curriculum	Research industry needs
Government and Administrative and Support **Occupations:** Administrative Assistant Public Administrator (project coordination and management)	Existing professional administration program has curriculum that fits into a public administration or public management certificate	New Public Administration Associates Create Public Management Certificate
Management of Companies, Information, Finance and Insurance **Occupations**: Business Administration Financial Management Accounting (CPA) Computer Support Specialists Network Administrators Software Developers, Applications Software Developers, Software Information Security Analysts	Existing business associates Existing accounting programs: Accounting AAS Accounting Assistant Cert. Basic Tax Cert. Bookkeeping Cert. Advanced Bookkeeping Cert. Existing IT programs: • Computer Networking Technology AAS • Computer Systems and Applications AAS • Computer Application Specialist Cert. • Computer Networking Technician • Cert.	Manufacturing Operations cert. New Finance cert. New Coding associates

Industry Sector & Occupations	Strengths	Opportunities
Marketing, Design, and Communications **Occupations:** Web Designer Arts and Media Occupations Marketing and Communications Coordinator Marketing Manager	Existing classes found built into other disciplines	New Marketing and Communications cert.
Utilities **Occupations:** Electrical Line-worker	Existing Electric Utility Technology Certificate	Expansion into other utility occupations

EDUCATION

This section addresses education trends impacting colleges and universities. In addition to national and state trends, specific information for Yavapai County is included.

K-12 EDUCATION TRENDS

Challenged K-12 System. Ranked by state funding sources, Arizona was 39th in 1992 and had plummeted to 50th in 2013. The $3,018 per pupil provided in 2013 is just 54% of the national average. Since 2003, the National Center for Education Statistics (NCES) has compared each state's standard for proficient performance in reading and mathematics by placing the state standards onto a common scale defined by National Assessment of Educational Progress (NAEP) scores. Based on NAEP scores, Arizona ranks 47th in educational achievement.[5]

Underprepared Students. *ACT* (2014) reports that almost three-quarters of college-bound students do not pass all four college-readiness benchmarks (English, mathematics, reading, and science).[6] As many as two-thirds of students entering community colleges today require some level of remediation (Cohen & Brawer, 2014)[7]. About 6 in 10 degree-seeking students at YC require some level of remediation in English and/or mathematics.

YAVAPAI COUNTY HIGH SCHOOL ENROLLMENT TRENDS

Yavapai County high school enrollments continue to decline. The net decline between 2011 and 2016 was 337 students. The decline represents a compound average annual enrollment drop of nearly 1 percent.

Yavapai County High School Enrollment Trends

Year	9	10	11	12	Total
2010-11	2,168	2,087	2,012	1,819	8,086
2011-12	2,113	2,114	1,934	1,985	8,146
2012-13	2,147	2,032	1,988	1,969	8,136
2013-14	1,960	2,015	1,916	1,947	7,838
2014-15	1,999	1,929	1,912	1,975	7,815
2015-16*	--	--	--	--	7,749

Source: Arizona Department of Education—Arizona October 1 Enrollment Reports; 2015-16 enrollment forecasted by IER.

Selected Yavapai County High School Enrollment Trends

High School	2010-11	2011-12	2012-13	2013-14	2014-15	% Free Lunch
BASIS Prescott	NA	NA	NA	NA	369	*
Bradshaw Mountain High School	1714	1704	1678	1547	1619	58%
Chino Valley High School	786	763	737	740	728	57%
Mayer High School	140	133	156	171	178	76%
Northpoint Expeditionary Learning Academy	151	148	138	166	170	42%
Prescott High School	1771	1658	1607	1585	1537	25%
Tri-City College Prep High School	198	196	199	217	216	*
Yavapai County High School	71	67	36	13	35	43%
Camp Verde High School	395	464	443	428	414	52%
Mingus Union High School	1203	1162	1177	1207	1151	37%
Mingus Union High School Online	NA	NA	19	13	12	*
Sedona Red Rock High School	468	508	490	470	471	32%
Ash Fork High School	86	88	70	77	77	96%
Bagdad Middle / Senior High School	220	212	117	125	223	39%
Seligman High School	45	49	51	54	54	69%

Source: Arizona Department of Education—Arizona October 1 Enrollment Reports; * indicates suppression of data due to small student counts.

COLLEGE AND UNIVERSITY EDUCATION TRENDS

Community Education Enrollment Trends. Nationally, community colleges have experienced five straight years of declining enrollment. Arizona community college enrollment trends have mirrored the national experience. Yavapai College had lagged the national and state downward trends, but that appears to have ended as YC's full-time, student equivalents (FTSE) have declined each of the past two years.

Low Retention Rates. Year-to-year retention rates for community colleges have stagnated at 50%. Yavapai College's first-time, full-time student retention rates have remained at or slightly above the national average over the past five years. Yavapai College's most recent year-to-year retention rate is 53%.

For Yavapai College, when using a retrospective credential-seeking cohort that is determined using course-taking behavior, one finds that year-to-year retention for this population increases to 76%.

Low College Completion Rates. The three-year U.S. public community college graduation rate is 19.5% using the Department of Education's official graduation rate. Yavapai College's latest three-year graduation rate is 27%.

Using the credential-seeking cohort favored by the American Association of Community Colleges (AACC), this YC cohort had an 83% success rate that includes completion, transfer without completion, earning 30 or more credit hours, or still enrolled after six years. The portion of YC students completing a degree in this six-year period was 38%.

Financial Aid (SAP). The federal government has tightened Satisfactory Academic Progress (SAP) requirements. The maximum timeframe that a student may receive federal financial aid may be no more than 150% of the designated program length and includes all institutions attended. To be eligible for financial aid, one must successfully complete at least 67% of their term and cumulative attempted credit, which includes any courses taken at another institution.

TECHNOLOGY

This section addresses technology trends that higher education institutions must balance to ensure the security of information while meeting the ever-evolving changes demanded by students.

TECHNOLOGY TRENDS

Cyberattacks and IT Security. The threat of cyberattacks leading to data breaches and ransom demands is intensifying for colleges and universities. While it is not possible to guarantee complete security of campus IT networks, experts like Mary Meeker stress the importance of organizations regularly updating college breach response plans. More than ever, it is vital for colleges to invest in IT threat intelligence, and staff expertise to mitigate cyberattacks.[8]

Social Media. Hubspot's Social Media Benchmark Report 2015 indicated that 74 percent of adults worldwide are regular users of social media. The three largest social media platforms as determined by active users are Facebook, Instagram, and Twitter. The report emphasizes that followers of organizations' social media efforts do not guarantee customer engagement. To leverage the desired engagement of social media efforts, colleges must present relevant, credible, and unique content to recruits and students.[1]

Mobile Computing. Decreasing costs are enabling anytime/anyplace-computing devices (smart phones and tablets) to become ubiquitous. Students now expect and rely upon mobile devices to access their learning.

Infrastructure. Broadband and technological infrastructure varies widely across Yavapai County due to geographic and population factors. Infrastructure gaps have lessened for public sites like schools and libraries; however, the gap largely remains for households in more rural areas.

Technology and Automation. Rapid advances in technology and automation are occurring in manufacturing, IT, marketing and design, and healthcare sectors. This continuous change in how products and services are produced has required post-secondary education to adjust the pace at which curriculum content is updated, creating additional pressure on a system that is already at capacity in many institutions in the U.S.

SOCIAL AND POLITICAL

This section addresses current social and political trends affecting community colleges today. Higher education institutions have traditionally been on the front lines of helping society integrate social change. Similarly, colleges are increasingly dealing with volatile political issues ranging from guns on campus to sexual assault, while facing increased pressures to demonstrate accountability and decreased support from state government and often local taxpayers. Below is a summarization of some key social and political challenges faced by colleges.

SOCIAL TRENDS

Sexual Assault. Surveys indicate that as many as 25% of women and 5% of men are victims of sexual violence while in college. Colleges must proactively take steps to communicate with students, their families, and the public what efforts are in place to reduce sexual assault.[1]

Political Activism. Recent heightened tensions surrounding race and sexual orientation have colleges and universities wrestling with issues ranging from free speech to inclusivity. Colleges should consider how well existing policies, practices, and facilities and campus spaces meet the needs of an ever-changing campus community. Recent student activism on college campuses has centered on calls for more diversity, cultural competency training, and increased support for marginalized students.[1]

Generation Z. Born roughly between 1990 and 2013, Generation Z students are starting to arrive on college campuses. Colleges need to understand and anticipate how this generation raised on technology in an increasingly diverse and globalized society will impact curriculum and course delivery.[1] Highlights from the book "*Generation Z Goes to College*" indicates:

- Determined, innovative, entrepreneurial

- Concerned about education, employment, and racial equality

- Skeptical about the cost and value of higher education

- In contrast to Millennials, not as motivated by money and career

- Craving predictability and order

- Just 55 percent White—likely the last majority White generation

POLITICAL TRENDS

Guns on Campus. Sparked by recent shootings like the tragedy at Umpqua Community College last year, policy makers debate whether students, staff, and faculty should have the right to be armed on campus.[1] Eight states currently have statutes allowing the carrying of concealed weapons on public college campuses. Another 23 states have legislation that allows the individual colleges to locally determine campus carry policy. In each of the past three legislative sessions, the Arizona legislature has submitted campus carry bills. None of these Arizona measures have passed.

State Disinvestment. Arizona's investment in Yavapai College has been on a downward trend and now represents less than 2% of the operating budget. There is a high probability that state funding of Yavapai College will decrease in the near future. The Pima and Maricopa community college districts were defunded by the state for the fiscal year 2016.

Shift of Education viewed as a private good. Once embraced as a collective public good, public higher education is increasingly seen as a private good designed to financially and socially benefit the individual. A recent Gallup Poll shows that Americans say they value higher education, but they do not strongly support increasing state funding to public institutions. Medicaid, corrections, and K-12 education are consuming a larger share of state budgets and are viewed as priorities over higher education.

REFERENCES

[1]*Trends for Higher Education*, Society for College and University Planning, Spring 2016.
[2]*The Role of Postsecondary Education in the Future of the Verde Valley Region*, Morrison Institute, August 2016.
[3]*Recovery: Job Growth and Education Requirements Through 2020*, Georgetown University Center on Education and the Workforce, June 2013.
[4]*America's Divided Recovery: College Haves and Have-Nots*, Georgetown University Center on Education and the Workforce, June 2016.
[5]National Assessment of Educational Progress (NAEP), National Center for Education Statistics, http://nces.ed.gov/nationsreportcard/
[6]*The Condition of College and Career Readiness: 2014*, American College Testing (ACT), 2014.
[7]*The American Community College*, Cohen, Brawer, and Kisker, 2014.
[8]*Trends for Higher Education*, Society for College and University Planning, Fall 2015.