

2019-2020
OCTOBER 18, 2019



ENVIRONMENTAL SCAN

2019-2020

PRESENTED BY: INSTITUTIONAL EFFECTIVENESS AND RESEARCH

INTRODUCTION

INTRODUCTION

An environmental scan is a vital component of informed strategic planning and decision-making. Much like a SWOT analysis, the environmental scan identifies Internal Strengths and Weaknesses, as well as External Opportunities and Threats. Where a SWOT exercise relies primarily on stakeholder opinions based on their knowledge and experience, an Environmental Scan is a more research-based process relying primarily on internal and external data. The report examines the following trends:

Section I: Society

Section II: Political

Section III: Economy and Workforce

Section IV: Education

Section V: Technology

Section VI: Demographics

SOCIETY

➤ Global Warming

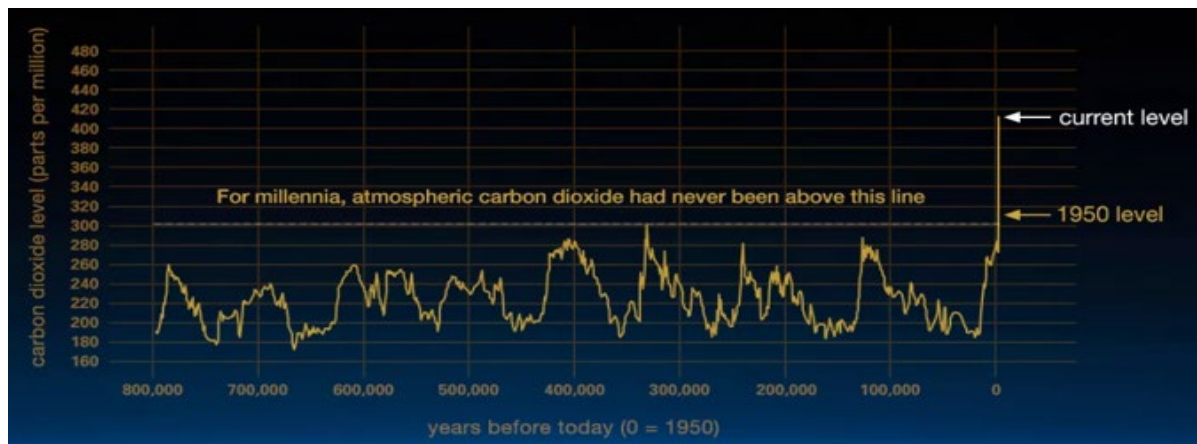
Per NASA, temperatures are increasing, and there is a 95 percent probability that it is the result of human activity, specifically carbon dioxide emissions.

(<https://climate.nasa.gov/evidence/>).



This aligns with the results of six independent studies of scientists who, in total, reviewed the results of 11,944 research papers and determined that over 90% of climate expert researchers publishing in peer reviewed journals believe that global warming is caused by humans.

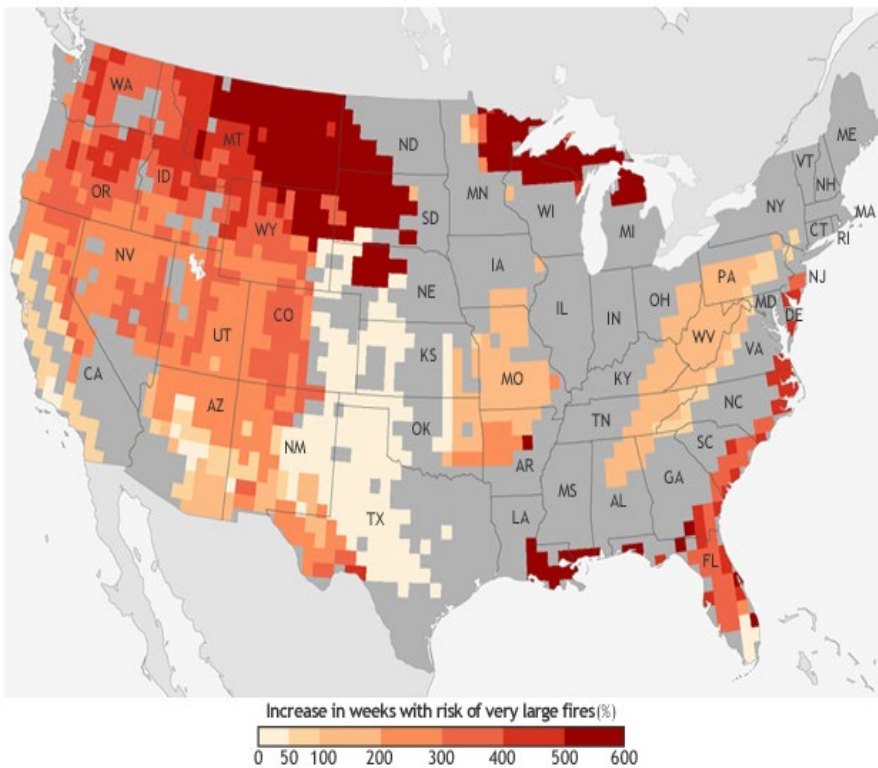
(<https://iopscience.iop.org/article/10.1088/1748-9326/11/4/048002>)



This graph, based on the comparison of atmospheric samples contained in ice cores and more recent direct measurements, provides evidence that atmospheric CO₂ has increased since the Industrial Revolution. (Credit: Luthi, D., et al. 2008; Etheridge, D.M., et al. 2010; Vostok ice core data/J.R. Petit et al.; NOAA Mauna Loa CO₂ record.) [Find out more about ice cores](#) (external site).

As temperatures increase and weather patterns change, there has been an increasing number of weather-related disasters including hurricanes, floods and wildfires. Per NASA, wildfires are becoming more frequent and burn more acreage. They also forecast that “very large fire” season in areas of AZ, including Yavapai County, may double by mid century.

(<https://climate.nasa.gov/blog/2830/six-trends-to-know-about-fire-season-in-the-western-us/>)



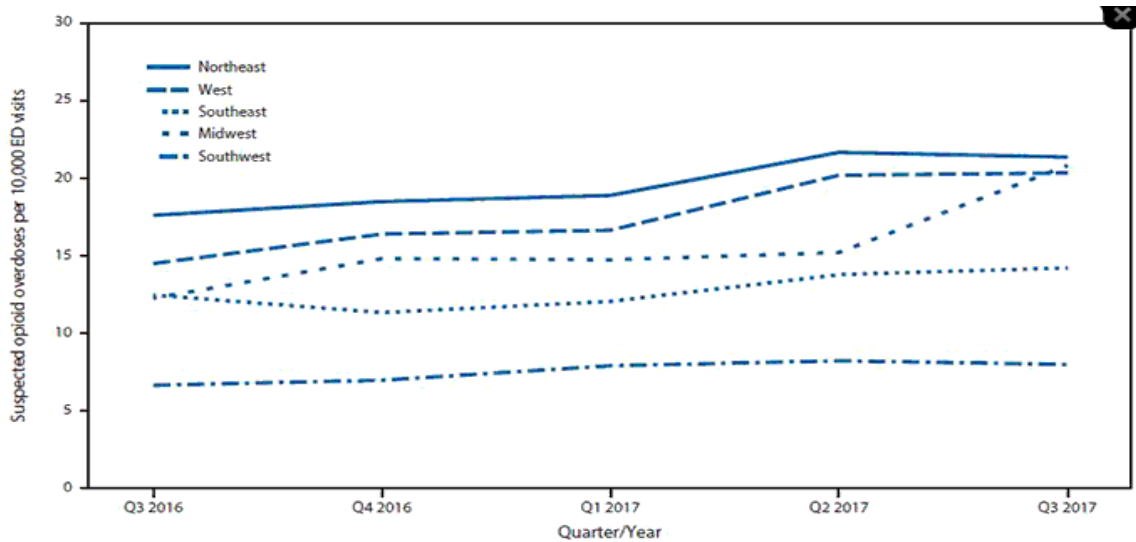
The projected increase in the number of “very large fire” weeks—weeks in which conditions are favorable to the occurrence of very large fires—by mid-century (2041-2070) compared to the recent past (1971-2000). Projections are based on the possible emissions scenario known RCP 8.5, which assumes continued increases in carbon dioxide emissions. NOAA Climate.gov map, based on data from Barbera *et al*, 2015. More detail.

Over 400 hundred colleges and universities (roughly 8% of market) have formed a Climate Leadership Network, committing to a combination of reducing greenhouse gases their school, becoming carbon neutral, and/ or developing community capacity to deal with climate change.

(<https://secondnature.org/climate-action-guidance/network/>)

➤ **Substance Abuse**

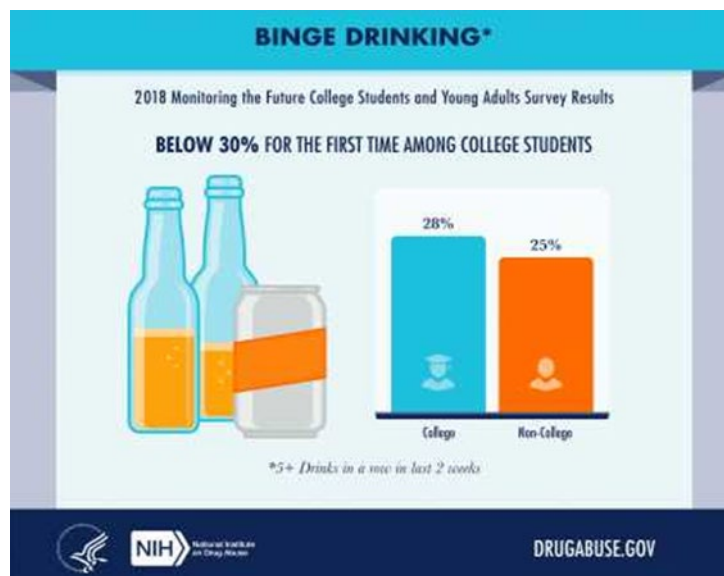
According to the National Institute on Drug Abuse more than 130 people die every day after overdosing on opioids, and is on the rise. In October of 2017, President Trump declared the opioid crisis a public health emergency.



Quarterly rate of suspected opioid overdose, by US region

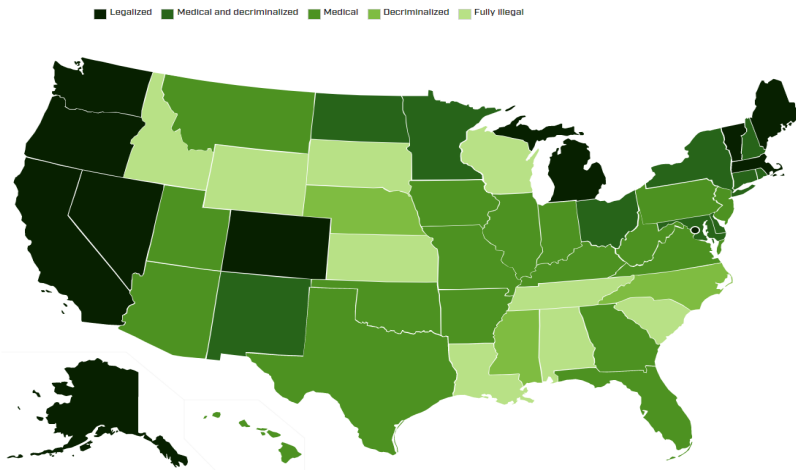
Source: Centers for Disease Control and Prevention.¹⁰

Over the past 5 years, Marijuana use has increased by 7% for college aged adults, and vaping has doubled from 5% to 10% among college students in just one year. Conversely, binge drinking (5 or more drinks in a row in past two weeks) is declining, going below 30% for the first time among college students.



Last Updated: October 2019

Note: State status reflects current laws at time of update, not pending legislation or future dates upon which marijuana becomes available medicinally or recreationally.
 * Enactment is pending until future date.



➤ **Mental Health**



According to the National Alliance of Mental Illness nearly 1 in 5 adults experience mental illness each year.

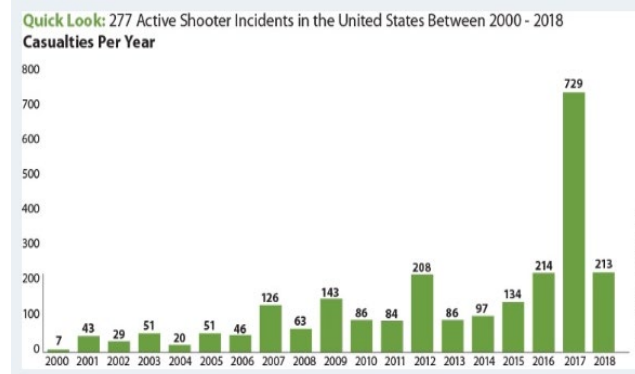
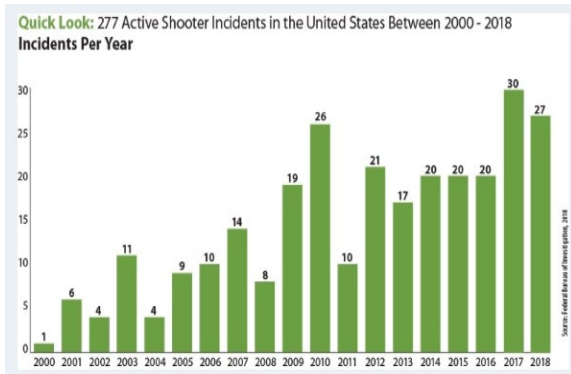
(<https://www.nami.org/learn-more/mental-health-by-the-numbers>)

This number is even higher among college students with roughly 1 in 3 students seeking help with their mental health (<https://www.insidehighered.com/quicktakes/2018/11/06/more-students-are-being-treated-mental-health-issues>) for a variety of issues including addiction, anxiety, depression, and panic attacks. (<https://www.bestcounselingdegrees.net/top-10-mental-health-challenges-facing-college-students-today/>)

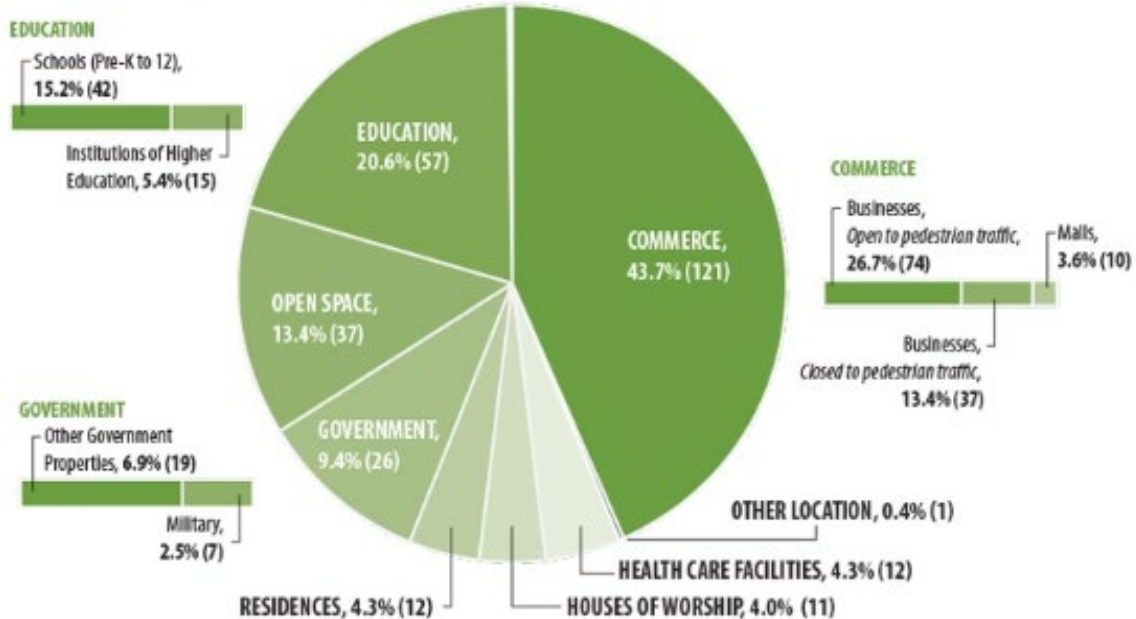
Marijuana has been legalized in 11 states, and is allowed medicinally in all but 9 states. This is despite known health risks associated with usage identified by the Centers for Disease Control and Prevention. (<https://www.cdc.gov/marijuana/nas/index.htm>). Arizona has already approved medicinal marijuana, and though it failed in the past, many believe efforts to legalize recreational use will pass in the near future. (<https://www.azcentrall.com/story/news/politics/arizona/2019/06/29/what-look-arizona-recreational-marijuana-legalization-ballot-measure/1552021001/>)

Per the FBI, active shooter events and casualties have been on the rise over the past two decades. We averaging more than 20 events per year, with 5% of those events happening at a college or university. Active shooters have an average of 3.6 stressors in the year prior to incident (e.g. Mental, financial, job, conflict with friends/ peers, substance abuse, etc.), and display an average of 4 to 5 concerning behaviors before the incident occurs.

(<https://www.fbi.gov/file-repository/pre-attack-behaviors-of-active-shooters-in-us-2000-2013.pdf/view>)



Quick Look: 277 Active Shooter Incidents in the United States Between 2000 - 2018
Location Categories



(<https://www.fbi.gov/about/partnerships/office-of-partner-engagement/active-shooter-incidents-graphics>)

➤ **Fake News**

Ideally, media serve an essential role in a democratic society: to inform the public so they can make thoughtful decisions and serve as a watchdog on governmental actions. Traditional media include radio, newspapers, and television and have been operated primarily by trained journalists.

Cable brought the 24-hour news cycle with its need to fill 24 hours of programming with panels of experts who have informed opinions and agendas, not trained journalists. With the internet came the New Media, with websites, blogs and social media. On the positive side, this has brought a diversity of voices and opinions that had not previously existed; however, it also creates more opportunity to provide unchecked, inaccurate information (“fake news”) to the public, accidentally or otherwise.

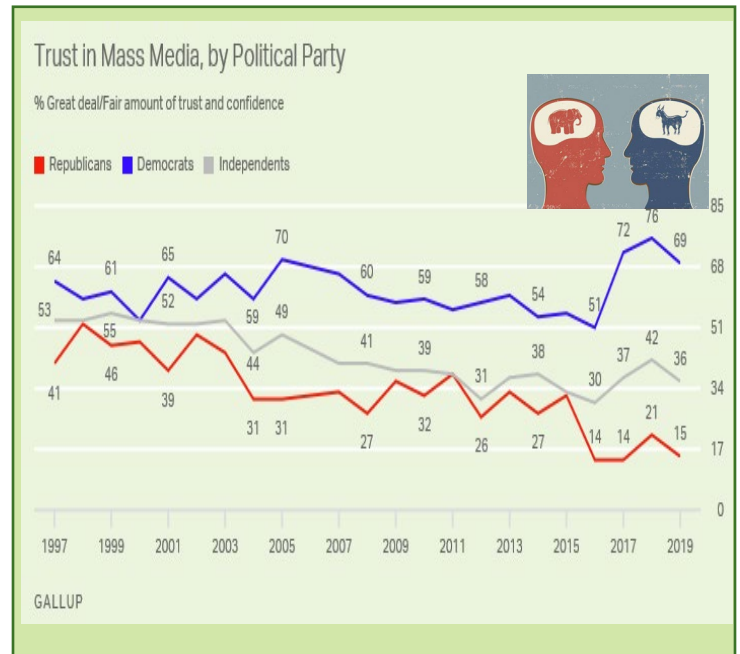
(<https://www.bbvaopenmind.com/en/articles/the-new-media-s-role-in-politics/>)

Per a Gallup poll in 2019, American’s trust and confidence in the mass media “to report the news fully, accurately, and fairly” has dropped to 41%, down from 53% in 1997 and 68% in 1972. This hides the fact that the Mass Media has become a partisan issue with many more Democrats trusting Mass Media the Republicans.

(<https://news.gallup.com/poll/267047/americans-trust-mass-media-edges-down.aspx>). This has led Forbes to declare the current era “The

Age of Bullshit”.

<https://www.forbes.com/sites/marymeehan/2018/12/19/2019s-top-trends-to-watch-the-most-important-trends-for-businesses-and-consumers-for-2019/#7166dd7a5045>



Questions for Consideration:

Global Warming

1. Should the College try to reduce its carbon footprint? Should it try to integrate environmental impact awareness into its curriculum?
2. Considering the likely increase in low carbon technologies such as solar, does the college offer the right programs to prepare some students to participate in this future workforce?
3. Should the campuses and centers be redesigned over time to become hardened against wildfire?

Substance abuse and Mental Health

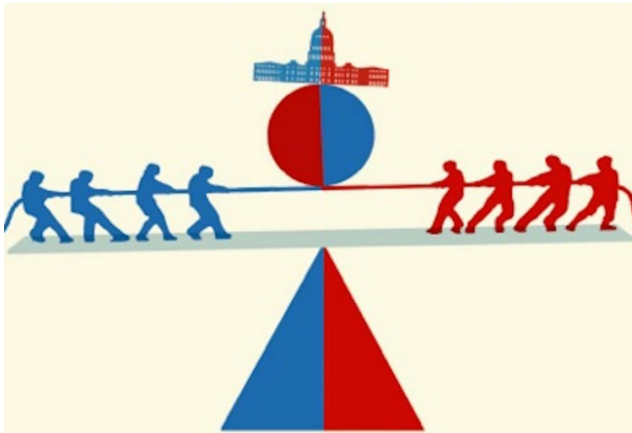
4. Has the college allocated enough resources to adequately support students with mental health and substance abuse issues?
5. Should the college create programming to support a career in substance abuse counseling?
6. If marijuana is legalized, will the college consider specialized programming to support that industry or are current programs sufficient?
7. Has the college allocated enough resources (cameras, card access, police, training, etc) to help prevent and react to emergencies, especially wildfire and active shooter incidents?

Fake News

8. Do student learning outcomes adequately address critical thinking? Digital literacy? Self-awareness to help students become aware of their inherent biases?

POLITICAL

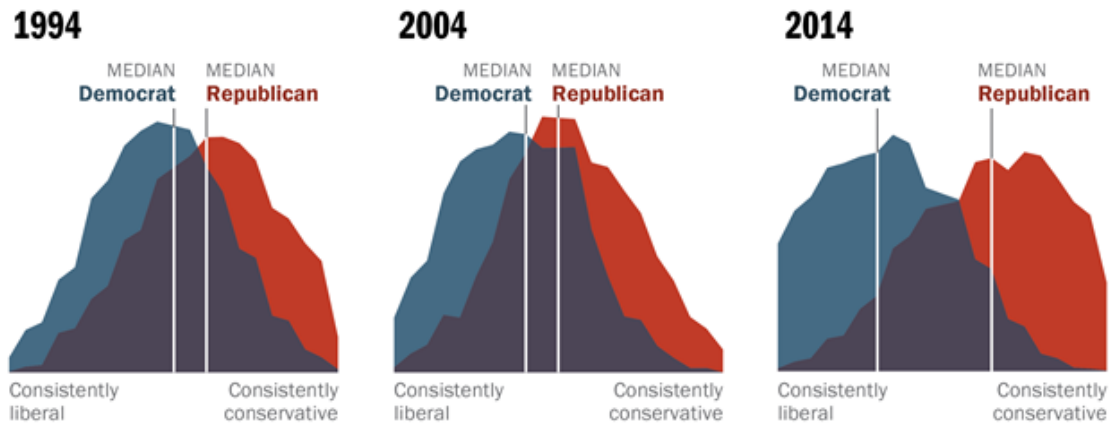
➤ Federal



At the federal level, we are gridlocked. With a Republican President and Senate, and a Democrat House, there is not much chance of meaningful change until the 2020 election. The perennial question is will Congress update the Higher Education Reauthorization Act? At this point, the answer seems to be not yet. As Pew Research pointed out, our political parties have become more polarized, which creates a situation where people are less willing to reach across the aisle to create compromises which move us forward.

Democrats and Republicans More Ideologically Divided than in the Past

Distribution of Democrats and Republicans on a 10-item scale of political values



Source: 2014 Political Polarization in the American Public

Notes: Ideological consistency based on a scale of 10 political values questions (see Appendix A). The blue area in this chart represents the ideological distribution of Democrats; the red area of Republicans. The overlap of these two distributions is shaded purple. Republicans include Republican-leaning independents; Democrats include Democratic-leaning independents (see Appendix B).

PEW RESEARCH CENTER

There are bi-partisan concerns about the rising prices of (4 year) colleges. To help, there have been increases in Pell Grants which provide financial assistance to those students with the most need. Pell Grants currently stand at \$6195 per year, which is enough to cover tuition and books at YC while still leaving some money for other expenses (transportation, food, housing, etc.). However, Secretary of

Education Betsy DeVos has announced several updates to the collegescorecard.ed.gov tool which seeks to make colleges' costs and student success performance more transparent, in efforts to hold colleges more accountable.

Democrats have raised education issues such as student loan forgiveness and federal Promise scholarship programs to make the first 2 years of college free, but have not identified funding.

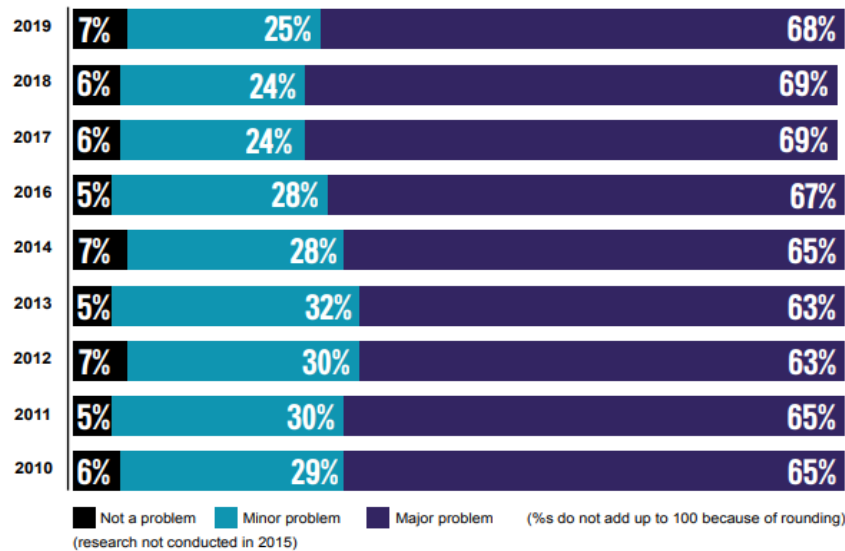
➤ **Civility**

This lack of cooperation and civility is increasingly felt throughout society, not just in Congress. In their annual Civility in America survey, Weber Shandwick found that Americans are concerned about the state of civility in our nation.

People fear several negative consequences of incivility, including bullying and violence. They cite several contributing causes of incivility including social media, politics and the news media. But teaching civility in schools and colleges was viewed as one of the top 3 potential solutions. (<https://www.webershandwick.com/wpcontent/uploads/2019/06/CivilityInAmerica2019SolutionsforTomorrow.pdf>)

PROBLEM WITH CIVILITY IN AMERICA TODAY

(among total Americans)



Civility in America 2019: Solutions for Tomorrow

➤ **State**

In AZ, the Republicans control all three branches: Governor, Senate, and House. Despite K-12 Education being the largest spending category in the state budget, our k-12 system is still one of the lowest funded per student in the nation. Likewise, state funding for AZ community colleges has almost disappeared, which places the burden on local property tax payers and on students.

Arizona's investment in community college has been on a downward trend for decades and now represents less than 2% of the YC operating budget. "A decade since the Great Recession hit, state spending on public colleges and universities remains well below historical levels," the Center on Budget and Policy Priorities (CBBP) reports. (<https://www.scup.org/resource/trends-for-higher-education-implications-from-the-internal-environment-spring-2019/>) The prospect of state funding for community colleges returning to pre-recession levels remains unimaginable. For the fifth consecutive year, Pima and Maricopa, Arizona's largest community college districts, continue to receive no state support. A lasting effect is that students and their families will continue to shoulder a bigger burden when it comes to paying for college.



If our budgets reflect our values, it is clear that our legislators do not value the work community colleges do: Community colleges service roughly ½ of the undergraduate students in AZ, while serving a disproportionately high amount of minority, lower socio-economic status, and less academically prepared students. In addition to serving transfer students, community colleges provide a variety of career technical education programs which provide people the needed knowledge and skills to be successful in the workforce. We do this at a price point that is roughly ¼ the list price of the state-supported public universities.

In 1980, Arizonans passed a Constitutional Amendment, limiting the amount that entities receiving property taxes can spend. For community colleges, we can spend the same amount per student that we did in 1980, adjusted for inflation (using the GDP deflator). For the first time in YC history, the **Expenditure Limit** looms on our 5 year horizon. To avoid hitting the limit, YC must grow enrollments and/ or cut costs.

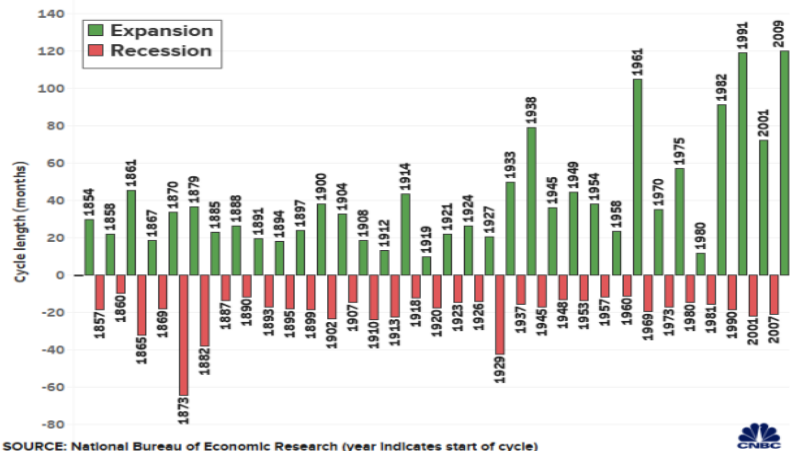
Questions for Consideration:

9. With increasing calls for accountability at the Federal and State levels, what actions is YC taking to increase retention and completion?
10. With the expenditure limit relatively close, what can YC do to increase enrollments and/ or control costs? Rather than incremental changes, are there strategic changes in programs or services we should consider?
11. How can YC further demonstrate the value we provide to the state economy to enhance state support either via financial appropriations or Expenditure Limit formula changes?
12. Is YC allocating enough attention and resources to teaching civility both in and out of class?

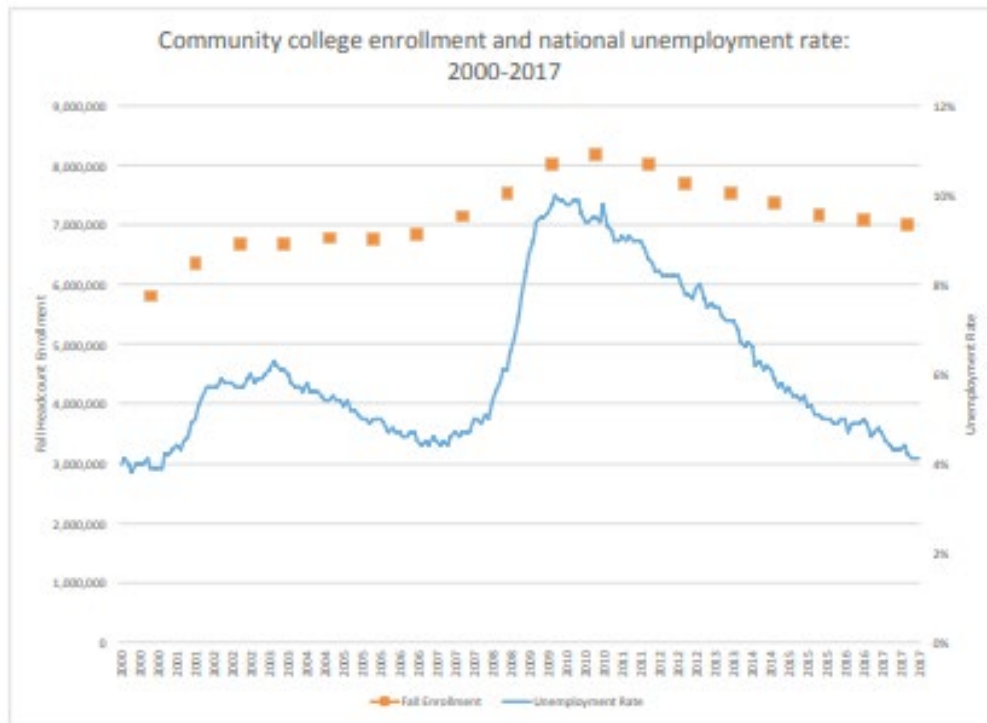
ECONOMY AND WORKFORCE

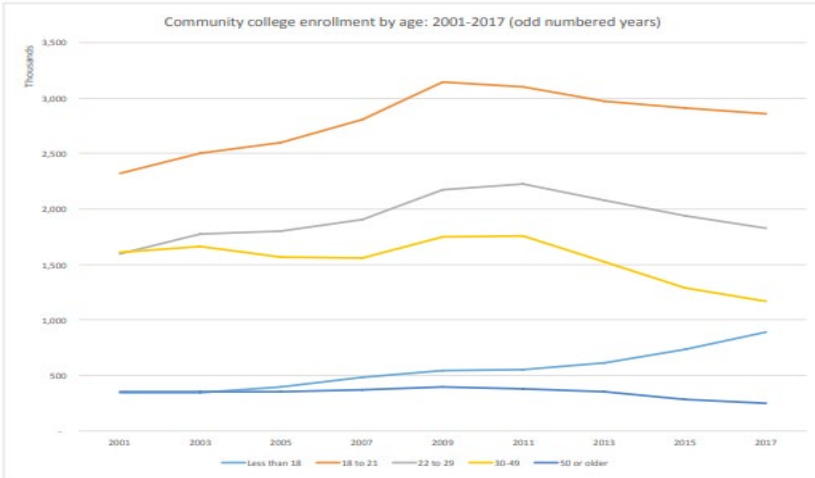
This Summer, the economy broke the record for the longest period of expansion. Unemployment has declined from 10% to under 4%, and the DOW rose from 6500 to over 26,000. Inflation is low, consumer confidence is high. This is great news for Americans.

The longest U.S. expansion in history



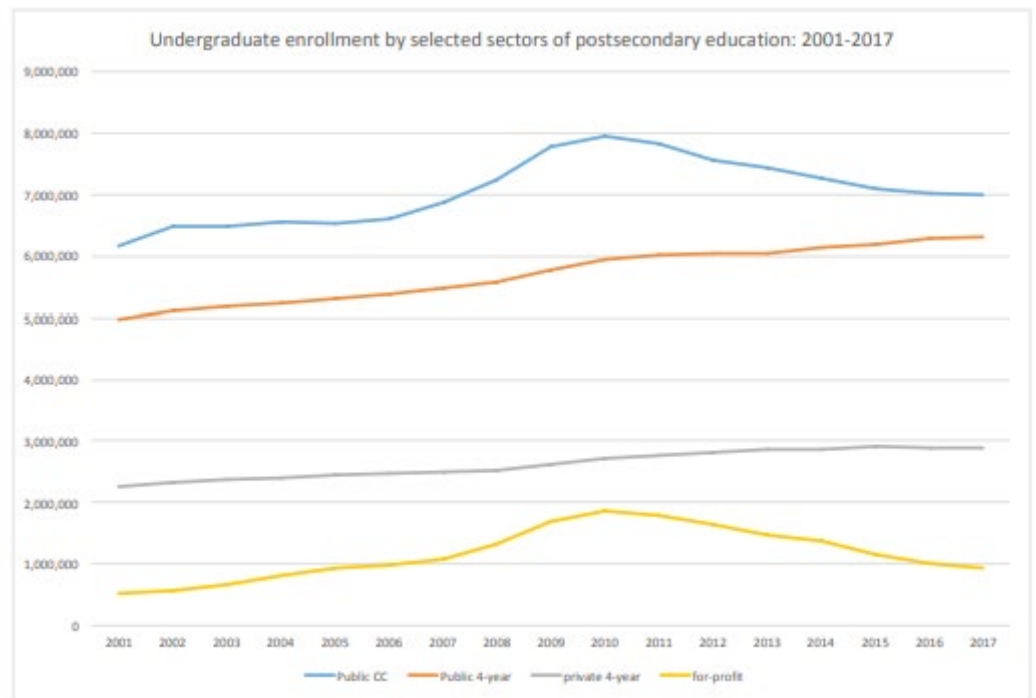
But community colleges tend to be countercyclical. Adults come to community colleges to upskill after lose their jobs, and leave community colleges as job demand increases.





Unlike four year schools, community college enrollments declined 14% from their 2010 peak to 2017. (<https://www.aacc.nche.edu/wp-content/uploads/2019/08/Crisis-in-Enrollment-2019.pdf>) YC only declined 11% in that same timeframe. The following graph shows enrollment trends by age group, which further demonstrates the drop in working age students. As we have shared with the board, YC has similar trends.

This graph contrasts enrollment trends within different higher education segments. Please note that community college enrollment patterns are different than four year schools.

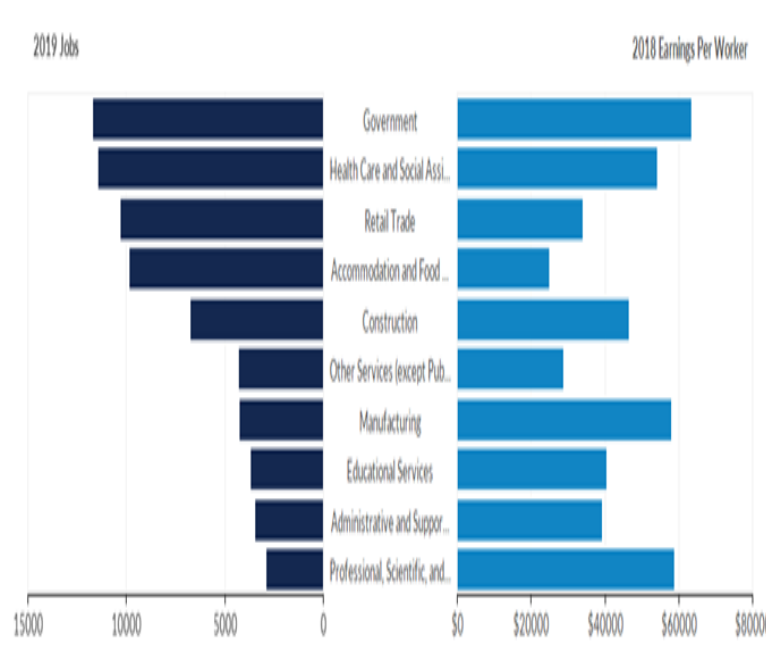


Back to the economy. There are some signs of weakness. The fed has kept interest rates near historic lows. There is not much stimulus they can create should the economy soften. Federal Spending is high, already creating \$1T in additional debt per year. Again, how much more stimulus can they create? Consumer confidence, while high, has begun to soften. And the interest yield curve has inverted which usually predicts a recession within 12-24 months. (<https://www.newsweek.com/us-economic-recovery-now-longest-ever-so-why-are-experts-so-nervous-1446618>)

INDUSTRY ANALYSIS

Yavapai County has the greatest amount of laborers in government, healthcare, retail, and food and accommodation. Of these top five sectors, three provide some of the highest wages for county employment. Government currently employ more than 11,694 people with average earnings per worker of \$63,471, healthcare and social assistance has 11,464 jobs with earnings of \$54,166, and manufacturing employs 4,261 people with average earnings around \$58,046. Retail, food, and accommodation industry sectors employ approximately 20,191 workers in the county with average earnings at \$34,078 and \$28,741 respectively. Since the recession, Yavapai County labor statistics show a 32% growth in manufacturing occupations, most of which require some college and 30% growth in healthcare and social assistance related occupations in the recovery period.

Largest Industry Sectors in Yavapai County 2019



Source: EMSI, Quarter 3, 2019

Cross-referencing industry sector growth with occupational growth verifies high demand for academic programs in healthcare, management, business and public administration.

Top 30 Occupations by 2019 Jobs in Yavapai County

Description	2019 Jobs	2024 Jobs	2019 - 2024 % Change	Annual Openings	Median Hourly Earnings
Retail Salespersons	2,866	3,017	5%	449	\$11.88
Combined Food Preparation and Serving Workers, Including Fast Food	2,686	3,070	14%	594	\$11.59
Cashiers	1,859	1,978	6%	380	\$11.45
Waiters and Waitresses	1,778	1,966	11%	386	\$10.69
Office Clerks, General	1,695	1,815	7%	227	\$15.40
Registered Nurses	1,512	1,678	11%	112	\$36.53
Secretaries and Administrative Assistants, Except Legal, Medical, and Executive	1,491	1,553	4%	174	\$14.59
General and Operations Managers	1,324	1,444	9%	134	\$30.80
Cooks, Restaurant	1,255	1,394	11%	211	\$12.10
Maids and Housekeeping Cleaners	1,241	1,344	8%	188	\$11.66
Personal Care Aides	1,177	1,439	22%	233	\$11.62
Janitors and Cleaners, Except Maids and Housekeeping Cleaners	1,079	1,199	11%	169	\$13.42
Landscaping and Grounds keeping Workers	1,063	1,189	12%	157	\$13.15
First-Line Supervisors of Retail Sales Workers	1,058	1,105	4%	123	\$17.71
Stock Clerks and Order Fillers	1,051	1,115	6%	149	\$12.27
Construction Laborers	1,032	1,105	7%	122	\$15.55
Customer Service Representatives	971	1,057	9%	145	\$14.32
Heavy and Tractor-Trailer Truck Drivers	826	931	13%	114	\$17.82
Teacher Assistants	787	801	2%	83	\$11.58
Laborers and Freight, Stock, and Material Movers, Hand	779	834	7%	120	\$13.15
Receptionists and Information Clerks	768	830	8%	115	\$13.42
First-Line Supervisors of Office and Administrative Support Workers	753	808	7%	86	\$20.56
Nursing Assistants	751	852	13%	108	\$14.92
Maintenance and Repair Workers, General	746	838	12%	94	\$15.14
Carpenters	720	750	4%	75	\$19.47

Description	2019 Jobs	2024 Jobs	2019 - 2024 % Change	Annual Openings	Median Hourly Earnings
Automotive Service Technicians and Mechanics	718	756	5%	76	\$20.13
First-Line Supervisors of Food Preparation and Serving Workers	708	783	11%	119	\$14.68
Bookkeeping, Accounting, and Auditing Clerks	689	736	7%	88	\$16.60
Postsecondary Teachers	676	780	15%	75	\$37.20
Home Health Aides	593	673	13%	86	\$11.57
Elementary School Teachers, Except Special Education	562	568	1%	41	\$20.33




As you can see from the table, most of the top 30 occupations pay less than \$20 per hour. To strengthen our economy and raise the county’s median wage, we must focus on creating and training for jobs that pay more than \$20 per hour, which is approximately the living wage in Yavapai County. (<https://livingwage.mit.edu/counties/04025>)



Looking at the county workforce needs, the following 18 occupations represent 50% of the workforce, require some college level training, and pay \$40,000 or more.

High Demand County Jobs

Pays \$40k+, Requires College

- **Business:** Accountant, GM, Manager
- **Health:** MD, RN, LPN, Lab Tech, Manager
- **Public Service:** Ed. Administrator, Ed. Counselor, Teacher
- **Tech:** User Specialist
- **Trades:** Auto. Tech., Construction Supervisor, HVAC

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Source: US Bureau of Labor Statistics Slide 10

High Demand Arizona Jobs Pays \$40k+, Requires College



- **Business:** Accountant, *Admin. Mgr.*, Business Spec., Financial Mgr., Financial Services Sales, GM, HR Spec., Mgmt. Analyst, Mgr., Market Analyst, *Sales Mgr.*, *Training & Dev.*
- **Health:** RN, LPN, *Manager*
- **Public Service:** Lawyer, Teacher
- **Tech:** Software Developer, Systems Analyst, User Specialist
- **Trades:** Construction Supervisor, *HVAC*, Truck Driver




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Source: US Bureau of Labor Statistics Slide 9

Looking at the state workforce needs, the following 28 occupations represent 50% of the workforce, require some college level training, and pay \$40,000 or more.

High Demand National Jobs Pays \$40k+, Requires College



- **Business:** Accountant, Business Spec., Fin. Mgr., Financial Services Sales, GM, HR Spec., Mgmt. Analyst, Manager, Market Analyst
- **Health:** MD, RN, LPN
- **Public Service:** Lawyer, Teacher
- **Tech:** Software Developer, Systems Analyst, User Spec.
- **Trades:** Construction Supervisor, Truck Driver



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Source: EMSI Slide 8

Looking at the national workforce needs, the following 23 occupations represent 50% of the workforce, require some college level training, and pay \$40,000 or more.

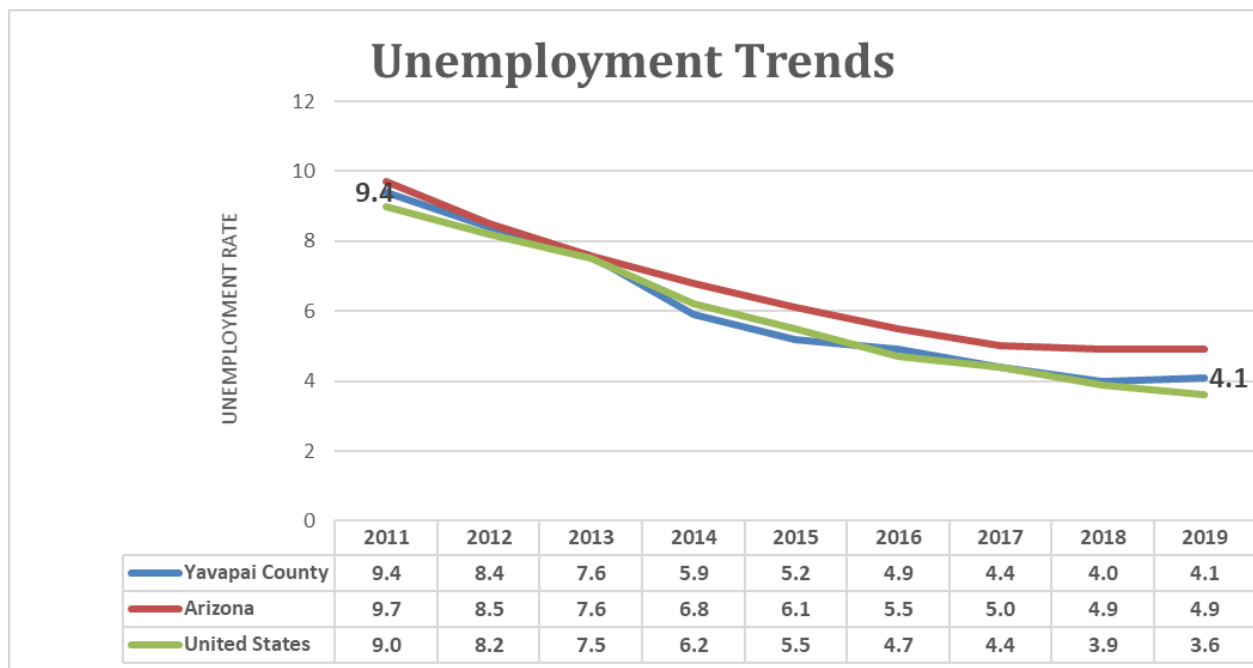
Commuting Patterns and Labor Sheds

Exporting Labor. More than one in three Yavapai County residents travels more than 50 miles for employment with the vast majority driving south to the greater Phoenix area.

Destination of Commuters	Count	Share
Prescott	18,102	25.8%
Phoenix	10,773	15.3%
Prescott Valley	6,369	9.1%
Cottonwood	3,368	4.8%
Sedona	3,282	4.7%
Flagstaff	2,696	3.8%
Camp Verde	2,222	3.2%
Scottsdale	2,110	3.0%

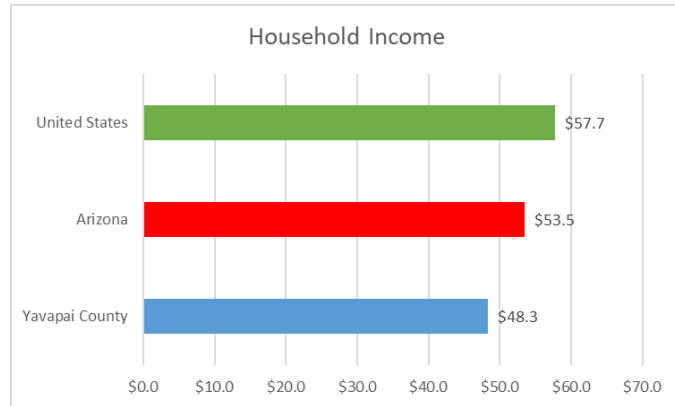
United States Census Bureau, Longitudinal Origin-Destination Employment Statistics

Yavapai County Unemployment. Yavapai County’s unemployment rate of 4.1 is below the Arizona rate and approaching pre-recession levels. Businesses have approached the college looking for graduates. Some businesses are recruiting out of county



Source: Economic Research, Federal Reserve Bank of Saint Louis; April, seasonally adjusted

Low Household Income. Yavapai County’s median household income of \$48.3K is \$5.2K below the Arizona median household income and \$9.4K below the national median. The combination of below-average income and high cost of living, especially housing, presents significant headwinds negatively affecting student and labor force recruitment.



Source: EMSI, Quarter 3, 2019

High Cost of Living. Yavapai County’s overall cost of living is higher than the national and Arizona average. The Phoenix area is the largest out migration destination for people moving from Yavapai County. The Phoenix area is almost 11 percent less expensive than the Prescott-Prescott Valley region. The primary driving factor is housing costs.

Category (Percent Weight)	Prescott-Prescott Valley AZ	Phoenix AZ	National Average
Grocery (13.40%)	95.6	98.4	100
Housing (29.34%)	122	97.4	100
Utilities (8.94%)	96.6	110.8	100
Transportation (9.22%)	109.8	105.3	100
Health (4.26%)	94.4	92.6	100
Miscellaneous (34.84%)	105.2	95.2	100
Composite (100%)	108	98.5	100

Source: Council for Community and Economic Research, Quarter 2, 2019

Per a recent Harvard study, tight housing supply is “driving up home prices and rents, especially for average earners living in high-cost markets.” <https://www.housingwire.com/articles/49458-harvard-theres-a-housing-shortage-and-its-eroding-affordability/> This is primarily due to a decade of construction below historical levels.

Per Zillow, the median Yavapai County home value is \$307,000—well above the national average of \$231,000.



Questions for Consideration:

13. Are there steps YC could take to become less negatively correlated with economic recovery?
14. Does YC have the right program mix to serve local, state and national job market?
15. Does YC systematically review programs to ensure correct skills and knowledge are incorporated into the career technical programs? Are these programs structured in a way that supports working adults and businesses?
16. Almost ½ of our workforce is leaving our county to go to work. How can we determine what skills/ knowledge are commuting to Phoenix and Flagstaff so that we can work to relocate those businesses to Yavapai County?
17. How can YC help lower costs of housing in our county?

EDUCATION

K-12 EDUCATION TRENDS

There is a national teacher shortage, with many slots being filled by uncredentialed people out of necessity. Part of this has to do with financial pressures. A lack of resources creates high student-teacher ratios (which causes stressful work environment) and inadequate pay.

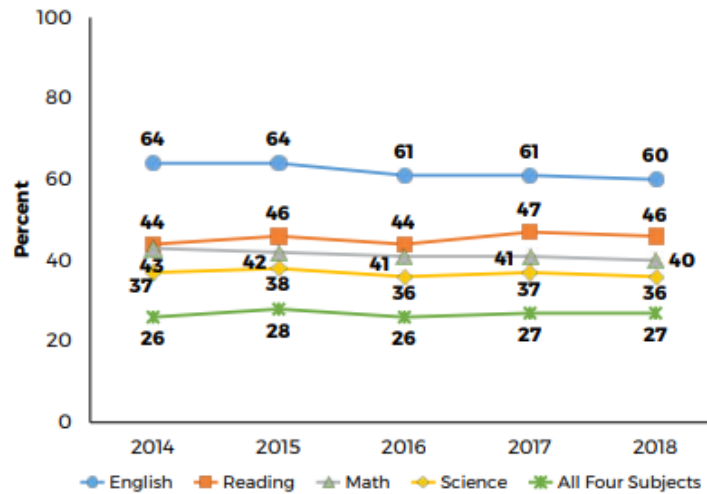
Where Arizona K-12 Ranks	
Measure	National Rank
Expenditures per Student	49th
Average Teacher Pay	48th
High School Graduates Rate	48th
College Readiness	48th
NAEP Math	24th
NAEP English	34th
Preschool Enrollment	46th

Challenged K-12 System. When adjusted for cost of living, Arizona elementary and high school teachers are some of the lowest paid in the nation, ranking 48th with an adjusted annual salary of \$46,500. Neighboring states of California, Nevada, Colorado, and Utah all have higher teacher pay than Arizona.¹⁰ <https://www.npr.org/sections/ed/2018/03/16/592221378/the-fight-over-teacher-salaries-a-look-at-the-numbers> Attracting and retaining quality teachers is a significant challenge for state k-12 schools.

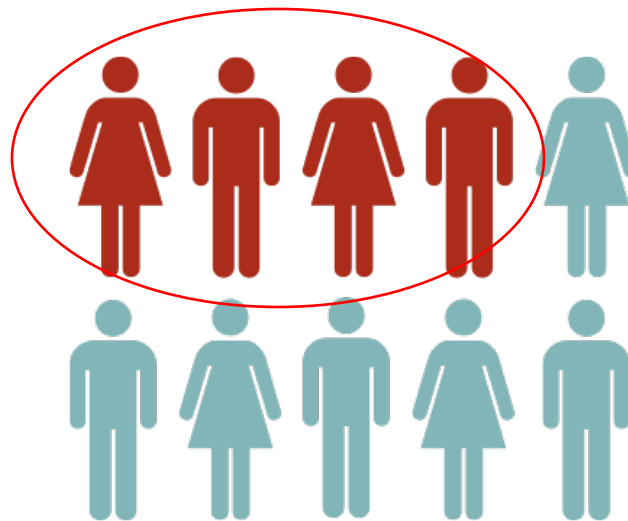
Funding: AZ high schools earn full funding (Average Daily Maintenance) for students when the student takes four classes. However, most high schools offer up to 7 periods per day. Only needing 22 classes to earn their diploma, many high school seniors only attend school for part of the day, as they have already fulfilled 18 to 21 of their required classes to graduate.

Underprepared Students. As many as two-thirds of students entering community colleges today require some level of remediation (Cohen & Brawer, 2014)¹². ACT (2018) reports that just 27% of college-bound students met all four college-readiness benchmarks (English, mathematics, reading, and science).¹³

Percent of 2014-2018 ACT-Tested High School Graduates Meeting ACT College Readiness Benchmarks



In 2018, more than 4 in 10 recent high school graduates enrolled in a developmental course at Yavapai College.



AP vs. Dual vs. Concurrent

At the other end of the curve, many high school students earn college credits through dual credit (taught by high school teachers), concurrent credit (offered by college faculty), or Advanced Placement credit (offered by high school teachers).

38 Advanced Placement courses are available from College Board, which is paid for developing curriculum & tests, training instructors, certifying courses and \$95 for grading tests. About 1/3 of students who take the standardized test receive college credit—and not all students in the class take the test. The main advantage of AP is that it is accepted at many colleges and universities across the country.

Dual Credit courses are also taught by high school teachers, but using a local community college or university curriculum, rather than College Board curriculum. Students who get a C or higher in the course (92%) receive college credit at the state's public colleges and universities, and we know that around 85% of college-bound Yavapai County high school graduates go to a public college or university. The credits will transfer to out of state public schools about ½ the time. The main limitation to growth is that HLC requires Master's degree or extensive graduate coursework in the subject, which not many HS teachers have. YC charges \$10 per credit for courses taught in this format.

An alternative is to allow the HS students to take college courses taught by YC faculty (concurrent) either online, on the college campus (eg. PV or CTEC), or rarely on the HS campus (e.g. CNT). In this case, YC charges list price tuition, but the HS does not have the expense of a teacher. 85% of these students receive college credits.

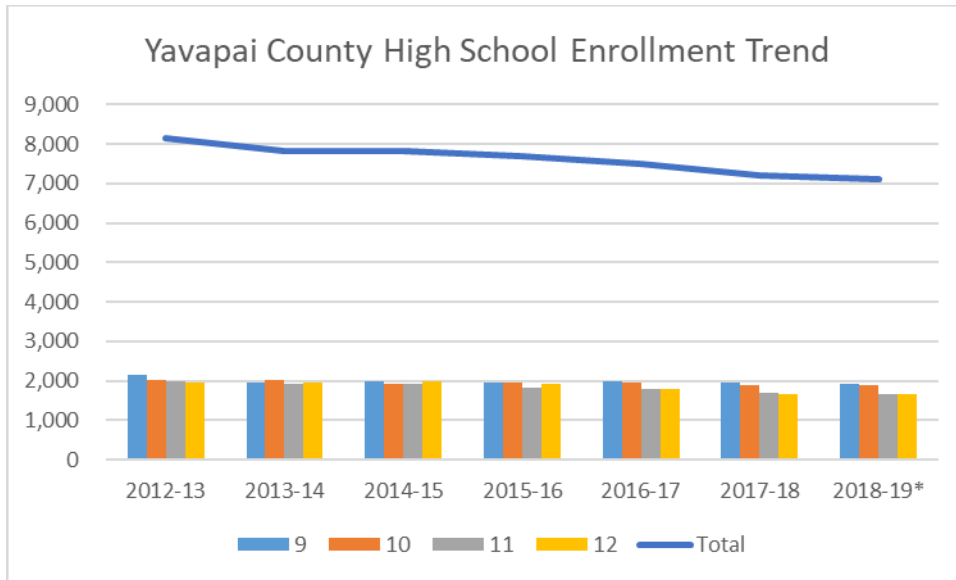
Parents have choices. The Arizona K-12 landscape is diverse, consisting of Public school districts, Public Charter School districts, Public Career Technical Education Districts, and Private Schools. They may choose to send their child to their home district, or to another district, or to a charter school. This has created competition between high schools to maintain or grow enrollments, and schools have adopted different strategies to carve out a market niche.

Career Technical Education Districts

The legislature has created CTEDs whose mission is to offer career technical training to high school students. Their districts cover one or more of the other public school districts. In Yavapai County there are two CTED's: VACTE services the East County and MICTED services the West County.

There are financial incentives to offer centralized CTE at the high school level. If the program is offered at one central location, the CTED receives .75 ADM; whereas, they only receive .25 ADM when programs are offered at more than one location in their district.

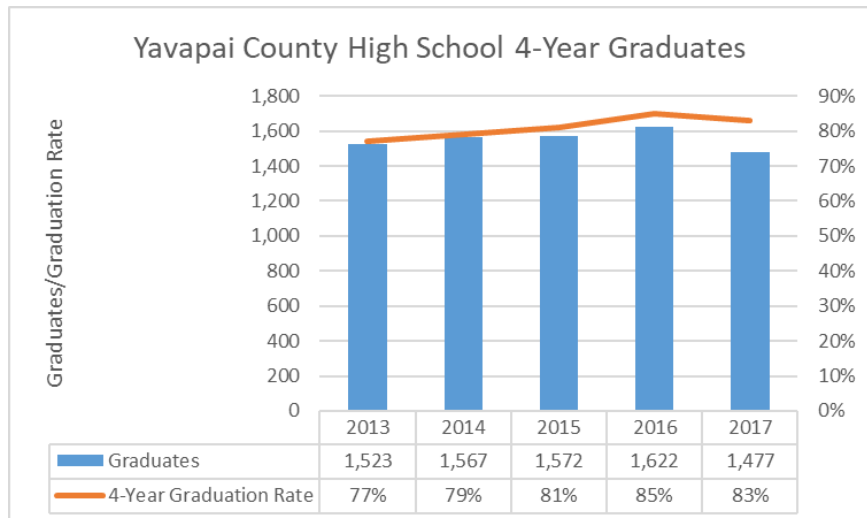
Yavapai County high school enrollments continue to decline. The net decline between 2013 and 2018 was 779 students. The decline represents a compound average annual enrollment drop of nearly 2 percent.



Source: Arizona Department of Education—Arizona October 1 Enrollment Reports; *2018-19 enrollment forecasted by IER.

Yavapai County high school graduates decline.

Declining birth rates and the aging shift in net migration indicate the number of high school graduates will likely decline slightly over the next five years. The rising county high school graduation rate (83%) is encouraging and exceeds the Arizona graduation rate of 78%.



HIGHER EDUCATION TRENDS

As mentioned previously, national **community college enrollment in the U.S. has decreased for the eighth consecutive year**. Since 2011, YC has outperformed the national and Arizona enrollment trends. Nationally, traditional students (18-22) are predicted to peak in 2024, then decline 15% in just 4 years. (https://www.scup.org/wp-content/uploads/2019/02/TrendsForHigherEd_Spring2019.pdf)

At this point, **17 states have state-wide Promise Scholarship programs** allowing recent high school graduates to attend a community college for free for some period of time.

With the overall pool of traditional candidates shrinking, and stiff price competition from public 2 year colleges (i.e. sometimes free), **many schools face financial crisis**. Many are expected to close or merge. Likewise, per the annual NACUBO Tuition Discounting study, competition is becoming fierce with tuition discounts at private 4-year universities approaching 50%.

Improving Retention Rates. Nationally, year-to-year retention rates for community colleges have stagnated. Yavapai College’s first-time student retention rates have improved and been sustained for the past four years.




Low College Completion Rates. The federal graduation rate is based on 150% of the published time for the program which equates to a three-year community college completion. 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 25%. While YC is above average, YC would have to improve its graduation rate to 37% to be in the top quartile or 49% to be in the top decile per Collegescorecard.ed.gov.




YOU
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What Students Want to Take

- **Top 10 Awarded**

Bachelors	Associates	1+ Certificates
Business (371)	Liberal Arts (387)	Culinary (72)
Health (228)	Nursing (77)	Liberal Arts (64)
Social Sciences (161)	Health Science (61)	Mech. & Repair (47)
Psychology (117)	Business Admin (54)	Med. Asst. (46)
Biology (113)	Crim. Justice (33)	LPN (41)
Engineering (106)	Med. Asst. (32)	Health Science (37)
Visual/ Perf. Arts (92)	Multi. Disc. (31)	Business (21)
Communication (92)	CIS (31)	Precision Prod (19)
Education (87)	Engineering (27)	Engineering (14)
Computer Science (64)	Mech & Repair (21)	Dental Asst. (14)

Source: 2017 National Center for Educational Statistics Slide 17

Delivery Modes

In addition to traditional semester-long face-to-face classes, colleges have started to diversify how they offer classwork, including:

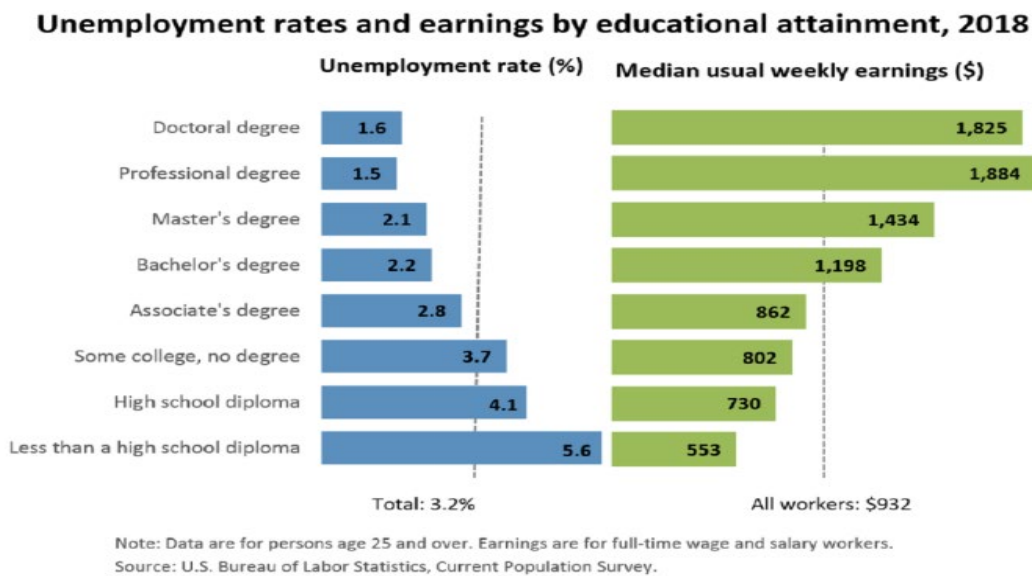
- a. Online courses and programs.
 - a. Synchronous: all students attend a class on the same day and the same time, but using the internet, with a tool like zoom. This eliminates transportation issues.
 - b. Asynchronous: students attend the same class but on days and times that fit their schedule. This is great for students with competing priorities (family, work, etc.) For example, ASU has almost 100 bachelor degrees available in a fully online format.
- b. Course start date and duration
 - a. Some schools like Rio Salado in Phoenix begin classes every week. This helps avoid peak demand for staff, and helps students begin when they are ready
 - b. Some schools offer courses over 8 weeks or even intensive bootcamps that may be as short as 4 weeks
 - i. Some career technical programs like computer programming have adopted bootcamp formats to help student enter the workforce with a specific skill more quickly
 - ii. Some Educational Opportunity Programs are offered to high risk high school graduates over the Summer to help students be ready for college
 - iii. New businesses such as Trilogy Education Services have emerged to help colleges and universities offer their programs in a bootcamp format (trilogyed.com)
- c. MOOCs: Massive Open Online Courses are a form of Asynchronous online education which has the potential to offer low price college coursework. Through recorded lectures, auto-graders, and teaching assistants. For example, Georgia Tech offers free coursework from an expert in big data, but students can pay if they want to earn the credential. This format has become a recruitment and profit center for this program.



Education and Debt. Some fear that the \$1.48 trillion in student debt is the next economic bubble. Though college expenditures per student haven't changed much over time, state appropriations per student have, and these declines in state support have led to rapid increases in tuition. Despite some 44 million Americans having college loans, the majority (56%) of borrowers owe less than \$20,000, and only 9% owe more than \$80,000.

<https://research.collegeboard.org/pdf/trends-student-aid-2018-full-report.pdf>)

Value: The key to student loans being a sound investment lie in the people completing their degree. For those finishing their degree the investment is great as evidenced by unemployment rates and median wages by educational attainment. This is further evidence that higher education is a vital component of fulfilling the American dream.



Lifelong Learning. The SCUP article: Learning, From K12 to 401(K) says an initiative at Harvard, “The Sixty Year Curriculum,” focuses on what it will take to develop new educational models that will support true lifelong learning and “reskilling” from K-12 into retirement. Harvard professor Chris Dede argues that such models will require fundamental changes in pedagogy, credentials (like badges) and how learning takes place. For example, shifting from emphases on seat time and standardized test in favor of “credentials certified by proficiency on competency-based measures.”



Esports. With annual revenues exceeding \$900 million and viewing audiences in the hundreds of millions, esports (competitive video gaming) is exploding. Esport growth is forecasted to grow exponentially with more than 7 in 10 teenagers considering themselves to be gamers. Colleges and universities are beginning to add esports teams as a new avenue of student recruitment. The national association of collegiate esports (NACE) a nonprofit membership association boasts an affiliation with 130 member schools with more than 3,000 student e-athletes. In Arizona, Grand Canyon University and Embry-Riddle both have esports teams according to NACE.

Questions for Consideration:

18. Are there opportunities to partner with AZ traditional high schools to offer more college courses to high school students either through dual or concurrent courses?
19. Is there feedback and support that YC could provide to high schools to support their efforts to produce college-ready graduates?
20. With financial pressures on private universities, are there opportunities to partner with Prescott College and/ or Embry Riddle? Can we teach their Freshmen and Sophomores allowing their faculty to focus on higher tuition graduate students? Can they take advantage of our state of the art facilities to recruit more students?
21. Are there opportunities to garner state support for a Promise Scholarship program using the TN Promise rationale that it builds the workforce and strengthens the economy?
22. Is YC delivering programs the way our students want/ need them? Should we offer more online programs? Short format courses? Bootcamps?
23. Are there programs or courses unique to YC that might succeed as a MOOC?
24. Can YC reengineer processes to further improve completion rates for all subgroups so that students enjoy the benefits of a college degree and can more readily repay their loans?
25. Would E-sports be a good recruitment/ retention tool?

TECHNOLOGY

TECHNOLOGY TRENDS

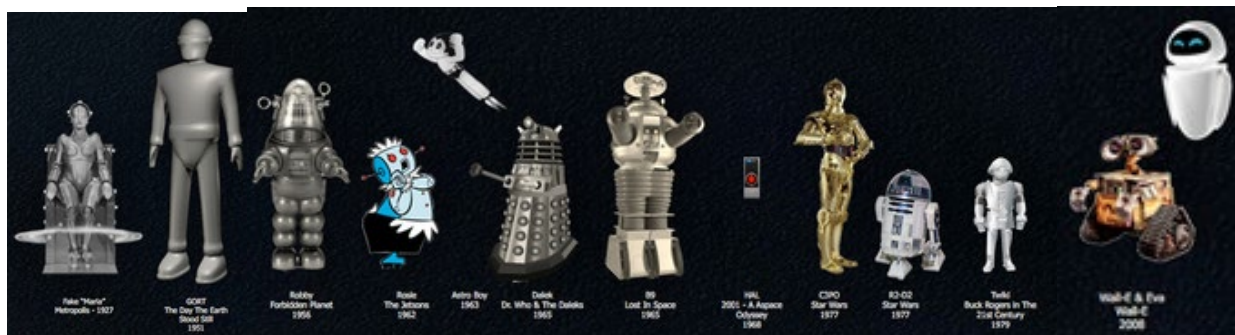
Schools in Arizona's Flagstaff closed for second day due to cyberattack

BY MAGGIE MILLER - 09/06/19 11:41 AM EDT

125 COMMENTS

Cybersecurity and Ransomware. Cybersecurity remains a top concern for colleges and universities. A recent report found that hacking has more than doubled in higher education over the past two years. Close to home, the Flagstaff school district closed for multiple days due to debilitating ransomware. Flagstaff is just one in a string of k-12 and higher education institutions to experience the crippling effects of ransomware. In response to cyberattacks and data breaches, federal and state governments compliance mandates are increasing and requiring college IT staffs to spend more resources (human and financial) toward data security.

Robots and Artificial Intelligence



We are in the verge of the 4th Industrial Revolution says Klaus Schwab, founder of the World Economic Forum. The first three included steam and water power, electricity and assembly lines, and computerization. Industry 4.0 will bring exponential change to the ways we live and work through robotics and artificial intelligence.

(<https://www.forbes.com/sites/bernardmarr/2018/08/13/the-4th-industrial-revolution-is-here-are-you-ready/#5fac0e82628b>)

Once limited to the dominion of blue collar workers, robots and AI appear poised to do much white collar work as well. Per Joseph Aoun, President of Northeastern University, colleges will need to change curriculum to prepare workers for the future. In his book, Robot-proof, he

explains that workers of the future will need to have a combination of technical and creative skills including data literacy, technological literacy, humanities, systems thinking, entrepreneurship, critical thinking, and cultural agility.

THE WALL STREET JOURNAL

White-Collar Robots Are Coming for Jobs



Meet Amelia, an AI who works at 20 large firms, including Allstate.

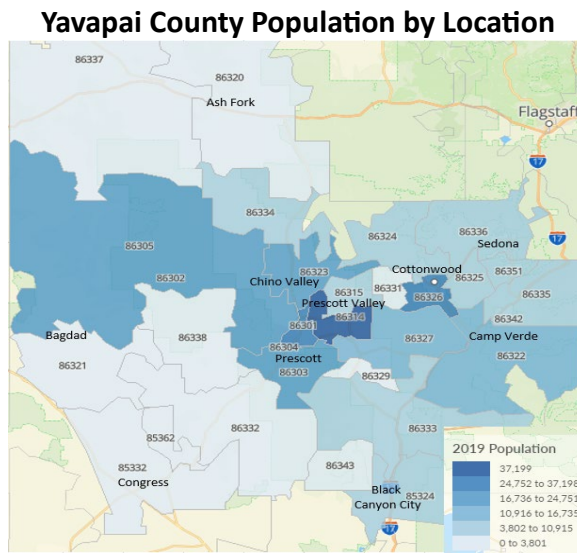
Technological Disruption. Technology brought us innovations, increased efficiencies, and broadened access to higher education. Nonetheless, the pace of technological change also brings dramatic shifts in our ability to adapt to change and leverage the positive benefits of new technology. Canada's Prime Minister, Justin Trudeau, sums it up well when he said: "Think about it: The pace of change has never been this fast, yet it will never be this slow again."¹⁶ It is imperative that higher education institutions take a strategic approach to technology to mitigate disruptions and help students and staff adjust to changes.

Questions for Consideration:

26. Is YC allocating adequate resources to be reasonably secure against cyber-attacks?
27. Is YC preparing to take advantage of new technologies to lower costs and increase results? Where do we stand with chatbots? Texting? Canvas auto grading? Other AI support for students or staff? Is our ERP system up to date?

DEMOGRAPHICS

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 complex due to a lack of data collected at the sub-county level. To obtain as clear a picture as possible, this analysis used zip code level data and were divided into three regions: West County (Prescott area), East County (Verde Valley), and Balance of County.



Source: Economic Modeling Specialists, Intl., 2019

POPULATION

Yavapai County’s 2019 population is 234,456. Over the next five years, the county population is forecasted to grow by 2.4%, below the Arizona (4.5%) and U.S. projections of 3.0%.

National, Arizona, and Yavapai County Population and Projections

	2010	2019	2024	Net Growth Forecast (2019-2024)	% Growth Forecast (2019-2024)
United States	308,745,538	328,144,740	338,120,498	9,975,758	3.0%
Arizona	6,392,017	7,204,602	7,527,040	322,438	4.5%
Yavapai County	211,033	234,456	240,187	5,731	2.4%

Source: EASI Analytics Inc., 2019

Examining sub-county areas, almost two-thirds of Yavapai County residents live in the west county, while about a third reside in the east county. Five-year growth forecasts for all sub-county areas are about 2.5%.

Yavapai County Sub Area Population and Projections

	2010	2019	2024	Net Growth Forecast (2019-2024)	% Growth Forecast (2019-2024)
Yavapai County	211,033	234,456	240,187	5,731	2.4%
West	133,038	147,916	151,527	3,611	2.4%
East	68,338	75,696	77,622	1,926	2.5%
Balance	9,657	12,546	12,868	322	2.6%

Source: EASI Analytics Inc., 2019

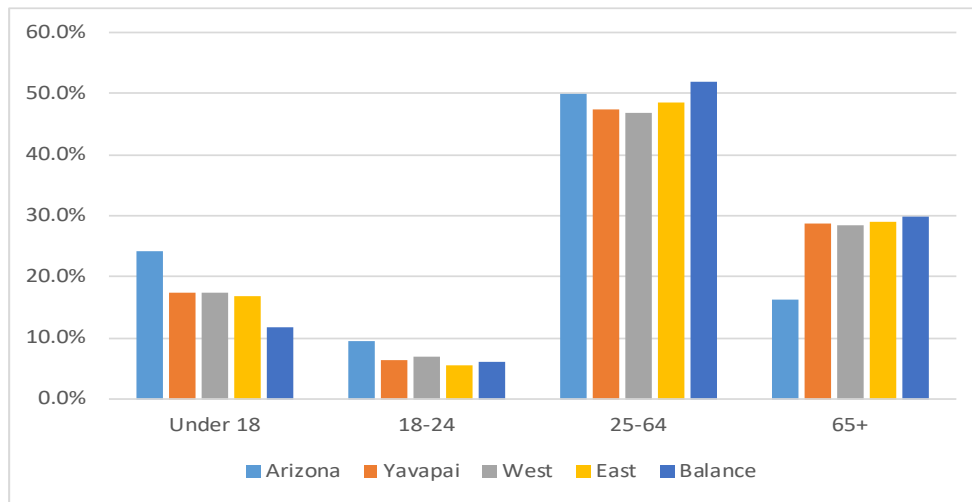
Note: Region populations are determined by zip code and may not equal county total.

The Yavapai cities and towns expected to grow the fastest over the next 5 years include Prescott, Prescott Valley, Chino Valley, Cottonwood, and Sedona.

AGE GROUPS

Yavapai County’s share of the population age 65 and older is near twice that of the Arizona and the U.S. as a whole. The over 65 populations are consistent over the three sub-county areas. Less than half of the county’s population is workforce age (25-64). The west sub-county area has the largest proportion of traditional-age college students (18-24).

2019 Age Group Distribution



Source: EASI Analytics, Inc., 2019

A closer inspection of age groups shows that the largest increases will occur in the age groups 65 and over, and will add 12,357 new residents by 2024. In contrast, the 45-64 age group will shrink by 4,382 along with declines in 20 to 29 (-1,227) and 10 to 14 (-212). These age trends portend a significant shift for Yavapai College and its curriculum and program offerings.

Yavapai County Population Projections by Age Group

Population, Median Age	2019	2024	Net Growth Forecast	% Growth Forecast
			(2019-2024)	(2019-2024)
Under 5 years	10,286	11,464	1,178	11%
5 to 9 years	10,297	10,961	664	6%
10 to 14 years	11,214	11,002	(212)	(2%)
15 to 19 years	10,884	11,134	250	2%
20 to 24 years	10,562	9,551	(1,011)	(10%)
25 to 29 years	10,895	10,679	(216)	(2%)
30 to 34 years	10,616	11,470	854	8%
35 to 39 years	10,546	11,473	927	9%
40 to 44 years	10,185	11,597	1,412	14%
45 to 49 years	11,039	11,124	85	1%
50 to 54 years	12,972	12,297	(675)	(5%)
55 to 59 years	17,159	14,696	(2,463)	(14%)
60 to 64 years	22,090	20,761	(1,329)	(6%)
65 to 69 years	24,171	25,531	1,360	6%
70 to 74 years	20,826	24,113	3,287	16%
75 to 79 years	14,519	18,587	4,068	28%
80 to 84 years	8,674	11,192	2,518	29%
85 years and over	7,472	8,596	1,124	15%

Source: EMSI, Quarter 3, 2019

RACE AND ETHNICITY

The overwhelming majority (80%) of Yavapai County residents are White, Non-Hispanic with a median age of 55. Hispanics make up the next largest group at 15% with a median age (28) that is 50% younger than the majority race.

Yavapai County Race and Ethnicity

POPULATION BY RACE/ETHNICITY	2019	2024	Net Growth Forecast	% Growth Forecast
			(2019-2024)	(2019-2024)
White Population, Non-Hispanic	187,958	195,925	7,967	4.2%
Black Population, Non-Hispanic	1,735	1,959	224	12.9%
Asian Population, Non-Hispanic	2,484	2,817	333	13.4%
American Indian and Alaska Native Alone	3,259	3,414	155	4.8%
Two or More Races, Non-Hispanic	4,042	4,350	308	7.6%
Hispanic, All Races	34,680	37,500	2,820	8.1%

Source: EMSI, Quarter 3, 2019

Yavapai County's minority populations are appreciably younger than the White majority.

Yavapai College Median Age by Race and Ethnicity

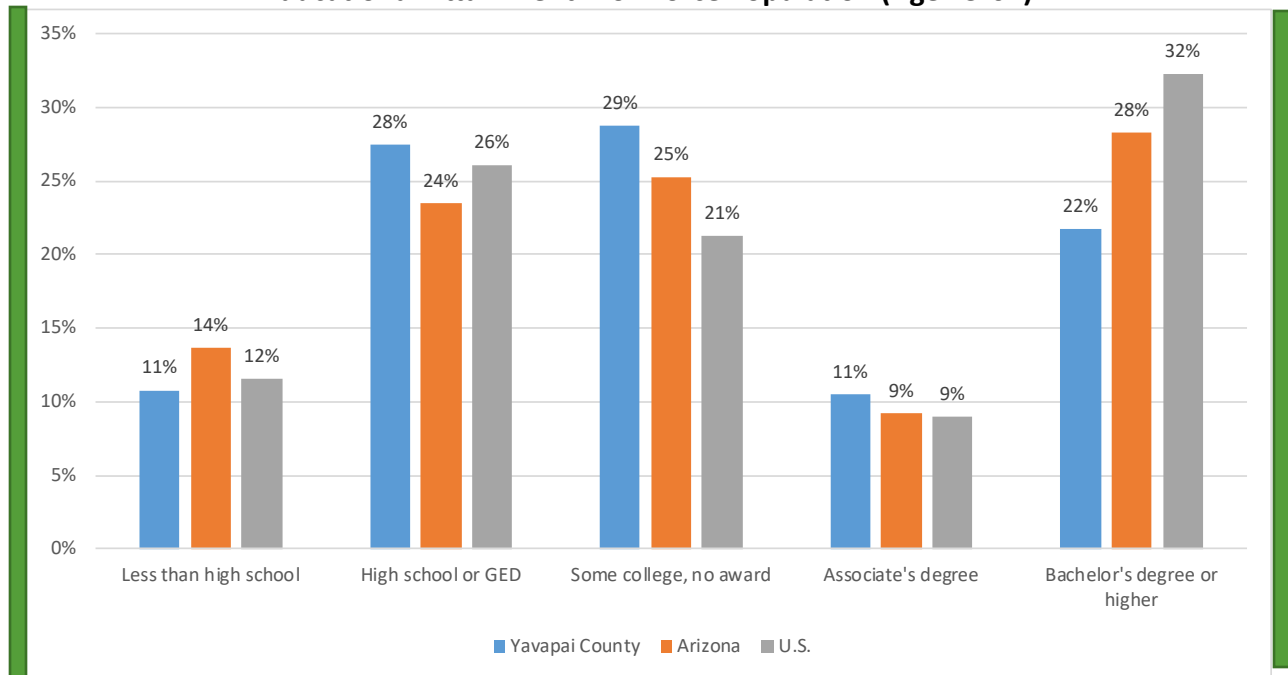
	2019
MEDIAN AGE BY RACE	
White Median Age	55.2
Black Median Age	39.0
Asian Median Age	46.0
American Indian and Alaska Native Median	37.0
Other Race Median Age	27.4
Two or More Races Median Age	26.4
MEDIAN AGE BY ETHNICITY	
Hispanic Median Age	28.0
White Non Hispanic Median Age	56.8

Source: EASI Analytics Inc., 2019

EDUCATIONAL ATTAINMENT

Given Yavapai County’s significantly older population, it is important to examine educational attainment for the workforce population (25-64). Yavapai County’s bachelor’s degree attainment rate is about 1.5 times lower than the U.S. level and 1.3 times lower than the Arizona level. However, the County’s rate of workers with some college or an associate degree outperforms both state and national percentages. There are roughly 75,000 Yavapai County residents who are in the workforce -- and most could benefit from earning an associate’s degree.

Educational Attainment Workforce Population (Age 25-64)



Source: IPUMS USA, 2013-2017 American Community Survey 5-Year Estimates Micro Dataset

POVERTY

Past environmental scans have used traditional poverty rates to assess financial challenge and insecurity in our communities. However, the official poverty guidelines represent such a low bar. For example, the official poverty threshold for a family of four is \$25,100. Instead, this edition focuses on near poverty (150%) to assess financial insecurity.

Yavapai County Residents Living in Near Poverty

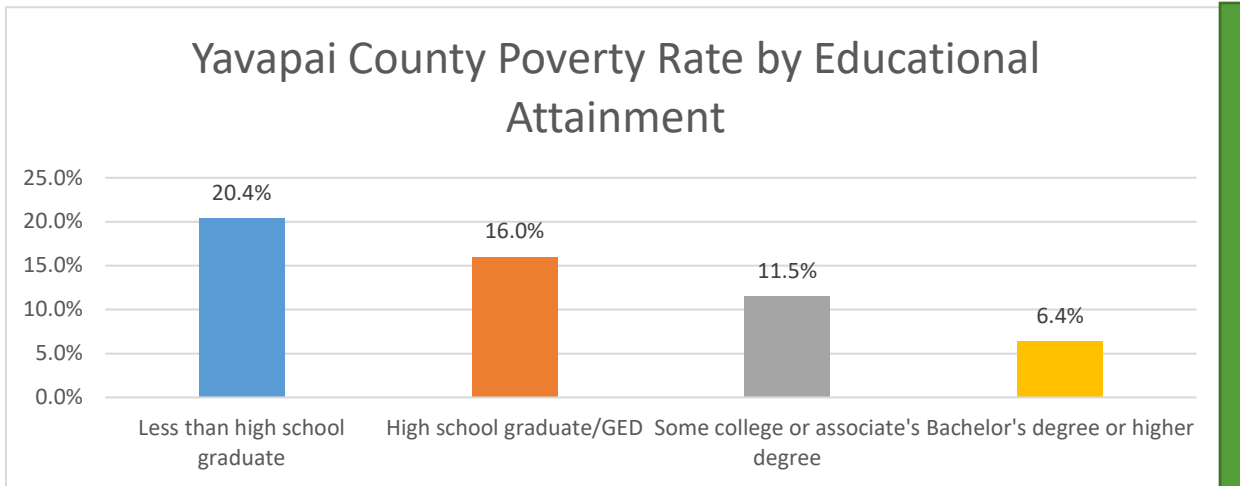


Source: U.S. Census Bureau, 2013-2017 American Community Survey 5-Year Estimates
 One in four or more than 54,000 Yavapai County residents lives in near poverty. The near poverty threshold for a family of four is \$37,700

Near Poverty by Selected Community	
Select	150% Poverty Level
City/Town/County	
Prescott	8,481 (21%)
Prescott Valley	10,950 (26%)
Chino Valley	2,971 (27%)
Cottonwood	4,209 (36%)
Camp Verde	3,629 (35%)
Sedona	2,037 (20%)
Yavapai County	54,077 (25%)

Source: U.S. Census Bureau, 2013-2017 American Community Survey 5-Year Estimates

Education and poverty. There is a direct association between educational attainment and a region’s poverty rate. Poverty rates are significantly lower for County residents with a postsecondary credential.



Source: U.S. Census Bureau, 2012-2016 American Community Survey 5-Year Estimates

Questions for Consideration:

- 28. Given our demographics and funding, YC clearly needs to provide services valued by people over 65 years old. How can YC attract more 65+ credit students? How can YC offer more non-credit options in a way that does not impact the Expenditure Limit?
- 29. Given our demographics, how can YC better reach and better serve the Hispanic community?
- 30. How do we improve our recruitment and marketing efforts to entice the 75,000 non-traditional aged residents who do not have a degree?