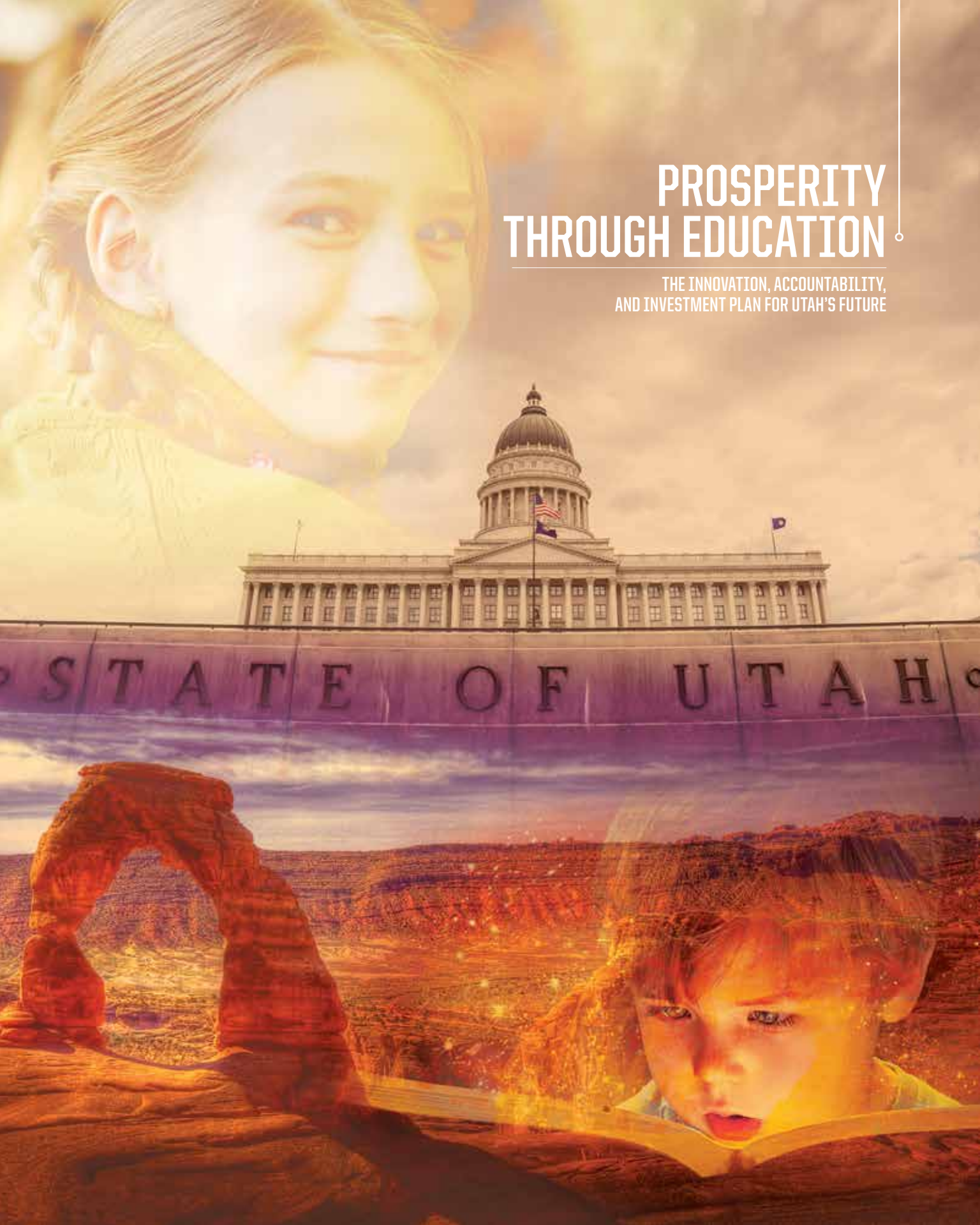
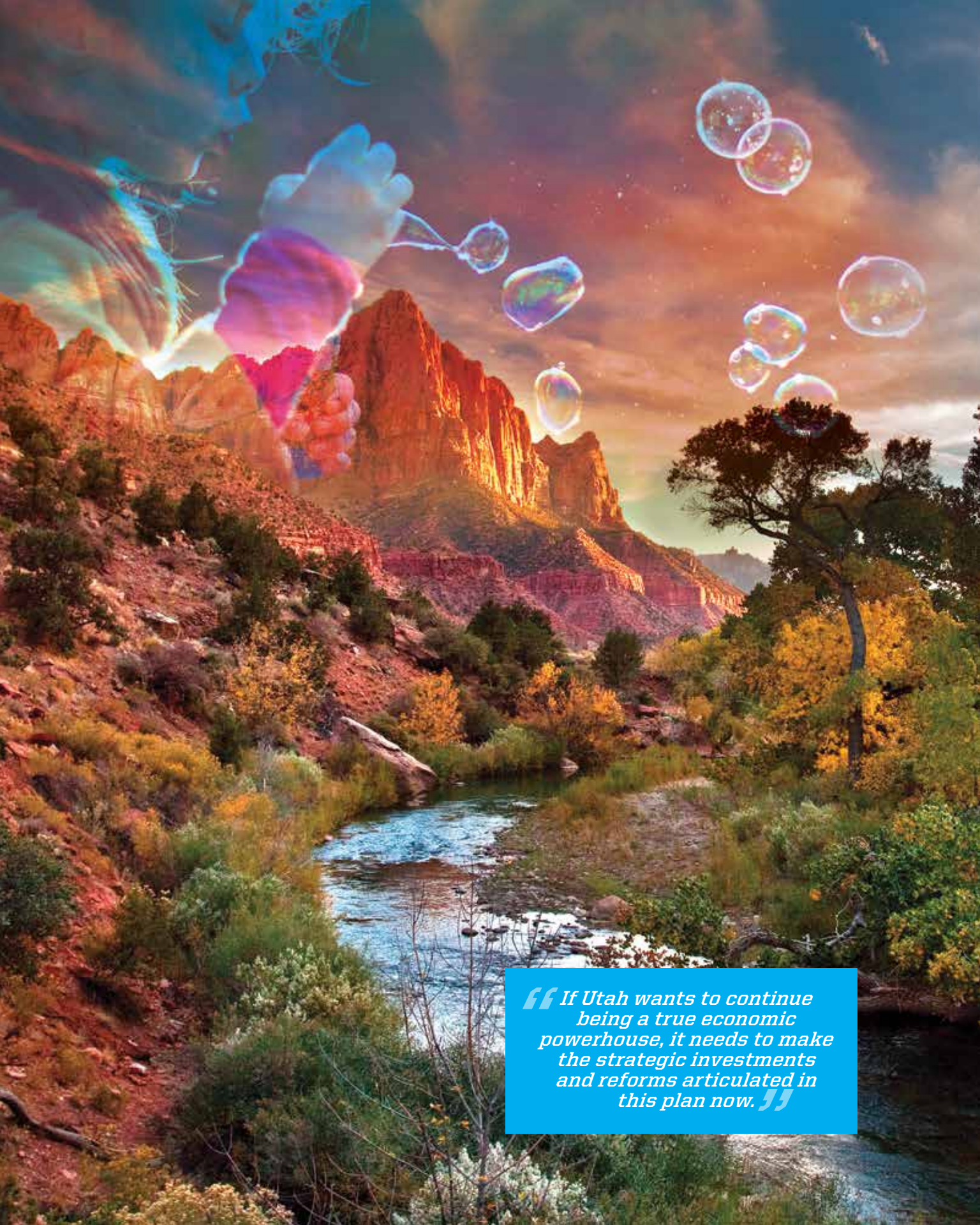


PROSPERITY THROUGH EDUCATION

THE INNOVATION, ACCOUNTABILITY, AND INVESTMENT PLAN FOR UTAH'S FUTURE

TABLE OF CONTENTS



If Utah wants to continue being a true economic powerhouse, it needs to make the strategic investments and reforms articulated in this plan now.

EXECUTIVE SUMMARY

Across America, the most vibrant economies put education first. Decades of research show that a person's earning power and a society's wealth are tied to educational achievement. This applies more than ever, as economic prosperity is driven by those with knowledge and skills to compete in a global market.

Utah's globally-recognized pro-business climate and diverse economy has powered a remarkable economic recovery. In a globally competitive and rapidly changing economy, complacency is the recipe for decline. Poor educational outcomes are clear economic warning signs in the midst of these unprecedented transformations. A more competitive tomorrow and future prosperity will simply pass us by if we do not plan decisively for Utah's future with innovative strategies, increased accountability and targeted investments in education.

Over the past several years, business, community, education and elected leaders have partnered together to put education first. In a variety of settings, these groups have taken the time to understand education and to collaborate and coordinate efforts to improve. This report is the result of these conversations, including those at the Governor's Commission on Education Excellence, the Legislative Education Task Force, Legislative Interim, and in a variety of other settings. It focuses on the key factors repeatedly identified as the pivotal influencers of success.

Thousands of Utahns have volunteered, researched, contributed and worked to fulfill Utah's economic potential through improving our educational outcomes. Utah must act to prepare the largest population of young people in the country to be among the most educated workforce in the nation. This began with adopting shared goals to ensure our youngest students are proficient in math and reading, our high-school students graduate, and more Utahns pursue and complete post-secondary certificates and degrees, strengthening Utah's competitive-advantage.

This has resulted in Prosperity Through Education - an innovation, accountability and investment plan to build the strongest economy in the nation. This plan provides an overview of the relationship between education and economic development, emphasizing the differences between communities in decline and those on the rise – a relationship that shows Utah's thriving economy contains clear warning signs that if uncorrected, pose future challenges. This is not from a lack of effort from those involved, but simply a complex challenge needing a renewed community-wide commitment.

The current conditions of our State's key educational measures are presented with this initial five-year plan. It is apparent that just putting more money into education is not the answer. To be successful, any investment must be tied to improved methods of motivating results and effective management practices. The evidence is both clear and substantial that targeted investment in education has a significant effect on economic development. Both lawmakers and educators have expressed commitment to improved accountability measures tied to increased funding. Investment is most likely to be successful when communities rally around their schools, make education a priority and help create the conditions for learning.

If Utah wants to continue being a true economic powerhouse, it needs to make the strategic investments and changes articulated in this plan now. To be successful we need the commitment of all levels of leadership to move ahead, and not fall behind, in the race to produce and attract highly educated, highly skilled people who want to live, work, and call Utah home. Let's prosper through education.

> *"Across America, the most vibrant economies put education first."*

PROPOSED FIVE-YEAR PLAN FOR INNOVATION, INVESTMENT, AND ACCOUNTABILITY IN EDUCATION

Growth funding and maintenance and operation are ongoing responsibilities. It is anticipated that the Utah Legislature will provide funding needed to keep pace with growth at all levels of Utah's public education system. The following targeted investments are above and beyond these basic responsibilities.

K-12 EDUCATION

OBJECTIVE 1

UTAH WILL BE IN THE TOP 10 STATES ON THE 4TH AND 8TH GRADE NAEP READING ASSESSMENTS AND SHOW SUBSTANTIAL GROWTH ON STATE ASSESSMENTS TIED TO STATE CORE ENGLISH/LANGUAGE ARTS STANDARDS

School success and college- and career-readiness begin with the ability to read fluently, continued focus must be placed on reading achievement along with high standards and accountability through rigorous assessment		PROJECTED COST - CUMULATIVE ANNUAL BASE FUNDING INCREASES					
		FY16	FY17	FY18	FY19	FY20	TOTAL
A	K-3 targeted reading curricula and support	$5 M	$5 M	$5 M	$5 M	$5 M	$25 M
B	Professional learning communities in elementary schools	$1 M	$1 M	$1 M	$1 M	$1 M	$5 M
C	Voluntary pre-school, community schools, and other innovative public-private partnerships to support school readiness and success for at risk students	$3 M	$3 M	$3 M	$3 M	$3 M	$15 M
D	Expansion of voluntary full-day kindergarten for at-risk students	$4 M	$4 M	$4 M	$4 M	$4 M	$20 M

OBJECTIVE 2

UTAH WILL BE IN THE TOP 10 STATES ON THE 4TH AND 8TH GRADE NAEP MATH ASSESSMENTS AND SHOW SUBSTANTIAL GROWTH ON STATE ASSESSMENTS TIED TO STATE CORE MATH STANDARDS

Investment in technology devices and technology-based assessments ensures we increase the number of residents completing college, pursuing STEM majors, and qualifying themselves for high skill, high wage STEM jobs.		PROJECTED COST - CUMULATIVE ANNUAL BASE FUNDING INCREASES					
		FY16	FY17	FY18	FY19	FY20	TOTAL
A	Technology devices in K-3 classrooms	$1 M	$1 M	$1 M	$1 M	$1 M	$5 M
B	Technology-based math assessment tools in grades K-8	$1 M	$1 M	$1 M	$1 M	$1 M	$5 M
C	Math endorsements and technology training for teachers in grades 4-6	$2 M	$2 M	$2 M	$2 M	$2 M	$10 M
D	Professional learning communities for math teachers in grades 4-8	$2 M	$2 M	$2 M	$2 M	$2 M	$10 M
E	STEM endorsements for secondary math teachers	$1.5 M	$1.5 M	$1.5 M	$1.5 M	$1.5 M	$7.5 M
F	Professional learning communities and professional development for math teachers in grades 9-12	$1 M	$1 M	$1 M	$1 M	$1 M	$5 M

OBJECTIVE 3

UTAH WILL BE IN THE TOP TEN STATES ON GRADUATION RATE, AND WILL SHOW SUBSTANTIAL GROWTH ON THE PERCENTAGE OF HIGH SCHOOL STUDENTS DEMONSTRATING COLLEGE READINESS ON THE ACT

School and districts will be accountable for improving high school graduation rates and ensuring students are guided and advised about class choices and post high school options.		PROJECTED COST - CUMULATIVE ANNUAL BASE FUNDING INCREASES					
		FY16	FY17	FY18	FY19	FY20	TOTAL
A	Additional counselors and mentors for middle and high school students, and targeted professional development for counselors on issues related to college access and success	$3 M	$3 M	$3 M	$3 M	$3 M	$15 M
B	Middle and high school advocates, academic coaches, and tutors	$1 M	$1 M	$1 M	$1 M	$1 M	$5 M

OBJECTIVE 4

UTAH WILL SHOW REAL GROWTH IN TEACHER COMPENSATION AND DEMONSTRATE SUSTAINED COMMITMENT TO PROFESSIONAL DEVELOPMENT

	Developing and retaining highly skilled public school teachers and administrators, and measuring and rewarding superior instructional performance will improve overall educational outcomes.	PROJECTED COST - CUMULATIVE ANNUAL BASE FUNDING INCREASES					
		FY16	FY17	FY18	FY19	FY20	TOTAL
A	Quality instruction and teacher compensation	$50 M	$50 M	$50 M	$50 M	$50 M	$250 M
B	Teacher induction programs and professional development priorities identified by Utah State Board of Education and local school districts	$6 M	$6 M	$6 M	$6 M	$6 M	$30 M

HIGHER EDUCATION

(INCLUDES USHE AND UCAT)

OBJECTIVE 1

UTAH'S HIGHER EDUCATION COMPENSATION WILL BE COMPETITIVE AND ATTRACT HIGH QUALITY INSTRUCTORS AND RESEARCHERS

	Utah will develop compensation policies that reward exemplary instructors and researchers for achieving specific outcomes.	PROJECTED COST - CUMULATIVE ANNUAL BASE FUNDING INCREASES					
		FY16	FY17	FY18	FY19	FY20	TOTAL
A	Innovations to strengthen merit-based compensation practices and improve instruction and research	$5 M	$5 M	$5 M	$5 M	$5 M	$25 M
B	Enhanced compensation	$24 M	$24 M	$24 M	$24 M	$24 M	$120 M

OBJECTIVE 2

UTAH WILL RANK IN THE TOP TEN STATES FOR THE PERCENTAGE OF WORKING AGE ADULTS (25-64) WITH A POSTSECONDARY CERTIFICATE OR DEGREE

	Investment in institutions that grant certificates and degrees will relate to their success at increasing completion rates and properly preparing all students for the workplace.	PROJECTED COST - CUMULATIVE ANNUAL BASE FUNDING INCREASES					
		FY16	FY17	FY18	FY19	FY20	TOTAL
A	Institutional performance rewards for increasing graduation (completion) rates	$20 M	$5 M	$5 M	$5 M	$5 M	$40 M
B	Access and outreach initiatives to increase participation and completion rates of underserved students	$3 M	$3 M	$3 M	$3 M	$3 M	$15 M
C	Increased certificate and degree programs that meet high-wage, high-demand workforce needs	$6 M	$6 M	$6 M	$6 M	$6 M	$30 M

OBJECTIVE 3

UTAH WILL MAKE HIGHER EDUCATION AFFORDABLE FOR MIDDLE AND LOWER INCOME FAMILIES AND STUDENTS

	Innovative programs will direct investment to students that are accountable for properly preparing themselves for success in postsecondary education and those students that are successful and move through certificate and degree programs in a timely manner.	PROJECTED COST - CUMULATIVE ANNUAL BASE FUNDING INCREASES					
		FY16	FY17	FY18	FY19	FY20	TOTAL
A	Funds to meet increasing demand for Regents' Scholarship	$2 M	$2 M	$2 M	$2 M	$2 M	$10 M
B	Expanded and new performance-based scholarships targeting lower income students	$5 M	$5 M	$5 M	$5 M	$5 M	$25 M

SECTION I

THE ECONOMIC FUTURES OF STATES AND COMMUNITIES ARE DIVERGING BASED ON EDUCATION AND SKILL

COLLEGE EDUCATED WORKERS CONGREGATE TOGETHER

All across the country, communities "are dividing themselves into two distinct groups, with college-educated workers increasingly clustering in desirable places that less-educated people cannot afford."[2] Describing this trend, Rebecca Diamond, Assistant Professor of Economics at the Stanford Graduate School of Business, explains:

> In 1980, the average college graduate earned 38% more than the average high school graduate. By 2000, the college-high school graduate wage gap increased to 57%, and by 2011 it rose to 73%. At the same time, workers have become increasingly spatially segregated by education. Cities that initially had a large share of college graduates in 1980 increasingly attracted larger shares of college educated workers from 1980 to 2000, while cities with relatively less educated populations in 1980 gained few college grads over the following 20 years. The increasingly "highly educated cities" also experienced higher wage growth for both low- and high-skill workers and substantially larger increases in housing costs. The economic trajectories of these increasing high skill cities are diverging from those with fewer college graduates.[3]

This phenomenon produces a significant domino effect for both economic development and quality of life. Describing the economic benefits for communities, as well as families, of producing large numbers of college graduates, Diamond states:

> Increasing a city's share of college graduates also leads to local productivity increases for both college and non-college workers, driving up all workers' wages. For example, increased physical proximity of educated workers may lead to better sharing of ideas, faster innovation, or faster technology adoption driving up wages of college grads. Further, low skill workers' wages can also benefit as the increased college share drives demand for local goods and services, creating jobs for the less skilled.[4]

Diamond notes that in 2000, "the most productive city for college graduates was San Jose, CA, followed by Ventura-Oxnard-Simi Valley, CA, San Francisco-Oakland-Vallejo, CA, New York-Northeastern NJ, and Hartford-Bristol-Middleton-New Britain. These cities are the hubs of many of the most productive industries such as high tech in Silicon Valley and San Francisco and finance in New York." [5] Conversely, the city most productive for low skill workers in 2000 "was Riverside-San Bernardino, CA, followed by Flint, MI, Detroit, MI, Las Vegas, NV, and Tacoma, WA." [6]

Explaining the difference between these two sets of communities, Diamond writes:

> Riverside-San Bernardino, CA is where many of the largest manufacturing companies have chosen to place their distribution centers. These centers transport finished goods and materials from the ports surrounding Los Angeles to destinations around the US. Shipping and distribution provide many relatively high paying jobs for low skill workers here. While Flint and Detroit, MI rank as the second and third most productive areas in 2000, they are also in the top 10 for cities which have experienced the largest productivity declines for low skill workers from 1980 to 2000. In 1980, Flint and Detroit, MI were the most productive cities for low skill workers, but as American auto manufacturing has lost market share, wages and jobs have fallen here.[7]

Growing a city's number of college graduates also impacts quality of life, as Diamond notes:

Increasing a city's share of college graduates causes increases in the quality and variety of the local retail market including increases in per capita amounts of

clothing stores, bars, restaurants, movie theaters, and grocery stores.

College share increases also lead to declines in property crime rates and pollution levels.[8]

In fact, Diamond emphasizes that college-educated workers, because they earn higher wages, have more choice on where to live, and often are willing to pay higher housing prices in exchange for access to high wage labor markets and "an array of more desirable amenities."[9]

A TALE OF TWO CITIES

According to Diamond, one need look no further than Detroit and Boston to see the reality of spatial skill sorting and its impact on local economies. Historians might easily look back on the past 20 years of these two communities and exclaim: "It was the best of times, it was the worst of times, it was the age of wisdom, it was the age of foolishness, it was the epoch of belief, it was the epoch of incredulity, it was the season of light, it was the season of darkness, it was the spring of hope, it was the winter of despair."[10]

Once touted as a "model for the nation in urban education in the early 20th century when manufacturing was booming,"[11] Detroit's public school system is now a disaster zone. In 2009, Detroit public schools had the lowest scores ever recorded in the 21-year history of the National Assessment of Educational Progress (NAEP) math and reading tests.[12] Therefore, it is not surprising that enrollment decline in the Detroit Public Schools has been precipitous, with the school district losing 42,576 students between 2005 and 2010, which was the greatest percentage enrollment decrease (32.1%) of the 100 largest school districts in America during that period.[13] Due to these problems, combined with terrible mismanagement, an emergency financial manager was appointed by the state in 2009 to address the district's financial deficit of $259 million,[14] dozens of schools have closed, and a new state entity, the Education Achievement Authority of Michigan, was created to take control of Detroit's most distressed schools.[15]

> *"Increasing a city's share of college graduates causes increases in the quality and variety of the local retail market and leads to declines in property crime rates and pollution levels."*

Such neglect, together with the departure of auto assembly and other low skill, high wage manufacturing jobs, has led to what some observers now describe as a "post-apocalyptic collapse,"[16] and with good reason, given the huge sections of the community that have simply disappeared. "Of Detroit's 380,000 properties, some 114,000 have been razed, with 80,000 more considered blighted and most likely in need of demolition."[17] In December 2013, Detroit became the largest American city ever to file for bankruptcy.[18] Clearly the worst of times.

Exactly the opposite occurred in Boston during the same two decades (1990-2010), with the city experiencing rapid economic prosperity due in large part to the strategic planning and investments that the city and the state of Massachusetts made in both K-12 and higher education. Back in the 1970s, "Boston public schools were declining in quality, driven by racial tensions from integrating the schools."[19] In addition, Massachusetts was implementing an inequitable system of education funding that led to prolonged litigation, and ultimately a Massachusetts Supreme Court decision declaring the funding framework unconstitutional.[20]

In response, the Massachusetts State Legislature in 1993 passed the Massachusetts Education Reform Act (MERA), which infused billions of dollars of new state education funding into public schools;

implemented new, internationally benchmarked standards; and required schools to be accountable for student performance on rigorous assessments aligned to the standards.[21]

As a consequence of this focus and investment, the Boston Public Schools in 2006 won the Broad Prize for the most improved urban school system in America, and public schools across Massachusetts became known as the best in the nation.

Massachusetts fourth and eighth graders have earned the highest scores in the nation in reading and mathematics on the National Assessment of Educational Progress (NAEP) five consecutive times (2005, 2007, 2009, 2011, and 2013)[22] On the 2012

> *"In 1990, only 27% of adults in Massachusetts age 25 and older held a bachelor's or higher degree. By 2010, 39% of the state's adults held a bachelor's or higher degree, significantly higher than the national average of 28.4%."*

administration of the Program for International Student Assessment (PISA), a test administered by the Organization for Economic Cooperation and Development (OECD) which measures the academic performance of 15-year-old students in 65 educational systems across the world, Massachusetts students scored significantly higher than U.S. students, and better than most other industrialized countries.[23] Massachusetts students did particularly well in reading, with only three school systems (Shanghai, Hong Kong, and Singapore) doing better.[24]

Over the past twenty years, Massachusetts also achieved major gains in college attainment rates. In 1990, only 27% of adults in Massachusetts age 25 and older held a bachelor's or higher degree. [25] By 2010, 39% of the state's adults held a bachelor's or higher degree, significantly higher than the national average of 28.4%[26]

Moreover, 50.5% of Massachusetts' working age population of 25-64 now holds an associate's or higher degree, again significantly higher than the U.S. average of 38.3%.[27] Among the top 20 largest American cities by population, the Boston metro area is ranked second in the percentage of adult residents with an associate's or higher degree, with 54.29%, trailing only Washington, D.C. at 55.02% [28] Such educational outcomes have helped Boston become one of the most vibrant cities in the country. As opposed to the mass exodus of people leaving Detroit,

Boston has been steadily growing, with total population increasing from 574,283 in 1990 to 617,594 in 2010,[29] and housing stock growing 8.2% from 2000 to 2010.[30]

Furthermore, Boston is attracting, and retaining, high-wage jobs in the clusters of high technology, financial services, "knowledge industries" (including higher education, consulting, and research firms), health care, and visitor industries (hotels, restaurants, retail, arts, etc.).[31] As noted in one report: "Between 1997 and 2000, employment in these five industry groups grew by 8.4%, to a total of 769,000. Other industries that serve as major suppliers to these five growth sectors—such as engineering, legal services, accounting and advertising—accounted for an additional 220,000 jobs in 2000. Thus, the five major growth sectors and the industries that support them directly account for roughly 48 percent of all employment in the Boston metropolitan area."[32] Indeed, the Boston metro area is experiencing the best of times as "one of the world's leading examples of a regional economy built on intellectual capital, defined by Thomas Stewart as: Intellectual material—knowledge, information, intellectual property, experience—that can be used to

create wealth."[33]

Diamond emphasizes that this pattern of "spatial sorting by skill" is not limited to Detroit and Boston; it is happening all over the country. Given this reality, the strength of Utah's economy, as well as its quality of life for families, depends on it becoming a major center for the college educated and highly skilled. If Utah does not take the budget and policy steps necessary to substantially increase the number of college-educated, highly skilled adults in the state, its economic development will ultimately stall, and families will suffer. Immediate action must be taken to create the educational conditions and outcomes sufficient to attract high paying jobs, as well as community lifestyle amenities, that are crucial to long term economic vitality.

SECTION II
THE CURRENT STATE OF UTAH'S ECONOMIC HEALTH

Utah has recently been recognized by multiple organizations and reports as a state with a robust economy showing strong growth[34] and low unemployment.[35] In addition, Utah has repeatedly been honored as one of the best states for business in the United States.[36] However, in order to understand the economic future that lies ahead for Utah, it is important to conduct a comprehensive physical of the state's economic health, in order to diagnose any illness that may impede its growth. At the same time, it's important to understand the degree to which K-12 and higher education can catalyze substantial improvement where economic illness is present. Investment in high quality public education, at both the K-12 and postsecondary levels, will provide a substantial return, accruing benefit to every Utah family, and driving economic development across the state.

DIAGNOSTIC #1: GROSS DOMESTIC PRODUCT (GDP)

GDP IN UTAH.

While Utah's GDP has been growing at a significant rate (3.8% in 2013), it is still the 19th lowest in the country. [37] Utah's GDP growth to date has been primarily fueled by durable goods manufacturing, finance/insurance, and retail. Industries such as real estate, agriculture, mining, and utilities have not recently performed as well.[38]

THE IMPACT OF EDUCATION ON GDP.

The connection between increased educational attainment and state and national GDP is well documented. According to a Cisco Systems report in 2007, "'years of school attainment at the secondary and higher levels for males age 25 and over has a positive and significant effect on the subsequent rate of economic growth.' This can be interpreted to mean that if the average number of years of upper level schooling for this particular group increases by one year then the rate of economic growth increases by 0.44 percent per year.

These are powerful results since an increase in economic growth of almost half a percent will have a large impact on the total GDP of a country over time. This is one of the reasons that education has been treated as such a positive investment for governments."[39] Similarly, a team of researchers led by Eric Hanushek at Stanford University concluded, that "across 50 countries, each additional year of schooling in a country increased the average 40-year growth rate in GDP by about 0.37 percentage points.[40]

Hanushek points out: "That may not seem like much, but consider the fact that since World War II, the world economic growth rate has been around 2 to 3 percent of GDP annually. Lifting it by 0.37 percentage points is a boost to annual growth rates of more than 10 percent of what would have otherwise occurred, a significant amount."[41]

A more recent report by the Milken Institute found that "adding one year of schooling to the average educational attainment among employed workers with at least a high school diploma is associated with an increase in real GDP per capita of 17.4 percent."[42] Therefore, a significant increase in the number of Utah adults who complete even just one year of postsecondary education after high school would have a dramatic effect on Utah's GDP. Likewise, Utah would see major benefits if it were to increase its high school graduation rate to 90%. The Alliance for Excellent Education asserts that such an improvement would result in annual increase of $55 million to Utah's gross state product.[43]

> *"While Utah's GDP has been growing at a significant rate (3.8% in 2013), it is still the 19th lowest in the country."*

DIAGNOSTIC #2: MEDIAN WAGE

MEDIAN WAGE IN UTAH.

As noted by some economic experts, median wage may be the most appropriate measure of state economic success for several reasons:

> It should be the goal of state development policy to raise the standard of living, which requires both improvements in productivity and that the gains from productivity (how much output is generated by the economy in each hour of work) be shared with workers in the form of higher wages and salaries. Productivity improvements that only enhance profits will benefit only those at the top of the income and wage distributions. And average wages, as opposed to median wages, will rise even when all the gains are captured by those at the top. . . . We use wages rather than income because wages are directly affected by state efforts to increase labor skills while investment income could derive from ownership anywhere in the world. Furthermore, for most of the population, improvements in wages are the principal, if not the only, path to improving income. We do not use growth in jobs or in output (state GDP) because an increase in jobs or in output does not necessarily translate into an improved standard of living; an influx of low-wage jobs can drive down average pay, and an increase in output can occur with little increase in employment or wages if it comes about through substituting capital for labor."[44]

In 2012, the median hourly wage for all occupations in Utah was only $15.80."[45]

THE IMPACT OF EDUCATION ON MEDIAN WAGE.

Three points deserve emphasis here. First, the data is clear that wages substantially increase with higher levels of education. The College Board's Education Pays 2013 report states:

"Over a lifetime, the earnings of an associate's degree recipient are roughly $170,000 higher than those of a high school graduate, while the earnings of a bachelor's degree holder are $570,000 more than those of a high school graduate."

Median earnings of bachelor's degree recipients with no advanced degree working full time in 2011 were $56,500, $21,100 more than median earnings of high school graduates.

Individuals with some college but no degree earned 14% more than high school graduates working full time. Their median after-tax earnings were 13% higher."[46] The difference in earnings is particularly stark when one looks at median earnings across all levels of educational attainment. 2013 data from the U.S. Bureau of Labor Statistics highlights median weekly earnings of American adults age 25 and older:[47]

- Professional degree: $1,714
- Doctoral degree: $1,623
- Master's degree: $1,329
- Bachelor's degree: $1,108
- Associate's degree: $777
- Some college, no degree: $727
- High school diploma: $651
- Less than high school diploma: $472

This differential translates into major long-term income advantages for those who complete a college degree. Over a lifetime, the earnings of an associate's degree recipient are roughly $170,000 higher than those of a high school graduate, while the earnings of

a bachelor's degree holder are $570,000 more than those of a high school graduate.[48] In fact, according to one recent report, "higher education is one of the best investments an individual can make. . . . [T]he returns to earning an associate's, professional, or bachelor's degree exceed 15 percent, and even the average return to attending some college for those who do not earn a degree is 9 percent. In comparison, the average return to an investment in the stock market is a little over 5 percent; gold, ten-year Treasury bonds, T-bills, and housing are 3 percent or less."[49]

Second, the financial return associated with postsecondary education and the gaps in earnings by education level are increasing with time. "The difference between median earnings for women ages 25 to 34 working full time year-round with a bachelor's degree or higher and those in the same age range with high school diplomas rose from 43% in 1971 to 56% in 1991 and to 70% in 2011. The earnings premium for men rose from 25% in 1971 to 56% in 1991 and to 69% in 2011."[50]

Third, as discussed above, the research of Diamond and others indicates that the well-educated tend to congregate, which drives wages up. "The correlation is very strong and there are very large differences between median hourly wages in states with well-educated workforces and hourly wages in states with less-well-educated workforces (as measured by the share of workers who have at least a bachelor's degree). In the 22 states with the least-educated workforces (30 percent or less with a bachelor's degree or more education) [of which Utah is one], median wages hover around $15 an hour, the only exceptions being Alaska and Wyoming. In the three states where more than 40 percent of the population has a bachelor's or more education, median wages are $19 to $20 an hour, nearly a third higher."[51]

"In the 22 states with the least-educated workforces (of which Utah is one), median wages hover around $15 an hour. In the three states with the most-educated workforces, median wages are $19 to $20 an hour, nearly a third higher."

DIAGNOSTIC #3: HOUSEHOLD INCOME

THE IMPACT OF EDUCATION ON GDP.

While Utah household income in 2013 was $59,770,[52] it is only slightly higher now than in it was in1997, when it was $57,938.[53] Utah's 3.3 percent growth in household income from 2012 to 2013 was third highest in the country, behind only Wyoming and Alaska, but this could be attributed to larger numbers of people, including teenagers, working in Utah homes.[54] If Utah's household income again flattens or stalls, as it did over the previous 15 years, it will have many impacts on economic growth and prosperity, from home ownership, to consumer spending, to savings rates.

THE IMPACT OF EDUCATION ON HOUSEHOLD INCOME.

Intuitively, higher median wages translate into higher household incomes. As noted by the Economic Analysis and Research Network: "For a full-time, full-year worker, a median wage of $15 versus $20 an hour means the difference between making $30,000 a year and making $40,000 a year. For a household with one person working full time and one person working half time, it is the difference between making $45,000 a year and making $60,000 a year."[55]

Therefore, college can be the ticket out of poverty for both individuals and families, by raising household income and increasing the likelihood of social mobility. According to The Hamilton Project: "[W] without a college degree a child born into a family in the lowest quintile has a 45 percent chance of remaining in that quintile as an adult and only a 5 percent chance of moving into the highest quintile. On the other hand, children born into the lowest quintile who do earn a college degree have only a 16 percent chance of remaining in the lowest quintile and a 19 percent chance of breaking into the top quintile. In other words, a low-income individual without a college degree will very likely remain in the lower part of the earnings distribution, whereas a low-income individual with a college degree could just as easily land in any income quintile—including the highest."[56]

The bottom line is that higher education is critical to reducing income inequality among families and communities. As a recent article in the New York Times noted:

> Imagine if the United States government taxed the nation's one-percenters so that their post-tax share of the nation's income remained at 10 percent, roughly where it was in 1979. If the excess money were distributed equally among the rest of the population, in 2012 every family below that very top tier would have gotten a $7,105 check.
>
> This is hardly trivial money. But it pales compared to the gap between the wages of a family of two college graduates and a family of high school graduates. Between 1979 and 2012, that gap grew by some $30,000, after inflation.[57]

DIAGNOSTIC #4: UNEMPLOYMENT AND STEM EMPLOYMENT

UNEMPLOYMENT AND STEM EMPLOYMENT IN UTAH.

Utah's unemployment rate is now tied for the second lowest in the country at 3.5 percent, substantially lower than the U.S. unemployment rate of 6.1 percent.[58] While this is certainly a positive development, much of the state's job growth is in low skill, low wage areas such as food service, customer service, and retail sales.[59] No Utah city ranks in the top 20 U.S. metropolitan areas with the highest proportion of their workforce employed in high skill, high wage science and engineering occupations.[60]

According to the National Science Foundation, only 4.56 percent of Utah's workforce is employed in science and engineering occupations, below the national average of 4.58 percent, and substantially unchanged from 2003, when the number was 4.37 percent.[61] The states with the highest percentages of workers in science and engineering occupations in 2012 were Colorado, the District of Columbia, Maryland, Massachusetts, and Virginia.[62]

THE IMPACT OF EDUCATION ON UNEMPLOYMENT AND STEM EMPLOYMENT.

If the recent economic collapse called attention to anything, it is that postsecondary education provides nearly airtight security against layoffs and unemployment. According to the U.S. Bureau of Labor Statistics, unemployment rates in 2013 by educational attainment levels were the following:[63]

- Doctoral degree: 2.2%
- Professional degree: 2.3%
- Master's degree: 3.4%
- Bachelor's degree: 4.0%
- Associate's degree: 5.4%
- Some college, no degree: 7.0%
- High school diploma: 7.5%
- Less than high school diploma: 11.0%

The most recent recession hit the less-well-educated especially hard. "Among both associate degree holders and those with at least a bachelor's degree, the number of employed adults between the ages of 25 and 64 increased between 2007 and 2012, while employment declined for other groups."[64]

Those with STEM credentials have a an even bigger employment advantage. A comprehensive study, released in 2011 by Georgetown University's Center on Education and Workforce, projected that the number of STEM jobs nationally would grow

> *"No Utah city ranks in the top 20 U.S. metropolitan areas with the highest proportion of their workforce employed in high skill, high wage science and engineering occupations."*

by 17 percent between 2008 and 2018, "making it one of the most dynamic occupation clusters in the economy. . . . surpassed in growth rates only by Healthcare occupations."[65] Importantly 65% of the projected STEM jobs will require bachelor's and graduate degrees, but "there will also be over 799,000 job openings available in STEM occupations for workers with less than a bachelor's degree."[66]

The National Science Foundation confirms these projections in its most current report:

> The most recent Bureau of Labor Statistics (BLS) occupational projections, for the period 2010-20, suggest that total employment in occupations that NSF classifies as S&E will increase at a faster rate (18.7%) than employment in all occupations (14.3%). . . . BLS

> also projects that, for the period 2010-20, job openings in NSF-identified S&E occupations will represent a slightly larger proportion of current employment than openings in all other occupations: 39.6% versus 38.3%. Job openings include both growth in total employment and openings caused by attrition.

In addition to S&E occupations, [BLS data] also shows selected other occupations that contain significant numbers of S&E trained workers. Among these, the health care practitioners and technicians occupation, which employs more workers than all S&E occupations combined, is projected to grow at 25.9%, nearly double the rate of growth in all occupations.[67]

DIAGNOSTIC #5: HOME OWNERSHIP AND CONSUMER SPENDING

HOME OWNERSHIP AND CONSUMER SPENDING IN UTAH.

In 2012, the rate of home ownership in Utah dropped to 71.1%, down from 76.2% in 2008 when the recession began, and the lowest rate since 1994.[68] Moreover, overall home sales along the Wasatch Front continue to be slow due to shaky consumer confidence. "Sales of single-family homes in Salt Lake County dropped by 9 percent in the second quarter of 2014, compared with the same quarter last year," which was the "third consecutive quarter of home-sale declines for Utah's most populous county."[69]

"The Alliance for Excellent Education reported that if Utah were to increase its high school graduation rate from 78% to 90%, the state would see an additional $31 million in annual consumer spending, $122 million in additional home sales, and $5.8 million in additional auto sales."

These figures represent what the Salt Lake Board of Realtors call "affordability concerns," as residential home prices have risen in many communities.[70] Utah's Consumer Attitude Index has also been fickle, climbing steadily from October 2013 to April 2014, but then decreasing by 6.6 points from April to May 2014. Importantly, the percentage of Utah residents in May 2014 who expected their household income to be lower six months later increased from 4 percent to 8 percent.[71]

THE IMPACT OF EDUCATION ON HOME OWNERSHIP AND CONSUMER SPENDING.

Given the connection between educational attainment, personal wages, and household income, it stands to reason that individuals and families with higher levels of education are more likely to be confident in their income potential, and translate such confidence into home and consumer purchases. In fact, nationally the home ownership rate for those with a bachelor's degree or higher is 75 percent, compared to 65 percent for those with a high school degree or some college.[72]

A study that used the National Longitudinal Survey of Youth 1979 to examine home ownership patterns from 1988 to 2008, found: "In 1988, college graduates owned homes at slightly lower rates than those with some college and those who completed high school but did not go on to college. In all years after 1988, however, those who completed college owned homes at higher rates than the other groups, with the size of the differences increasing through 1996."[73]

Higher levels of education, together with the accompanying rises in income, also lead to increased consumer confidence and spending. The Alliance for Excellent Education reported that if Utah were to increase its high school graduation rate from 78% to 90%, the state would see an additional $31 million in

annual consumer spending, $122 million in additional home sales, and $5.8 million in additional auto sales.[74]

DIAGNOSTIC #6: RESEARCH AND DEVELOPMENT PERFORMANCE

RESEARCH AND DEVELOPMENT PERFORMANCE IN UTAH.

According to its 2014 report, the National Science Foundation ranks Utah 17th in the United States for total R&D performance, including all in-state R&D performance of the business sector, universities and colleges, federal agencies, federally funded research and development centers, and federally funded nonprofit R&D.[75] Importantly, R&D expenditures cluster and "sort" in ways that underscore Diamond's research. "In 2010, the 10 states with the largest R&D expenditure levels accounted for about 62% of U.S. R&D expenditures that can be allocated to the states: California, Massachusetts, Texas, Maryland, New Jersey, New York, Washington, Illinois, Michigan, and Pennsylvania. California alone accounted for 22% of the U.S. total, almost 4 times as much as Massachusetts, the next highest state. The top 20 states accounted for 84% of the R&D total; the 20 lowest states accounted for around 5%."[76]

THE IMPACT OF EDUCATION ON RESEARCH AND DEVELOPMENT PERFORMANCE.

The effect of increasing the number of Utah residents with bachelor's, professional, and doctoral degrees would have a substantial effect on the state's ability to attract, and retain, both R&D dollars and the high-wage "knowledge industry" jobs that inevitably follow.

This happens in two ways. First, the cultivation of human capital that occurs as Utah colleges and universities produce more talented students with degrees will lead to a culture that not only values research and development, but that attracts interest and R&D money to the state: As Richard Florida of Carnegie Mellon University states: "The most critical contribution of the university to economic development is talent. Talent is the key resource of the knowledge economy. . . . Smart people do not necessarily respond to monetary incentives alone, they want to be around other smart people. . . . The fact is that good people attract other good people, and places with lots of good people attract firms that want access to talent, creating a self-reinforcing cycle of growth."[77]

Second, increasing the pool of college alumni who want to stay in Utah will lead to more transfer of research from the universities to the private sector. Irwin Feller of Penn State notes: "Industrial representatives have repeatedly stated that universities' primary contribution to technological innovation lies in the training of students. . . . Students are a means by which new scientific findings and technologically relevant knowledge are transferred from campus to firm."[78]

Nowhere is this more apparent than in the Boston metro area: "[M]ore important than the universities' contributions to the venture industry's financial capital, however, is their contribution to its human capital. Since its birth in the 1940's, the region's venture capital community has looked to the local universities as their primary source of talent. In 2001, for example, 68 out of 135 senior managers at the Boston area's 25 largest venture capital funds were graduates of one or more of the [area's] eight research universities. The presence of a large cadre of local graduates among the region's venture capital firms facilitates the translation of university research into new businesses."[79]

SECTION III

A VISION AND FIVE-YEAR ACTION PLAN FOR PUBLIC EDUCATION TO MOVE UTAH FROM LAGGARD TO LEADER

As noted above, Utah enjoys notable national rankings on lists related to business climate, unemployment, and other economic measures. However, Utah's rankings on educational quality and effectiveness are less than desirable. For example, while CNBC recently rated Utah as the third best state in the country for business, the same list ranked Utah's education system 46th in the country.[80]

Similary, the U.S. Chamber of Commerce recently released its annual "Leaders and Laggards" report card on K-12 educational effectiveness, and gave Utah a grade of C for both academic achievement and academic achievement for low-income and minority students. According to the report: "Student performance in Utah is middling. The state hovers around the national average in the percentage of 4th and 8th graders at or above the proficient level on the NAEP reading and math exams."[81] The most troubling aspect of this report is that it gives Utah a D grade for its progress since 2007 in addressing the academic achievement of low-income and minority students.[82]

At the same time, the U.S. Chamber gives Utah an A on "Return on Investment," noting that "[s]tudent achievement in Utah is very high relative to state spending after controlling for cost of living."[83]

Therefore, a substantial investment in public and higher education will produce outstanding returns for the state. It is time for a clear and well-funded strategic plan that will substantially improve Utah's achievement outcomes, and bring the state into the educational, as well as the economic, elite.

It is a given that any education strategy in Utah must, without compromise, provide growth funding that adequately addresses rapidly rising student enrollments. Utah's public school enrollment in 2013-2014 was 612,551, a two percent increase over the previous year.[84]

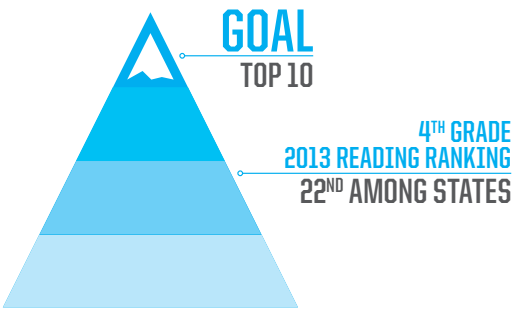
Charter school enrollment also rose by eight percent from 2012-2013 to 2013-2014.[85] According to the National Center for Education Statistics, Utah's public school enrollment is projected to increase by 18 percent from 2011-2012 to 2023-2024, behind only Nevada (22%) and Arizona (20%).[86]

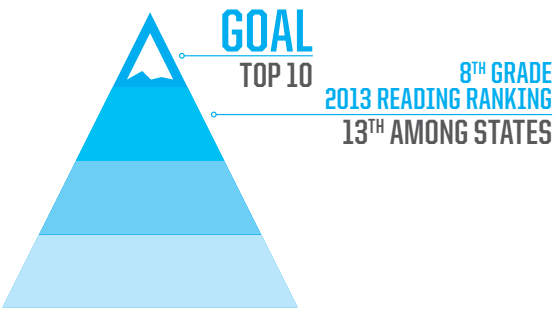
A similar dynamic is occurring in Utah's institutions of higher education. The Utah State Board of Regents predicts that enrollments at Utah's public colleges and universities will grow approximately 2.5 percent per year for the next nine years, resulting in a total of 223,000 students by 2023.[87] It is anticipated that the Utah Legislature will provide funding for facilities, staff, technologies, and other infrastructure needed to keep pace with such growth at all levels of Utah's public education system.

The action plan presented here goes well beyond growth because excellence in education will not occur simply by enrolling more students. If Utah is to have a truly vibrant economy, that attracts high wage jobs and provides real prosperity for Utah families, Utah must invest in specific strategies that will ensure significant gains on key student achievement outcomes in both K-12 and higher education.

READING GOAL

UTAH WILL RANK AMONG TOP 10 STATES FOR 4TH AND 8TH GRADE READING





IMPROVE READING PERFORMANCE WITH

K-3 READING CURRICULUM • PROFESSIONAL LEARNING COMMUNITIES
VOLUNTARY PRE-SCHOOL • COMMUNITY SCHOOLS
SUPPORT FOR AT RISK STUDENTS • OPTIONAL FULL-DAY KINDERGARTEN

K-12 ENGLISH/LANGUAGE ARTS ACHIEVEMENT

Utah fourth grade students tied for 22nd (with Kansas, Nebraska, Montana, and Rhode Island) on the 2013 National Assessment of Educational Progress (NAEP) reading test, and Utah eighth grade students tied for 13th (with Idaho and Kentucky).[88] Less than half of Utah students in grades 3-11 scored at the proficient level or above in English/Language Arts on the pilot administration of the new SAGE tests, which are tied to Utah's Core standards.[89]

OBJECTIVE 1: UTAH WILL BE IN THE TOP 10 STATES ON THE 4TH AND 8TH GRADE NAEP READING ASSESSMENTS AND SHOW SUBSTANTIAL GROWTH ON STATE ASSESSMENTS TIED TO STATE CORE ENGLISH/LANGUAGE ARTS STANDARDS.

College- and career-readiness begins with the ability to read fluently, and therefore continued focus must be placed on reading achievement in all grades. At the same time, the Legislature must remain committed to high standards, and resist the temptation to lower standards in order to increase student proficiency rates, particularly on state assessments. The Legislature and State Board should advocate higher standards and more rigorous assessments. The fact that only 63% of Utah 11th graders can meet the ACT's College Readiness Benchmark for English, and only 43% of 11th graders meet the College Readiness Benchmark for reading, [90]

CALL TO ACTION: $65 MILLION OVER FIVE YEARS.

We recommend a total investment of $60 million over five years to support reading instruction and interventions for Utah elementary and middle school students. This investment includes A) $5 million each year ($25 million) for K-3 reading curricula

and support; B) $1 million each year ($5 million) to support teacher collaboration and professional learning communities in elementary schools; C) $3 million each year ($15 million) to create or expand voluntary pre-school programs, community schools, and other innovative public-private partnerships to support school readiness and success for at-risk students; and, D) $4 million each year ($20 million) to expand voluntary full-day kindergarten for at-risk students.

First, it is imperative that literacy instruction in all Utah schools, in all grades, be based on rigorous college-ready standards. Such standards will provide meaningful targets for the substantial investment that should be made in evidence-based reading curricula (and program supports), curricula with a proven track record of producing significant gains in student reading achievement, particularly for students in grades K-3. The Utah State Board of Education and local school boards should be required to demonstrate that any purchased curricula is aligned with such standards and supported by solid research and data.

Second, funding should be provided to help elementary schools build the structures and skills needed for effective collaboration and data analysis. Schools that use collaborative teaming, inquiry cycles, and professional learning communities to regularly examine student data, share best practices, and implement instructional changes to help struggling students, are much more effective at improving student achievement.[91] Funding for such data-driven collaboration at the school level is a necessary complement to stand-alone professional development delivered at the district or state levels Utah must also lay a better foundation for literacy success in the early grades.

The footings for this foundation should be provided by ensuring that as many at-risk children as possible have access to high-quality, voluntary preschool programs. An October 2013 report by a group of scholars from New York University, the University of Michigan, Columbia University, the University of North Carolina, the University of Chicago, and the University of Wisconsin, Madison noted:

> Robust evidence suggests that a year or two of center-based ECE for three-and four-year-olds, provided in a developmentally appropriate program, will improve children's early language, literacy, and mathematics skills when measured at the end of the program or soon after. These findings have been replicated across dozens of rigorous studies of early education programs, including small demonstration programs and evaluations of large public programs such as Head Start and some state Pre-K programs. Combining across cognitive (e.g., IQ), language (e.g., expressive and receptive vocabulary) and achievement (e.g., early reading and mathematics skills) outcomes, a recent meta-analysis including evaluations of 84 diverse early education programs for young children evaluated between 1965 and 2007 estimated the average post-program impact to be about .35 standard deviations. This represents about a third of a year of additional learning, above and beyond what would have occurred without access to preschool.[92]

The same report also emphasized the substantial return on investment produced by early childhood programs:

> Rigorous efforts to estimate whether the economic benefits of early childhood education outweigh the costs of providing these educational opportunities indicate that they are a wise financial investment. Available benefit-cost estimates based on older, intensive interventions, such as the Perry Preschool Program, as well as contemporary, large-scale public preschool programs, such as the Chicago Child-Parent Centers and Tulsa's

> preschool program, range from three to seven dollars saved for every dollar spent.[93]

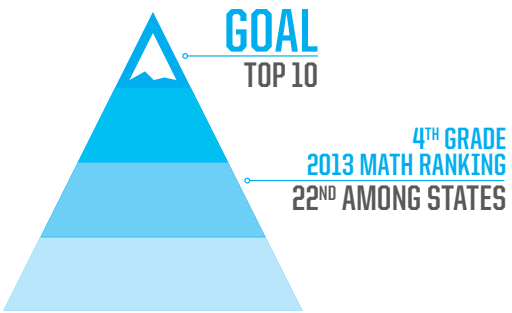
More recently, Chester Finn, Jr. at the Thomas Fordham Institute, a conservative think tank, noted that the Copenhagen Consensus Center gave its highest rating, among international education strategies, to preschool, "which costs little and has lifelong benefits by getting children started on learning."[94] Finn emphasized: "Preschool is not like a polio shot or smallpox vaccination. It does not inoculate anybody against anything. It's a stage in the education process. Properly done, it can be a valuable stage—readiness for Kindergarten does matter in relation to success in the early grades—and the right kind of preschool program can give a needed leg up to kids who aren't getting such preparation at home."[95]

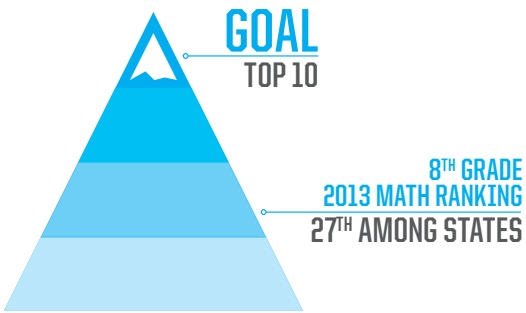
Such early childhood programs are most effective when they actively involve parents, and leverage the existing resources of adults throughout the community. Initiatives such as the "community schools" model, which has been implemented by the United Way of Salt Lake in several Utah school districts, connect nonprofits, community organizations, and government agencies to provide comprehensive academic, social, and health services for students.[96] Bringing together the expertise and resources of multiple partners in a data-driven social impact strategy, community schools can effectively improve student achievement by addressing the numerous family, health, nutrition, and socioeconomic challenges that students in poverty bring to school. Similarly, expanding and strengthening voluntary full-day kindergarten programs, especially for Utah's most disadvantaged children, should be a priority. Recent research is clear that students in full-day kindergarten perform significantly higher on tests of reading and math achievement at the end of the school year in comparison with similar students in half-day kindergarten.[97] This is particularly true in high quality kindergartens that challenge students with advanced, rigorous content.[98]

Yet investment in early childhood and kindergarten programs alone will not be sufficient. As described below in the recommendations for improved math achievement, investment in technology-based, reliable assessments and differentiated interventions for struggling students will be critical to ensure that the reading gains achieved in pre-K and kindergarten do not evaporate as children start moving through the early elementary grades.

MATH GOAL

UTAH WILL RANK AMONG TOP 10 STATES FOR 4TH AND 8TH GRADE MATH





IMPROVE MATH PERFORMANCE WITH

TECHNOLOGY DEVICES • TECHNOLOGY-BASED MATH ASSESSMENT TOOLS
ENDORSEMENTS AND TECHNOLOGY TRAINING FOR TEACHERS
PROFESSIONAL LEARNING COMMUNITIES • STEM ENDORSEMENTS FOR TEACHERS

K-12 MATH ACHIEVEMENT

Utah 4th grade students tied for 22nd (with Connecticut, Hawaii, Nebraska, and Delaware) on the 2013 NAEP math test; Utah 8th grade students tied for 27th (with Rhode Island and Oregon). [99] Moreover, Utah students struggled on the first administration of the new SAGE tests in math; student proficiency levels ranged from 29 to 47 percent in grades 3-11. [100] This mediocre performance creates ripple effects throughout the education system and the economy. Not the least of these effects is the weak interest in STEM majors and careers expressed by Utah high school students. When 11th grade students take the ACT, they are prompted to choose a college major they plan to study, as well as their desired career choice from a list of 294 major and occupational titles. Approximately one-third (93/294) of these titles are related to STEM, i.e., majors and occupations that fall into one of four key areas: Science, Computer Science and Mathematics, Medical and Health, and Engineering and Technology.[101]

According to the most recent ACT data for Utah, only 7,287 high school students (out of 34,514 ACT takers) have an expressed interest in STEM. That is, only 21.3% of Utah high school students expressed interest in a college STEM major or STEM related career. [102] Only 3,352 of Utah high school students have a "measured" interest in STEM, meaning that only 9.7% of students have an "inherent interest in a STEM major or occupation, [but] have not expressed an interest in pursuing a STEM major.".[103]

Indeed, the weak interest and ability of Utah students in STEM content areas is highlighted

by the College Board's 2014 Advanced Placement data. Only 12.3% of Utah's graduating high school students passed one or more of the ten AP STEM tests in Biology, Calculus AB, Calculus BC, Chemistry, Computer Science A, Environmental Science, Physics B, Physics C-Mechanics, Physics C-Electricity and Magnetism, and Statistics.[104]

Even more disturbing is the fact that only two states (Maryland and Virginia) had more than 1% of high school graduates who passed the AP Computer Science exam in 2014, and Utah was not one of them.[105] As a prominent education commentator pointed out:

> These results are so disconcerting because the computer science field is lucrative and growing (in addition to being critical for national security, competitiveness, entrepreneurial energy, and offering many rewarding and flexible jobs). The Bureau of Labor Statistics predicts a 30% increase in demand for software developers over the next half-dozen years, a job for which average annual pay was over $90,000 in 2010. People are going to fill those jobs–but we're not doing much to make sure they'll be American youth. That means firms will either find ways to import those who can do the work or export those jobs to places where skilled employees are plentiful. Either scenario is a loss for our kids and our nation.[106]

"According to the most recent ACT data for Utah, only 7,287 high school students (out of 34,514 ACT takers) have an expressed interest in STEM. That is, only 21.3% of Utah high school students expressed interest in a college STEM major or STEM related career."

Unfortunately, many students who express strong interest in math and science in elementary school begin losing interest in middle school. This is especially true of girls.[107] "Often using the metaphor of the 'leaky pipeline,' the prevailing view of the STEM career progression is that young children initially have a high level of interest in science and mathematics, but that, as they move through the educational system, interest is lost at every stage, particularly among females." [108]

The consequences of this leaky pipeline have a profound impact on regional economic prosperity; not only do STEM majors enjoy better job prospects and higher earnings, on average, than non-STEM majors,[109] they tend to be the nucleus of highly educated communities. As one recent report noted: "It is plausible that occupations in the three key categories–executives and managers; business services; and science, engineering, and technology–have spillover effects that promote and attract educated workers in other occupations as well." [110]

OBJECTIVE 2: UTAH WILL BE IN THE TOP TEN STATES ON THE 4TH AND 8TH GRADE NAEP MATH ASSESSMENTS AND WILL SHOW SUBSTANTIAL GROWTH ON STATE MATH ASSESSMENTS TIED TO STATE CORE MATH STANDARDS.

Utah must be among the nation's leaders in math achievement if it is going to substantially increase the number of Utah residents completing college, pursuing STEM majors, and qualifying themselves for high skill, high wage STEM jobs. Utah's core math standards should be rigorous, aligned to college- and career-ready expectations, and paired with assessments that accurately measure students' abilities to solve problems.

CALL TO ACTION: $42.5 MILLION OVER FIVE YEARS.

To address this need, we recommend a targeted investment of $42.5 million over five years, funding the following initiatives: A) $1 million each year for

five years ($5 million) for technology devices in K-3 classrooms; B) $1 million each year for five years ($5 million) for technology-based math assessment tools in grades K-8); C) $2 million each year ($10 million) to enable teachers in grades 4-6 to earn math endorsements and receive technology training; D) $2 million each year ($10 million) to support teacher collaboration and professional learning communities devoted to math achievement in grades 4-8; E) $1.5 million each year ($7.5 million) to provide STEM endorsements for secondary math teachers; and, F) $1 million each year ($5 million) to support professional learning communities and professional development for high school (grades 9-12) math teachers.

Regarding technology, smart investment needs to be made in classroom devices to encourage, and assist, teachers and students in applying math to practical problem solving and skills. Properly implemented, so-called "1:1" initiatives do show promise. [111] At the same time, such initiatives, if poorly planned or executed, may also be recipes for disaster, as schools in Los Angeles and New Jersey have recently discovered.[112] Therefore, given the major expense of such initiatives, more gradual technology investment is recommended, enough to provide several devices per class to help teachers differentiate instruction, deliver blended learning experiences, and provide students with opportunities to learn practical math and technology skills such as coding and data analysis.

Second, investment is needed in effective, technology-based math assessment tools. Rapid assessment, "defined as systems that provide nonjudgmental testing feedback, immediately after each test, 2 to 5 times per week to students and teachers, regarding student performance in subjects such as math or reading,"[113] is one of the most cost-effective education reform strategies available. Explaining the academic gains that can be realized through this strategy, Stuart Yeh from the University of Minnesota noted:

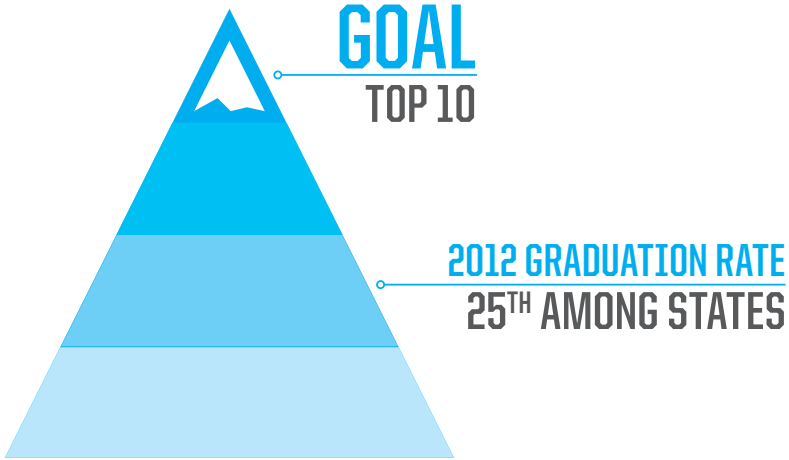
> A meta-analysis of 21 experimental studies involving testing found that students who were tested 2 to 5 times per week outperformed students who were not frequently tested, with an average effect size of 0.7 standard deviations . . . equivalent to raising the achievement of an average nation such as the United States to the level of the top five nations. When teachers were required to follow rules about using the assessment information to change instruction for students, the average effect size exceeded 0.9 SD, and when students were reinforced with material tokens in addition to the frequent testing, the average effect size increased even further, exceeding 1.1 SD.[114]

With respect to the cost-effectiveness of rapid assessment compared to other popular reform strategies, Yeh concluded:

> Comparisons of effect sizes suggest that rapid assessment is potentially a more promising approach for improving student achievement than increases in the preexisting pattern of spending, voucher programs, charter schools, or testing-based accountability. The research findings presented . . . suggest that rapid assessment is 4 times as effective as a 10% increase in per-pupil expenditure, 6 times as effective as vouchers, 64 times as effective as charter schools, and 6 times as effective as test-based accountability. The cost-effectiveness calculations suggest that achievement gains per dollar from rapid assessment are 193 times the gains that accrue from preexisting patterns of educational expenditures, 2.424 times the gains from vouchers, 23,166 times the gains from charter schools, and 57 times the gains from increased accountability.[115]

GRADUATION GOAL

UTAH WILL RANK AMONG TOP 10 STATES FOR HIGH SCHOOL GRADUATION RATE



INCREASE HIGH SCHOOL GRADUATION RATES WITH

ADDITIONAL COUNSELORS AND MENTORS • COUNSELOR TRAINING • STUDENT ADVOCATES
ACADEMIC COACHES • TUTORS

Third, targeted investment to build the skill and capacity of math and science teachers is critical. In 2012, only 73% of high school math teachers nationwide had an undergraduate or graduate degree in math or math education, and only 82% of high school science teachers had a degree in science, engineering, or science education.[116] The situation is even more dire in elementary schools, with only 4%-5% of math and science teachers holding a degree in math or science.[117]

This skills gap could be addressed through funding for math endorsements for elementary teachers (grades 4-6), STEM endorsements for secondary math teachers; and collaborative, data-driven professional learning communities, like those discussed above, that build teacher capacity to examine data and adjust instruction to meet student needs. Investment in ongoing professional development for teachers, in all grades, to improve math and science instruction, is key to both teacher effectiveness and student engagement.

HIGH SCHOOL GRADUATION RATE AND COLLEGE READINESS

Currently Utah's high school graduation rate stands at 81%, which is slightly better than the 2011-2012 national average of 80%, the most recent year for which national data is available.[118]

College readiness of Utah students can be measured by the percentage of students who meet the ACT's College Readiness Benchmark Scores on English (18), Math (22), Reading (22), and Science (23).[119] According to ACT's 2014 report, Utah's average ACT composite score of 20.8 was the best of the twelve

states that, like Utah, require all 11th grade students to take the ACT.[120] However, only 24 percent of Utah 11th graders met all four College Readiness Benchmarks.[121]

OBJECTIVE 3: UTAH WILL BE IN THE TOP TEN STATES ON GRADUATION RATE, AND WILL SHOW SUBSTANTIAL GROWTH ON THE PERCENTAGE OF HIGH SCHOOL STUDENTS DEMONSTRATING COLLEGE READINESS ON THE ACT.

If all other states remained constant (as of 2012, the most recent year for which data are available), Utah would need to raise its graduation rate to 86% to be in the top ten states: Iowa (89%), Nebraska (88%), Texas (88%), Vermont (88%), Wisconsin (88%), North Dakota (87%), Tennessee (87%), Indiana (86%), Missouri (86%), New Hampshire (and New Jersey) (86%).[122] Significant growth in the college readiness of Utah students is also needed so that more students are academically prepared for postsecondary education, and need less remedial education when they arrive on Utah's college campuses. In 2009-2010, 26% of USHE students age 17-19 took a remedial class in order to be prepared for college-level, credit-bearing coursework.[123] At some institutions, the rate is even higher.[124]

CALL TO ACTION: $20 MILLION OVER FIVE YEARS.

We recommend that a total of $20 million be invested to improve Utah's graduation rates and ACT performance, by funding: A) $3 million each year for five years ($15 million) to hire additional counselors and mentors for middle and high school students, and provide targeted professional development to counselors on issues related to college access and success; and B) $1 million each year for five years ($5 million) for middle and high school advocates, academic coaches, and tutors.

First, Utah should expand the prevalence and influence of secondary guidance counselors and support staff to assist students at risk of dropping out. A wealth of research supports the practice of implementing highly personalized, intensive interventions to keep students on track to graduation, and one of the most effective of these practices is the formation of "[s]trong relationships with adult counselors who pay a great deal of attention to students."[125]

In addition, recent research concludes that guidance counselors have a significant impact on high school graduation and college enrollment rates. A study conducted by the College Board, which analyzed data from the national Schools and Staffing Survey, found that "an additional high school counselor is predicted to induce a 10 percentage point increase in four-year college enrollment."[126] Discussing the policy implications of their findings, the authors noted:

> The addition of counselors to a high school should provide greater time for counselors to work with more students, or for counselors to allocate more time for students. If the student demand for counselors has already been met, an additional counselor can generate more demand by proactively targeting students who might not otherwise have thought about college.
>
> Additionally, having more counselors in a school translated into greater opportunities for a student to be matched with a counselor who can ably address that student's specific needs. Counselors wear many hats and are expected to nimbly resolve a variety of issues. If the additional counselor's skill set is different from what already exists among the counseling staff, then an increased breadth and depth of counseling skills resulting from additional staff could be at least partially responsible for a jump in positive student outcomes.[127]

It should also be noted that guidance counselors have a substantial impact on the rates at which disadvantaged students enroll in college. As one researcher concluded: "[A]fter controlling for other important predictors of postsecondary enrollment, model results showed that students who visited

their counselor for college-related information were more likely to enroll in postsecondary education and at four-year institutions in particular. Results also demonstrated that the influence of school-based college counseling varied based on socioeconomic status, and that low-SES students were likely to yield the most benefit from their relationship with a school counselor."[128]

The quality of guidance counseling must also be addressed. The Utah System of Higher Education is already leading out on efforts to better prepare school counselors to lead on issues related to college access, since college access "was identified by counselors as the area in which they most need additional training, according to a 2012 national survey by the National Center for School Counselor Advocacy at the College Board."[129] Expanding such efforts will ensure that both new and existing counselors will focus on the right strategies and produce results.

At the same time, in recognition of the reality that even with more reasonable case loads, it will be challenging for guidance counselors to have frequent and meaningful interaction with every student, investment should also be made in other strategies to reach secondary students at risk of not completing high school. For example, one evidence-based strategy is the assignment of adult advocates to students most likely to drop out:

> Students at risk of dropping out often have significant personal, family, and social barriers that interfere with the ability to go to school and do well. Research suggests that students who have ongoing relationships with adults feel a greater sense of school membership, attachment, and involvement. Additional benefits of adult-student relationships include reduced risky behaviors, reduced absentee rates, improved grades, and improved communication and social skills. The adult advocate helps students overcome these barriers by assisting the student in addressing academic, personal, and emotional needs. The advocate can model positive and respectful behavior and offer guidance, stability, and assistance in making intelligent choices.[130]

Investment in such "adult advocates," including academic tutors,[131] graduation coaches,[132] and college outreach mentors such as the Utah College Advising Corps[133] is an essential complement to the funding for additional certified guidance counselors.

K-12 TEACHER COMPENSATION AND PROFESSIONAL DEVELOPMENT

While salary is not the only factor contributing to a quality teaching corps, it is an important ingredient, and one that is tracked by both educators and policymakers. National data (Washington Post) from 2013 place Utah 35th in the country for the average salary of public elementary and secondary teachers at $49,393, well below the national average of $56,383.[134]

This data point stands out even on Utah's positive rankings for business climate. While Utah was recently named as the top state for business for the third year in a row by the Pollina Corporate Top 10

"The Washington Post reported national data from 2013 that place Utah 35th in the country for the average salary of public and secondary elementary teachers at $49,393, well below the national average of $56,383."

Pro-Business Study, the report gave Utah a grade of D for average teacher compensation.[135]

In addition, ongoing professional development is essential to the development, and retention, of outstanding teachers.[136] Induction and mentoring programs for new teachers are especially important.[137] Although the Utah Legislature did provide substantial funding for professional development in years past, such funding suffered dramatic cuts during the recession. The Quality Teaching Block Grant, which was funded in the amount of $77,615,641 in fiscal year 2009-2010, and distributed to school districts for professional development activities with teachers, was completely eliminated in fiscal year 2010-2011 and has not been restored.[138]

Rather than restore professional development funding, the Utah Legislature in 2014 passed a bill allowing local school districts to use up to four instructional days in the 2014-2015 academic year for teacher professional development.[139] This is not an effective strategy because instructional time for students is eliminated, and four days of professional development annually is insufficient to fully develop teacher capacity. Both the number of instructional days and professional development activities need additional funding.

OBJECTIVE 4: UTAH WILL SHOW REAL GROWTH IN TEACHER COMPENSATION AND DEMONSTRATE SUSTAINED COMMITMENT TO PROFESSIONAL DEVELOPMENT.

Utah should be among the nation's leaders in terms of its commitment to highly skilled public school teachers and administrators, particularly as schools are faced with the challenges of implementing numerous changes (e.g., new standards, new curriculum, new instructional strategies, and new assessments) with more accountability, all within the context of a more diverse and challenging student population. Utah should commit to raising teacher compensation to the national average, and innovative, differentiated compensation structures, in order to build a quality teaching force that is appropriately matched to student needs.

In addition, Utah should commit to providing appropriate professional development opportunities for all teachers to support them in the implementation of needed classroom changes, from standards to instructional strategies to assessment to technology. Utah cannot expect teachers to learn myriad new skills and strategies without providing them with the time and resources to do so.

CALL TO ACTION: INVESTMENT OF $280 MILLION OVER 5 YEARS.

To accomplish this, we recommend an ongoing investment of A) $50 million each year for the next five years (a total of $250 million) for teacher compensation and quality instruction, and B) $6 million each year for the next five years (a total of $30 million) for new teacher induction programs and professional development priorities identified by the Utah State Board of Education and local school districts. This investment will address much more than basic compensation adjustments; it will be used to support critical training on new standards, assessments, evidence-based instructional strategies, effective instruction for diverse populations, educational technology, and school improvement strategies based on the collection and analysis of data to improve both the quality of teaching and student learning outcomes.

HIGHER EDUCATION COMPENSATION

Salaries at several of Utah's public colleges are in the bottom 20th percentile of the country or lower.[140] Low salaries are due to several factors, including the prevalent use of lower-paid adjunct professors at some institutions like Salt Lake Community College, as well as budget cuts that were made during the recession.[141]

OBJECTIVE 1: UTAH'S HIGHER EDUCATION COMPENSATION WILL BE COMPETITIVE AND ATTRACT HIGH QUALITY INSTRUCTORS AND RESEARCHERS.

In order to attract and retain exemplary instructors and researchers at Utah's institutions of higher education, Utah will develop and fund compensation policies to improve the quality of both teaching and research, and that are clearly linked, through merit-based policies, to faculty performance. Utah will be known as one of the nation's leaders in compensating faculty for specific outcomes in both the classroom and research.

CALL TO ACTION: $145 MILLION OVER FIVE YEARS.

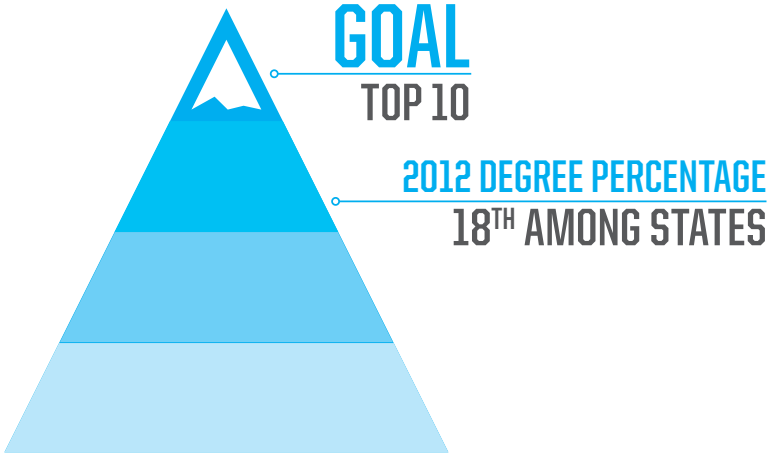
We recommend A) an investment of $5 million each year for five years ($25 million) to fund innovations that will strengthen merit-based compensation practices, and improve the quality of instruction and research, at Utah's public institutions of higher education. Many American universities are beginning to rethink how college students are taught, and how they learn, and investment is needed to prompt Utah colleges to do the same.

Innovative, and effective strategies that might be pursued include, but are not limited to, peer instruction,[142] blended learning,[143] international study,[144] and competency-based education.[145] Utah's colleges and universities must have real incentives to move beyond traditional lecture-based instruction and change teaching practices to build both student engagement and skill.

In addition, we recommend B) an investment of $24 million each year for five years ($120 million) to fund enhanced compensation for Utah's public colleges and colleges of applied technology.

DEGREES GOAL

UTAH WILL RANK AMONG TOP 10 STATES FOR PERCENTAGE OF ADULTS WITH A POSTSECONDARY CERTIFICATE OR DEGREE



INCREASE POSTSECONDARY CERTIFICATES AND DEGREES WITH

REWARDS FOR COLLEGES THAT INCREASE COMPLETION RATES • ACCESS AND OUTREACH INITIATIVES FOR UNDERSERVED STUDENTS • PROGRAMS THAT MEET HIGH-WAGE, HIGH-DEMAND WORKFORCE NEEDS • FINANCIAL AID AND SCHOLARSHIPS FOR LOWER & MIDDLE INCOME STUDENTS

According to the Lumina Foundation (which relied on U.S. Census data from the 2012 American Community Survey), Utah is currently ranked 18th in the United States for the percentage of working age adults (age 25-64) with at least an associate's degree, at 41.4%, which is slightly above the national average of 39.4%.[146] Only 41.5% of young adults (age 25-34) in Utah hold at least a two-year college degree, which is just slightly above the national average of 40.9%.[147]

The reality is that many Utah residents start college but never finish. Three of the ten metro areas nationally with the highest percentages of adults with some college but no degree are Utah cities.[148] The national breakdown is the following:[149]

U.S. Metro Areas With the Greatest Share of Some College-Educated Adults (Some College, No Degree)

- Provo-Orem, Utah (29.1%)
- Ogden-Clearfield, Utah (27.9%)
- Boise-Nampa, Idaho (27%)
- Sacramento-Arden-Arcade-Roseville, California (26.5%)
- Colorado Springs, Colorado (26%)
- Wichita, Kansas (26%)
- Tucson, Arizona (26%)
- Oklahoma City, Oklahoma (25.9%)
- Virginia Beach-Norfolk-Newport News, Virginia (25.8%)
- Portland-Vancouver-Hillsboro, Oregon (25.8%)
- Salt Lake City, Utah (25.8%)
- Phoenix-Mesa-Glendale, Arizona (25.5%)

OBJECTIVE 2: UTAH WILL RANK IN THE TOP TEN STATES FOR THE PERCENTAGE OF WORKING AGE ADULTS (25-64) WITH A POSTSECONDARY CERTIFICATE OR DEGREE.

If other states remained constant in the percentage of adults with associate's degrees or higher, Utah would have to increase its percentage to 45.3% to be in the top ten: Massachusetts (50.5%), Minnesota (47.7%), Colorado (47.5%), Connecticut (47.5%), Vermont (47.0%), New Hampshire (46.7%), New Jersey (45.8%), North Dakota (45.6%), Maryland (45.5%), and Virginia (45.3%).[150]

CALL TO ACTION: $85 MILLION OVER FIVE YEARS.

We recommend a total investment of $80 million over five years to dramatically improve the number of Utah adults with at least an associate's degree, as follows: A) $20 million in the first year with an additional $5 million for four years ($40 million) to reward institutional performance for increasing graduation (completion) rates; B) $3 million each year over five years ($15 million) for evidence-based, effective access and outreach initiatives to increase the participation and completion rates of underserved students; and C) $6 million each year over five years ($25 million) to increase certificate and degree programs that meet Utah's high wage, high demand workforce needs.

First, investment is needed to support both effective retention strategies designed to help those who enroll in college stay the course, and intervention strategies to help adults who start college, but drop out. In 2013, the Board of Regents initiated a strategy to increase completion rates among students based on the "Game Changers" initiative developed by Complete College America. This initiative includes performance funding, structured scheduling, and guided pathways to success.[151] Targeted funding to sustain this initiative will allow the Board to continue supporting USHE institutions in the implementation of these effective retention practices.

Smart investment in this area would also sustain institutional performance-based funding to incentivize campus-wide efforts to improve graduation rates. Such efforts, initiated on a small scale in Utah for FY 2013-2014, are already underway in several states.[152]

With an appropriate investment, Utah would be able to scale or replicate successful retention and completion programs in other states, such as the one in Indiana which, with funding from a $1 million Lumina Foundation grant, "will provide technical assistance for a program . . . designed to keep students on track through scheduling, advising and structured degrees - so more students graduate on-time without taking on more debt."[153] Utah could also use targeted funding for an expedited degree initiative similar to the one recently announced by the University of South Carolina, which will reduce the time required for students to earn bachelor's degrees in 45 majors to three years.[154] A similar initiative is being rolled out by the University of Iowa.[155]

Second, investment should be targeted at successful outreach and access initiatives designed to get more first-generation, and under-represented, students into college. This funding could be used to many of the programs that currently exist, including, but not limited to: Utah Scholars,[156] the Utah College Advising Corps,[157] Latinos in Action,[158] UVU Outreach Initiatives for Latino, Native American, and Polynesian students,[159] Weber State University's "Dream Weber" initiative,[160] and Advancement Via Individual Determination (AVID).[161]

Third, and finally, funding should be prioritized to help Utah's colleges and universities align certificate and degree programs with Utah's most pressing workforce needs, rewarding them for high performance in recruiting, retaining, and graduating students in high demand, high wage majors, particularly in STEM fields. Incentives should be created to spur Utah colleges to allocate more

resources, and better systems, toward producing more graduates prepared to fill all of Utah's high-wage, high-demand "five star jobs."[162]

AFFORDABILITY OF COLLEGE AND FINANCIAL AID

Unfortunately, when Utah's economy, along with the national economy, derailed between 2007 and 2013, state funding for higher education was cut substantially, and Utah's public colleges hiked tuition in response, making college much more expensive for students and leaving many struggling to afford the cost.[163] The consequence of a steady decline in state support for higher education, coupled with significant increases in enrollment, is that the average Utah college student now pays $1,131 more per year than they were at the beginning of the recession,[164] while the state is supporting the average student with $1,513 (24%) less.[165] This situation is compounded by the fact that Utah is one of the lowest in the country in state need-based aid per student,[166] placing the cost of even a two-year degree beyond the reach of more and more young people in poverty. According to data from 2011-2012, Utah provides only $50 in state aid per full time equivalent (FTE) undergraduate student, far below the national average of $482 per enrolled undergraduate student.[167] Only New Hampshire, Arizona, and Wyoming offer less.[168] College is simply not affordable for growing numbers of Utah residents.

> *"The consequence of a steady decline in state support for higher education, coupled with significant increases in enrollment, is that the average Utah college student now pays $1,131 more per year than they were at the beginning of the recession, while the state is supporting the average student with $1,513 (24%) less."*

OBJECTIVE 3: UTAH WILL MAKE HIGHER EDUCATION AFFORDABLE FOR MIDDLE AND LOWER INCOME FAMILIES AND STUDENTS.

Strategic investment is needed to advance creative measures designed to get low income students to enroll and persist in college. These measures should take financial need into account, and provide appropriate funding to help students overcome basic barriers to initial enrollment and matriculation.

Several states and higher education systems are already taking bold action to help students who otherwise might not attend college due to financial concerns. One such state is Tennessee, which under new legislation called the "Tennessee Promise," is investing $34 million annually to provide a free community college education to every high school graduate in the state.[169] Another state expressing a serious commitment to need-based aid is Oregon, which is considering an investment of $66 million to provide need-based aid to 26,000 college students beginning in 2016.[170]

CALL TO ACTION: $35 MILLION OVER FIVE YEARS.

We recommend investing $35 million over five years to bolster financial aid to middle and low income students–A) $2 million each year for five years ($10 million) to meet increasing demand for the successful Regents' Scholarship, and B) $5 million each year for five years ($25 million) to create and expand performance-based scholarships targeting low income students such as Dream Weber.

These affordability strategies are recommended because they are not blank checks, and also because they are supported by an emerging body of research. Regarding the Regents' Scholarship, it is well established that the single best predictor of a

student's academic success in college is the strength of the student's high school course of study; the more rigorous, the more likely the student is to enroll in, and complete, a postsecondary degree.[171]

There is also developing evidence that combining performance metrics with need-based aid is an effective strategy in propelling low income students toward college completion, particularly when aid is tied to course loads, grades, and other yardsticks measuring progress toward a degree. For example, two New Orleans-area colleges experienced great success with a program called "Opening Doors," which provided students a scholarship of $1,000 each semester for two semesters ($2,000 total), as long as they met two conditions: they had to enroll in college at least half time, and they had to maintain a GPA of "C" or better.[172] "Students did not have to be welfare recipients, and the scholarships were paid in addition to federal Pell Grants. Program counselors monitored whether students met benchmarks, and physically handed the students their checks at the beginning, middle, and end of the semester."[173]

A similar program also produced good results at three Ohio community colleges. Program evaluators noted that scholarship recipients "attempted and earned more credits, were more likely to be enrolled full time, and had less debt."[174]

In Utah, the Dream Weber initiative at Weber State has also been a success. This program, which provides full tuition and fees for eight semesters to students whose family income is less than $40,000 per year,[175] requires students to maintain a 2.0 GPA and make progress toward a degree.[176]

SECTION IV
CONCLUSION

Current research on the segregation of American economic regions by education level and skill, such as that conducted by Rebecca Diamond, should be a clarion call to Utah legislators and policymakers to take immediate action to bolster investment in public and higher education. Utah does not want to be contributing to the reality now facing the nation, where "[b]arely 30 percent of American adults have achieved a higher level of education than their parents did. Only Austria, Germany and the Czech Republic do worse. In Finland more than 50 percent of adults are more educated than their parents."[177]

Yet just putting more money into the system is not the answer. Perhaps the greatest lesson to be learned from the very successful education reform effort in Massachusetts is that substantial investment must be leveraged to improve accountability within the system. A comprehensive report on the success of education reform in Massachusetts explained:

> Reform leaders pushed, pulled and cajoled the Legislature into enacting the MERA [Massachusetts Education Reform Act], which established higher expectations, statewide academic standards and assessments based on the standards; accountability systems for students, schools and districts; management flexibility for superintendents; new educator certification and training rules, including teacher testing; and charter schools. Equally important, the law established a new funding formula that had the effect of reducing local schools' reliance on property taxes and injecting nearly $2 billion of additional funds into public education over the course of a decade. This "grand bargain"—reform with resources—enabled significant changes in the commonwealth's school systems.[178]

Given the reality that even some of the most affluent school systems "show a worrying lack of productivity,"[179] the Utah educational system must be willing to change and accept reasonable, and accurate, accountability measures in return for increased funding.

At the same time, the evidence is clear and substantial that targeted investment in education has a significant effect on economic development. Most studies have examined the effect of increasing the years of schooling citizens receive, and not surprisingly, have found that additional years of education do result in economic benefits. "First, education can increase the human capital inherent in the labor force, which increases labor productivity and thus transitional growth toward a higher equilibrium level of output."[180] Second, because education can raise "the innovative capacity of the economy," the "new knowledge on new technologies, products, and processes promotes growth."[181] "Third, education can facilitate the diffusion and transmission of knowledge needed to understand and process new information and to successfully implement new technologies devised by others, which again promotes economic growth."[182]

More importantly, targeted investments that lead to real reforms and improvement in the quality of institutions of public education, if sustained, have even larger effects on economic development. Hanushek explains:

> Faster reforms will have larger impacts on the economy, simply because the better workers become a dominant part of the workforce sooner. However, even a 20- or 30-year reform plan begun in 2005 has a powerful impact. For example, a 20-year plan would yield a GDP 5% greater in 2037 (compared with an economy with no increase in educational quality). The figure also plots 3.5% of GDP, an aggressive spending level for education in many countries of the world. A growth dividend of 5% of GDP would more than cover all primary and secondary school spending. But even a 30-year reform program (not fully accomplished until

> 2035) would still yield more than 5% higher real GDP by 2041.[183]

In short, "the quality of education—measured on an outcome basis of cognitive skills—has powerful economic effects. Economic growth is strongly affected by the skills of workers. What people know matters."[184]

Indeed, to underscore the importance of this plan, it may be useful to return to Professor Diamond's central thesis, and the data supporting it, that across America today, the most vibrant, economically healthy regions are those with the highest numbers of college graduates and high wage jobs, while those that lag behind have substantially smaller numbers of adults with postsecondary credentials. Aspirations to attend college begin in the home, and college graduates are the product of a long partnership between parents and schools, a partnership that, if cultivated properly, provides students at an early age with a high quality education and extensive opportunities to develop their imaginations and goals.

Yet this partnership needs substantial policy, leadership, and funding support if it is going to be successful in helping students bridge the gap from high school to college and complete a postsecondary program. If Utah is to be a true economic powerhouse, it needs to make the strategic investments articulated herein, and commit at all levels to be ahead, not behind, in the race to produce, and attract, highly educated, highly skilled people who want to live, work, and stay in the state.

"If Utah is to be a true economic powerhouse, it needs to commit at all levels to produce and attract highly-educated, highly-skilled people who want to live, work and stay in the state."

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