From Agency to Enterprise

Arizona State University and a New Institutional Paradigm for American Higher Education

A working document by

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Arizona State University

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Arizona State University

From Agency to Enterprise

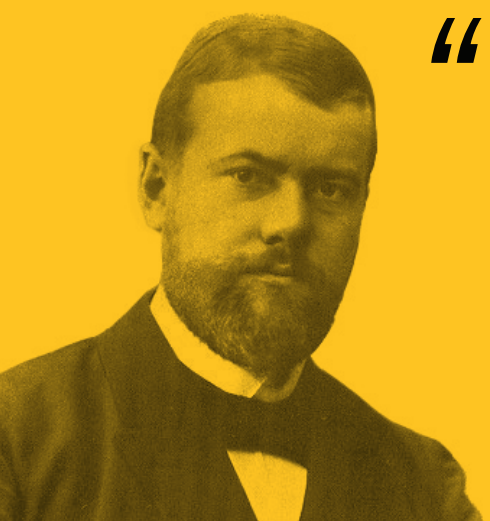
Since 2002, ASU has undertaken a significant institutional redesign, transforming into a New American University that is broadly accessible, strives for world class excellence in teaching and research, and is committed to social impact.

To achieve the ambitious outcomes of the New American University, ASU adopted the academic enterprise as its operational model. Characterized by a commitment to responsivity, maximization of clear goals and adaptiveness, the academic enterprise model emerging from ASU represents a new approach to advancing the multidimensional social, economic and scientific mission of a publicly purposed research university.

In the pages that follow, we articulate the rationale for ASU's transformation into an academic enterprise and the opportunities that come from rethinking the foundational bureaucratic and public agency assumptions upon which higher education in the U.S. has to this point emerged.

Institutions of higher education are informed by a number of different institutional logics. Within this context, we frequently invoke the language of government and bureaucracy when we discuss public colleges and universities. Sometimes this discourse is associated with praise for institutional commitment to public service and stability. At other times, critics of public higher education use the language of bureaucracy to suggest inherent inefficiencies and costs. However, "bureaucracy" merely refers to organizational models that are neither inherently good nor bad. Bureaucracy is an essential feature of all modern societies and is an integral part of many important organizations within them — whether publicly funded and mission driven, such as a state-supported university, or privately-owned businesses that are carefully designed to maximize profit. Max Weber, the German political economist and sociologist whose ideas shape our understanding of capitalism and governance, noted that bureaucratic organization is ubiquitous across many types of organizations, "in state and ecclesiastical structures as well as in large party organizations and private enterprises. It does not matter for the character of bureaucracy whether its authority is called 'private' or 'public.'" Similarly, the celebrated economist Joseph Schumpeter observed that "bureaucracy is not an obstacle to democracy but an inevitable complement to it."

The Oxford English Dictionary (OED) defines bureaucracy as "administration by a hierarchy of professional administrators following clearly defined procedures in a routine and organized manner," and in the pejorative sense as a system that is "characterized by such features as an excessive concern with formal processes and a tendency for administrative power to increase and become more centralized, and hence by inefficiency and impersonality; officialism, [and] red tape." Bureaucratic organizational models of the first characterizationare necessary for effective functioning of government entities because they provide order to the complex work of provisioning public goods and services.



"Bureaucracy… is fully developed in political and ecclesiastical communities only in the modern state, and, in the private economy, only in the most advanced institutions of capitalism"

– Max Weber

However, in the midst of increasing complexity, the bureaucratic models perpetuated by some governments and public agencies sometimes behave according to the second characterization—slow, ineffective, and overly formal. The OED offers additional definitions describing bureaucracy not as a concept, but as a functional unit of government, such as an "institution, organization, etc., which is governed or run by bureaucrats" or as "[the] people employed in such a system, considered collectively." When public administrators act collectively, it is often under the umbrella of a bureau—a unit of governance that may or may not be effective, but which tends to have common characteristics.

Bureaucracy

1.a. Government by officials; a system of government or (in later use) administration by a hierarchy of professional administrators following clearly defined procedures in a routine and organized manner.

b. A state, institution, organization, etc., which is governed or run by bureaucrats.

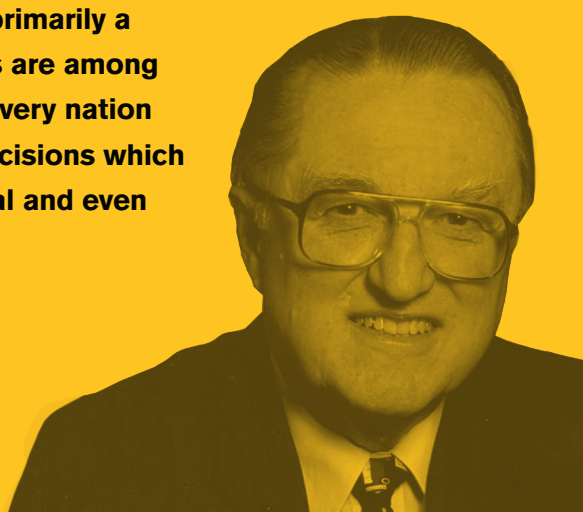
2. The people employed in such a system, considered collectively.

3. Usu. depreciative. Behaviour or practice regarded as typical of this system, esp. when characterized by such features as an excessive concern with formal processes and a tendency for administrative power to increase and become more centralized, and hence by inefficiency and impersonality; officialism, red tape.

Oxford English Dictionary, 2nd Edition

"It is ironic that bureaucracy is still primarily a term of scorn, even though bureaus are among the most important institutions in every nation in the world… they make critical decisions which shape the economic, political, social and even moral lives of everyone on earth."

– Anthony Downs
Policy Scholar at
the Brookings Institution



We may understand a bureau as, "An office, esp. for the transaction of public business; a department of public administration... an agency for the co-ordination of related activities, the distribution of information, etc." The celebrated policy scholar Anthony Downs, a long-time senior fellow at the Brookings Institution, observed that bureaus often "struggle for autonomy." He wrote that, "No bureau can survive unless it is able to demonstrate that its services are worthwhile to some group with influence over sufficient resources to keep it alive.... If it is a government bureau, it must impress those politicians who control the budget that its functions generate political support or meet vital social needs."

One potential challenge of operating the public agency logic is that even as units of effective and necessary bureaucratic governance, agencies are prone to inertia and routine. This can serve them well in their efforts to serve a broad spectrum of geographically and demographically diverse stakeholders, but it may also create burdens for public organizations, like research universities, that want or need to adopt innovative new practices or pursue new outcomes. To this end, Downs notes that, "Once the users of the bureau's services have become convinced of their gains from it, and have developed routinized relations with it, the bureau can rely upon a certain amount of inertia to keep on generating the external support it needs." If government, and public higher education, by extension, is affected by this well-known organizational phenomenon, how can public institutions innovate and continuously improve their service to the public in a rapidly changing world and under conditions of perpetual uncertainty? To answer this question, we may contrast the bureaucratic agencies with its innovative and adaptive counterpart: the enterprise.

Enterprise

1. A bold, arduous, or momentous undertaking;
2. Disposition or readiness to engage in undertakings of difficulty, risk, or danger; daring spirit.

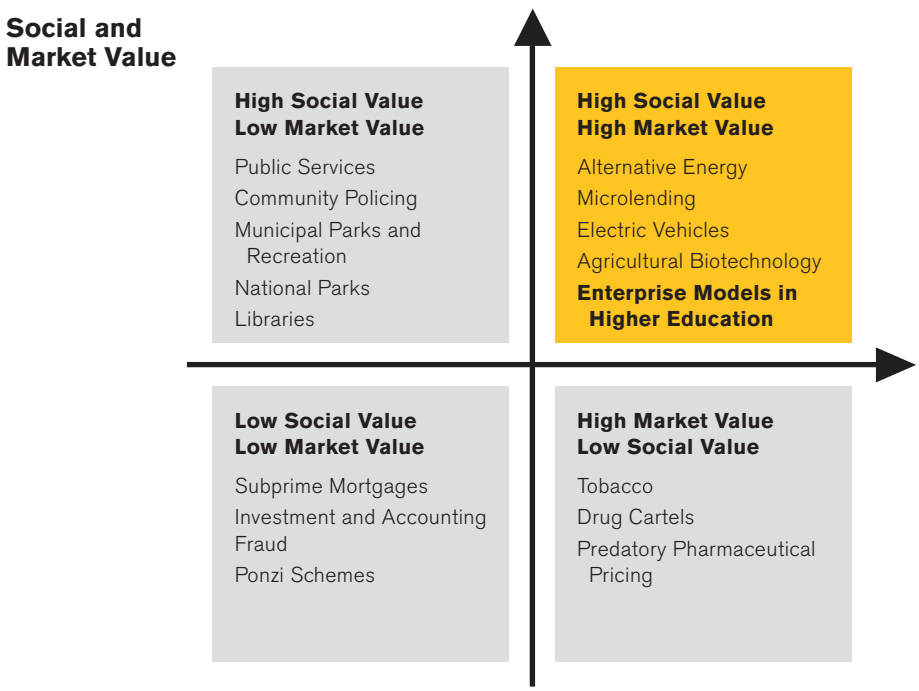
Oxford English Dictionary, 2nd Edition

In contrast to agencies, we generally associate the idea of "enterprise" with commerce or business. Yet, the logic of enterprise, like the logic of agency, is not tied to any particular sector. Consider the Oxford English Dictionary's definition of "enterprise":

1. A bold, arduous, or momentous undertaking;
2. Disposition or readiness to engage in undertakings of difficulty, risk, or danger; daring spirit.

To be described as an "enterprise," an organization simply requires an entrepreneurial spirit. In fact, the terms "entrepreneur" and "enterprise" shares an etymology, the former being the term to identify one who undertakes the latter.

Just as bureaucracy is not inherently bad, enterprise is not inherently good. Consider that many industries and industry practices such as, for example, those associated with tobacco, certain aspects of finance, and pharmaceuticals can be tremendously profitable while also exacting a heavy toll on society. Awareness of the multidimensional nature of success according to both social and economic criteria allows us to contextualize the challenge for new models of higher education: designing institutions that are successful according to the standards of the market and society. New institutions will be expected to advance the social and scientific outcomes of a traditional agency-oriented university design coupled with the innovative and adaptive commitments of emerging enterprise models.



Entrepreneurial Leadership in Higher Education

Leadership is the differentiator in determining whether a higher education institution will behave traditionally—as an agency—or entrepreneurially, taking meaningful, innovative risks to enhance the institution's value for its stakeholders. The economist Joseph Schumpeter argued that in capitalist systems, the role of entrepreneurs is to fundamentally change the patterns of production by leveraging technology to produce new commodities, produce old commodities in new ways, capitalize upon new sources of supply and open new markets for products, or even to reorganize entire industries. In higher education, an entrepreneurial approach leverages technology, as Schumpeter describes, and draws upon previously untapped knowledge, talent, and resources from outside and within the organization to achieve breakthroughs in educational quality and research impact. Academic entrepreneurship that leads to radical change depends upon leadership that is not only committed to creative risk-taking, but also to new values that redefine the purpose that higher education institutions play in society. In higher education, entrepreneurial leadership therefore entails a parting of ways with the assumptions, traditions, and inertia that has guided the evolution of the academy from medieval times through the present, and an embrace of future-oriented thought and action that demands the reorganization of institutions to achieve better outcomes for the society that they serve.

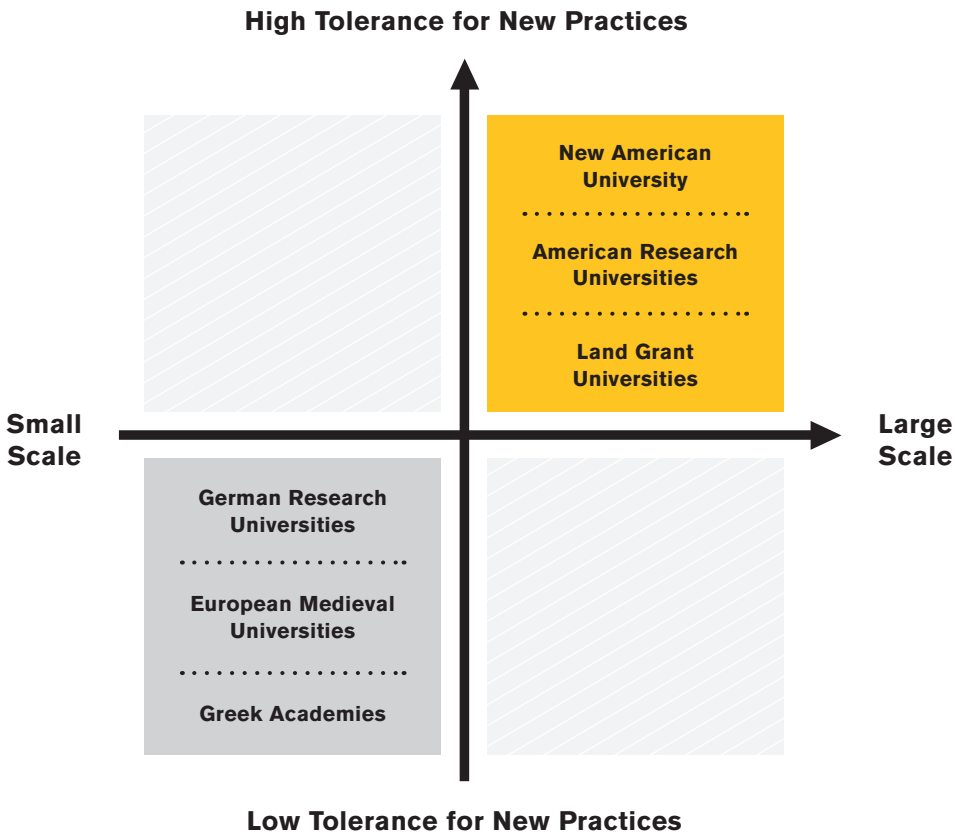
Higher education institutions, which often behave as agencies, are likewise successful in some ways and less so in others. In terms of social benefit, public higher education institutions are often remarkably successful, offering pathways to skills and credentials

"The function of entrepreneurs is to reform or revolutionize the pattern of production by exploiting an invention or, more generally, an untried technological possibility for producing a new commodity or producing an old one in a new way, by opening up a new source of supply of materials or a new outlet for products, by reorganizing an industry and so on."

– Joseph Schumpeter

that help individuals to realize greater prosperity and social mobility and producing research that drives industrial growth. However, because universities function as agencies rather than enterprises, they often fail to realize their full potential. They can be slow to change, cost ineffective and unresponsive to the needs of non-traditional students. Whether public or private, traditional universities tend to be rigid and slow to adopt new practices, reflecting a heritage of commitment to narrowly defined notions of discovery and teaching dating back to the guild culture of thirteenth century Europe that informs the self-governing nature of academic institutions to this day. According to traditional models, university faculty act as stewards of the accumulated knowledge of civilization, sometimes seeing themselves as guardians against the pressures of both the market and social change. This tendency bears heavily upon the culture of university leadership, often resulting in hesitation to act and even greater reluctance to act swiftly—the hallmarks of bureaucracy.

Higher Education Evolution



ASU Charter

ASU is a comprehensive **public research** university, measured not by whom it excludes, but by **whom it includes** and how they **succeed**; advancing **research and discovery** of public value; and assuming **fundamental responsibility** for the economic, social, cultural and overall health of the **communities** it serves.

As an academic enterprise, ASU embodies the spirit of creative risk taking through which knowledge is brought to scale, bringing its impact to bear upon social development and economic competitiveness. The intentional redesign of ASU recognizes the necessity to succeed in terms of both social impact and market value, and acknowledges that the university is a key player in a highly competitive arena, producing knowledge capital – not only goods and services, but also human capital.

The north star for ASU's development as an academic enterprise is our charter. The ASU charter is a promise to the citizens of Arizona, representing our commitment to realizing the state's constitutional obligation to provide public education. As an academic enterprise committed to delivering public value to the citizens it serves, ASU takes responsibility for fulfilling its charter. ASU's responsibility is not contingent upon receiving support from the Arizona's legislature. Our charter affirms that ASU will meet its responsibilities regardless of whether or not it benefits from appropriate and fair public investment.

ASU's Strategic Enterprise Plan was created to realize the aspirations of its charter. A powerful higher education enterprise is crucial if Arizona and its citizens are to prosper financially and socially. Supporting this academic enterprise requires not only the continuation of our current, traditional educational activities at accelerated rates, but also the development of new enterprise programs that fill resource gaps.

> "…the legislature shall make such appropriations, to be met by taxation, as shall insure the proper maintenance of all state educational institutions, and shall make such special appropriations as shall provide for their development and improvement."
>
> **– Constitution of the State of Arizona**
> **Article 11, Section 10**

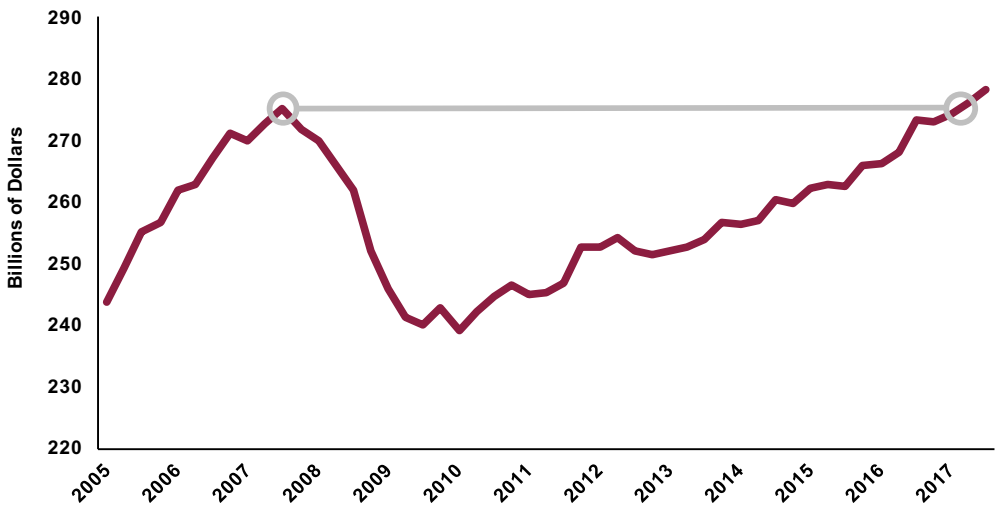
Human Capital: Arizona's Missing Link

Knowledge and Human Capital:
Arizona's Missing Links Economic

development is at the core of social progress.

Even without careful design and implementation, regional economic growth can be associated with important gains in well-being, quality of life and health. And with mindful and careful planning, regional economic growth can generate benefits that extend beyond economic productivity to broader, multidimensional notions of prosperity. With this background, the theory and practice of regional economic development has evolved in recent generations. The most fundamental systematic efforts to foster economic growth rely heavily on exacting public subsidies to attract job creating firms. Slightly more sophisticated efforts involve careful investments in promising local firms to foster growth from within the region. The most sophisticated efforts address the imperative to create attractive business and worker friendly comprehensive ecosystems. Implemented by a small but growing number of cities and states, the most sophisticated approaches to economic development include commitments to arts, culture, education, and housing in addition to more traditional business infrastructure.

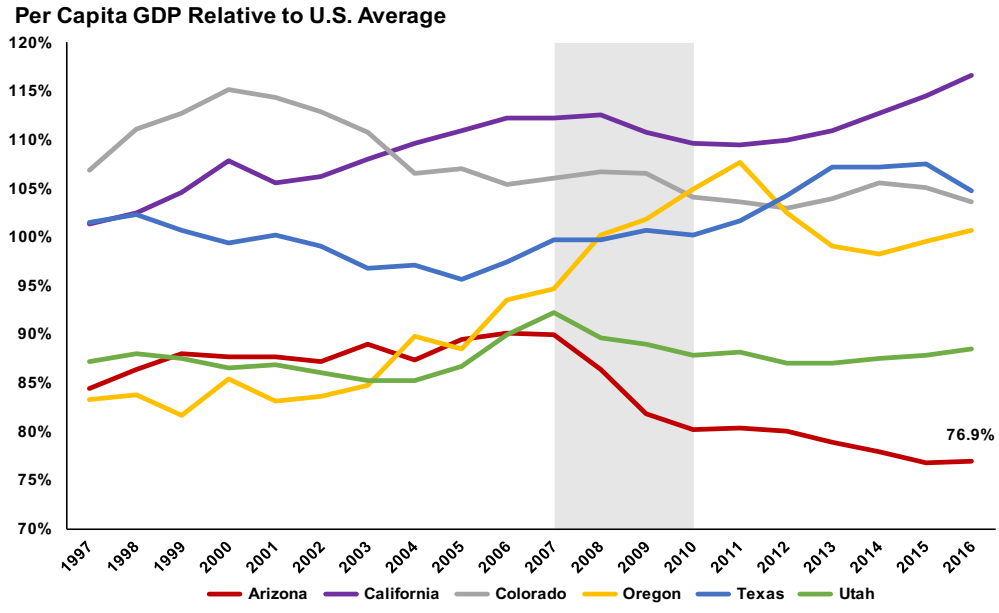
Arizona Gross Domestic Product



Source: Bureau of Economic Analysis, 2009 dollars

The work of facilitating economic and social progress is complicated. What works for one region may not work for another. Within this context, Arizona has pursued strategy that is decidedly focused on creating a low-cost, tax-friendly business environment. This approach has the benefit of being clear and easy to understand. But it is not easy to determine if is the best we can do. For evidence that we can do more, consider Arizona's quarterly real GDP, a key indicator of economic health. By this measure, Arizona is just now recovering from the 2008 recession.

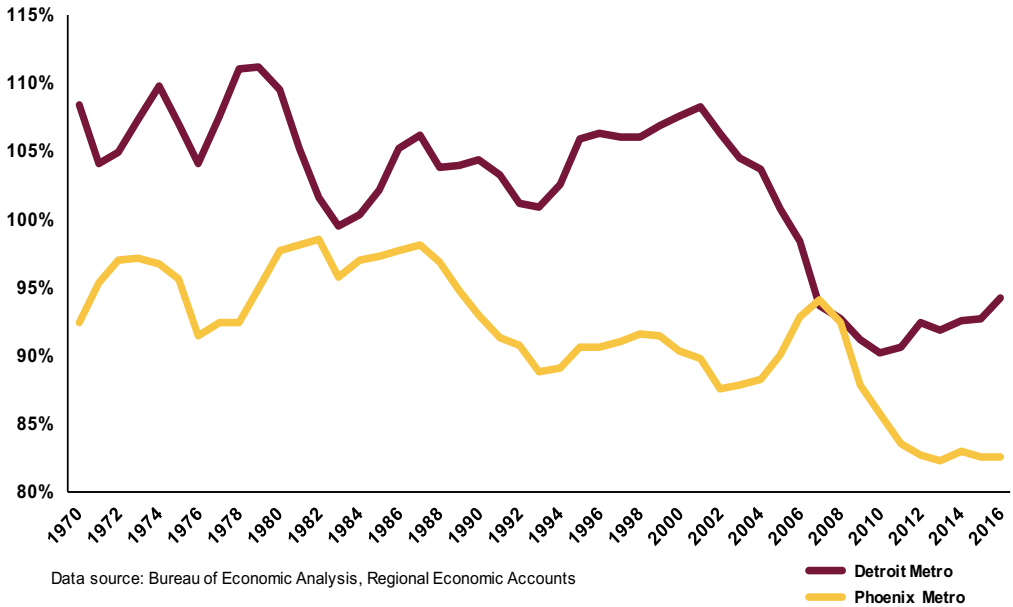
The aggregate consequences of Arizona's approach to economic development leave much to be desired for the states residents and families. The state's flat GDP over the last ten years correlates with shrinking per capita personal incomes, which began a steep decline in 2007. By 2016, Arizona's per capita income was nearly 25 percent lower than the national average. Take together, evidence such as this suggest that our state's economic development strategy represents only part of what we can accomplish with more holistic thinking.



Data source: Bureau of Economic Analysis, Regional Economic Accounts

To begin thinking about the merits of more expansive economic development thinking, consider how Phoenix compares to Detroit. Detroit is often used as an example of a city in decline, but this characterization may actually be more characteristic of Phoenix. From 2008 onward, Detroit's per capita personal income has not only recovered, but grown, while incomes in Phoenix continually declined.

Per Capita Personal Income Relative to U.S. Average



Data source: Bureau of Economic Analysis, Regional Economic Accounts

Detroit's growth in per capita personal income reflects a conscious decision by state and local leaders to develop the city into a knowledge-driven economy. In contrast, Arizona's decline is the result of policy decisions that attract lower value industries and fail to build human capital. The Nobel Prize-winning economist Gary Becker coined this term to describe the intangible assets possessed by individuals, such as knowledge, skills, creativity, and health, which raise their earnings potential and their ability to contribute to society. Becker notes that, "education, training and health are the most important investments in human capital." Universities play important roles in creating human capital for individuals and knowledge capital for regions. Combined with the ideas that come from university research, the human and knowledge capital generated by universities can empower virtually all approaches to economic development. Knowledge capital can attract high value jobs to the region, facilitate disruptive growth in local industries and stimulate growth of attractive, innovative and creative ecosystems for firms and families. But to until recently, Arizona's universities have not be systematically integrated into efforts to transform Arizona's economy into one marked by commitments to knowledge-intensive growth.

“Schooling, a computer training course, expenditures on medical care, and lectures on the virtues of punctuality and honesty are also capital… they raise earnings, improve health, or add to a person’s good habits over much of his lifetime... Education, training, and health are the most important investments in human capital. ”

– Gary Becker
Concise Encyclopedia of Economics
1992

Human Capital is Critical to Arizona's Economy

High Value Industries Represent a Lower Proportion of Arizona's Economy Relative to Other States

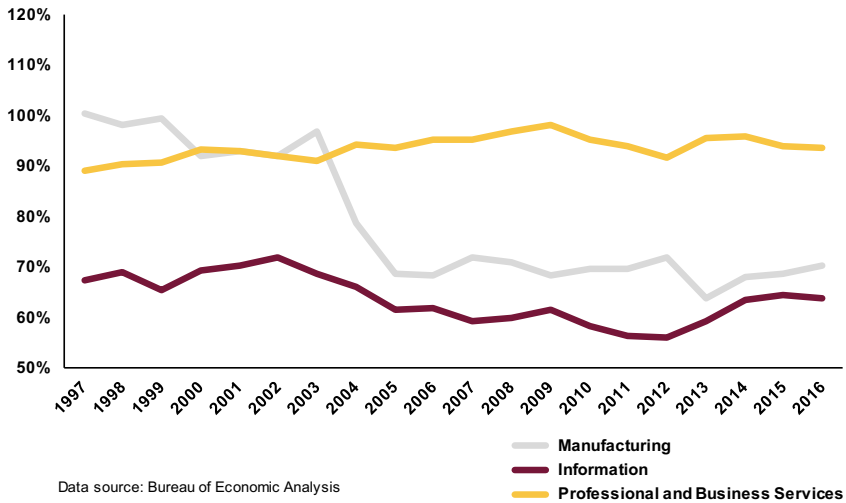
Industry	Arizona		Texas	Utah	Wash
Administrative and waste management services	150%	101%	109%	102%	92%
Retail trade	132%	98%	103%	120%	136%
Utilities	124%	82%	141%	68%	49%
Real estate and rental and leasing	117%	108%	72%	94%	102%
Arts, entertainment, rec., accommodation, & food services	113%	125%	89%	83%	88%
Educational services, health care, and social assistance	111%	85%	78%	83%	81%
Finance, insurance, real estate, rental, and leasing	109%	97%	73%	106%	83%
Construction	103%	138%	133%	146%	101%
Transportation and warehousing	102%	106%	121%	116%	94%
Wholesale trade	96%	96%	133%	88%	90%
Mining	92%	227%	495%	100%	7%
Agriculture, forestry, fishing, and hunting	78%	74%	72%	48%	167%
Professional, scientific, and technical services	**77%**	127%	93%	88%	88%
Manufacturing	**70%**	59%	116%	95%	107%
Management of companies and enterprises	66%	105%	64%	76%	70%
Information	64%	110%	71%	93%	217%
Information	**59.6%**	155.2%	67.7%	87.4%	222.6%

Size of industries in state economies relative to size of industries in national economy, 2016, as measured by contribution to state gross domestic product.

Source: ASU Analysis of Bureau of Economic Analysis Regional Dataset

High value industries are inherently human capital intensive, requiring skilled labor. When we look at the change in output of Arizona's human capital intensive industries since 2005, we see that output growth has been nearly flat in professional, scientific and technical services and in manufacturing. Although the output in the information sector has grown, its contribution to state GDP is still 40.4% less than the national average, showing that Arizona's information industries have not kept pace. Because taxes and the cost of business are already low in Arizona, low output growth in these sectors indicates that they have suffered as a result of the low availability of skilled professionals. This is especially true in manufacturing. Many of the lowest value manufacturing activities, such as production of garments and common household appliances, were outsourced years ago to nations where labor is less expensive. The U.S. now manufactures higher value goods, requiring more skilled and expensive labor—meaning that low output growth in Arizona's manufacturing sector also represents low availability of human capital and low capacity for high value manufacturing.

Concentration of Human Capital Intensive Industries In Arizona Relative to National Economy



Data source: Bureau of Economic Analysis

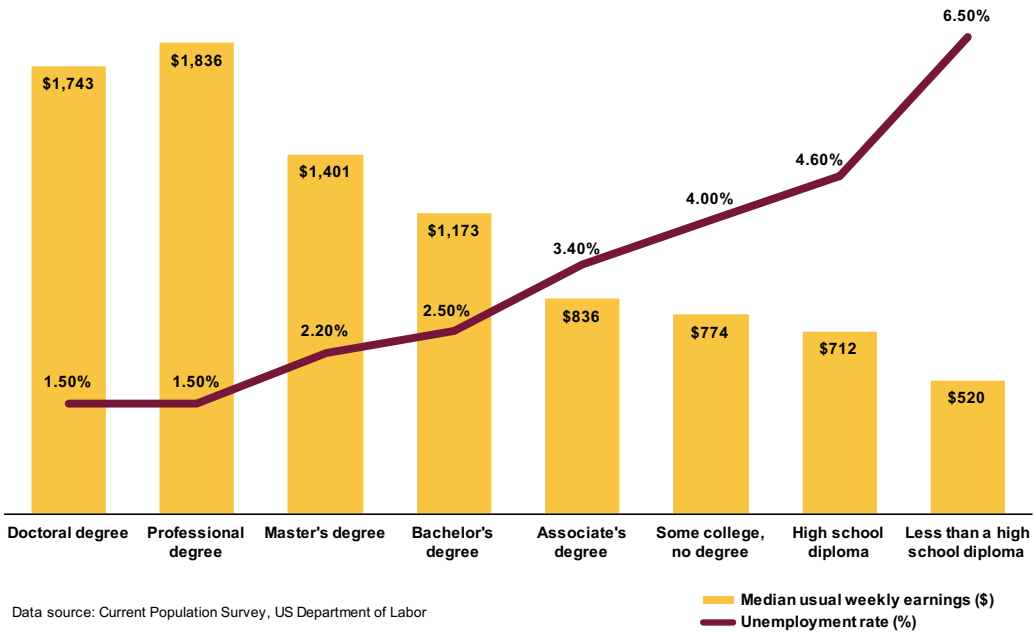
Take together, evidence such as this suggest that our state's economic development strategy, although well-intended and predictable, represents only part of what we can accomplish with more holistic thinking. Consider for a moment: if Silicon Valley is such an expensive place to do business, and companies must contend with California's high taxes and unfavorable regulatory climate, then why do many of our country's most successful businesses, such as Apple, Google and Facebook, choose to maintain their headquarters there? The answer is that *Silicon Valley is actually the cheapest place to do business in the whole country for these companies.* There is no place in the world where America's most successful computing technology companies have more affordable access to their most expensive input: human capital, in the form of readily accessible technology workers, and knowledge capital, which is represented by networks of universities and laboratories that produce the research that leads to new product development.

The case of Silicon Valley represents an important opportunity for Arizona. While it may be the most efficient place for knowledge intensive firms to do business, there remain a number of downsides with doing so (i.e. the powerful culture is foreign and disconnected to the rest of the world and the valuation of firms is often irrational). Accordingly, through deliberate and mindful commitments to establish a knowledge capital intensive region, many knowledge-intensive industries can come to understand Arizona as an ideal alternative.

Building Human and Knowledge Capital

The attainment of higher education credentials is one of the most important contributors to development of human and knowledge capital, and the impact of higher education attainment on individual prosperity is well-documented. There is still no better investment than a four-year degree: with annual returns greater than 15 percent, college education offers twice the return on investment of stocks, and at least three times the return for corporate bonds, gold, treasury bills and housing.[1] There is also no better safeguard against poverty than the attainment of a bachelor's degree. The unemployment rate of those with only a high school diploma is nearly twice that of those who have obtained a bachelor's degree.

National Unemployment Rates and Earnings by Educational Attainment, 2017

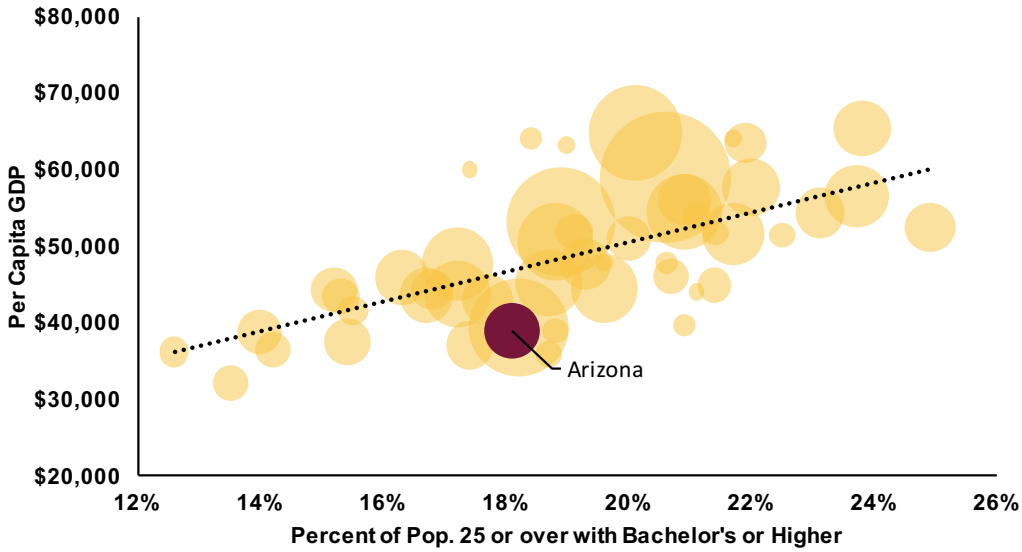


Data source: Current Population Survey, US Department of Labor

There is a clear relationship between the growth in degree attainment and the growth in per capita GDP across the country. The states that have had higher growth in college degree attainment have generally had higher increases in per capita GDP as well. Arizona's degree attainment rates were among the lowest in the nation from 2000-2010, and its GDP per capita actually shrank during this time.

[1]www.brookings.edu/research/where-is-the-best-place-to-invest-102000-in-stocks-bonds-or-a-college-degree

Relationship Between Educational Attainment and Economic Output, 2016



The links between human capital, industrial clusters, the state's economic growth and the prosperity of individual citizens are clear: when a state does not develop its human capital infrastructure, it cannot attract high value industries, people do not acquire the credentials and skills necessary to obtain higher paying jobs, and they are forced to take jobs in industries that have lower wages. The industries that are best able to make use of less skilled workers deliver less total economic value to the state, because the goods and services they provide are less valuable to trade with other states and countries.

How does Arizona fare at producing human capital, and what does this mean for the prosperity of individuals and families in the state? It turns out that in Arizona, only nine out of 100 students in the ninth grade will complete a bachelor's degree in six years.

In Arizona, for every **100** children in ninth grade, **64** graduate from high school four years later, **18** enter a four-year higher education program within one year and only **9** complete their bachelor's degree within six years.

A perfect storm of social and economic challenges is making landfall in Arizona. For decades, Arizona's economic development strategy, which seeks to create a low-cost, tax-friendly business environment but does not aim to grow human capital, has attracted and grown lower value industries.

While it is true that these industries create jobs, it is also true that the specific jobs these industries create are among the most likely to be replaced by new technologies as our economy becomes more efficient. By focusing on growth but not knowledge intensive growth, Arizona may be worse off in the long run than it would have been otherwise. The creation of jobs and demands for labor in fields that are certain to be disrupted places Arizona's families in economically and socially vulnerable positions. This approach also limits the states capacity to be perpetually adaptive to new opportunities and responsive to new challenges.

The data on Arizona's response to the Great Recession supports this general hypothesis. Arizona's economy suffered more than others and took longer to recover. While we can never fully understand every aspect of regional economic growth, we can commit to supporting the forces that empower every proven pathway: human and knowledge capital.

With this background, the mandate for Arizona State University becomes clear. ASU is to efficiently and effectively generate for Arizona the people, ideas and technologies possible that will enable long-term, adaptive, knowledge-intensive growth. We have chosen to use the academic enterprise as the operational model that brings about this massive transformation. As Cicero wrote, "I criticize by creation, not by finding fault." ASU is working to create a better future for the state's communities and families by making bold moves to develop Arizona's human capital and produce great ideas that drive the state forward.

"I criticize by creation, not by finding fault."

– Marcus Tullius Cicero

Enterprise Transformation: Building Knowledge Capital

Enterprise Transformation: Building Knowledge Capital

Unlike the strategic plans of traditional higher education institutions, ASU's operational model reflects a unique identity as an academic enterprise that takes reasonable risks to achieve meaningful outcomes. Our performance data show that as an academic enterprise, ASU is achieving the transformative outcomes in the two key human and knowledge capital areas: the production of empowered individuals and the production of powerful ideas.

Empowering Individuals

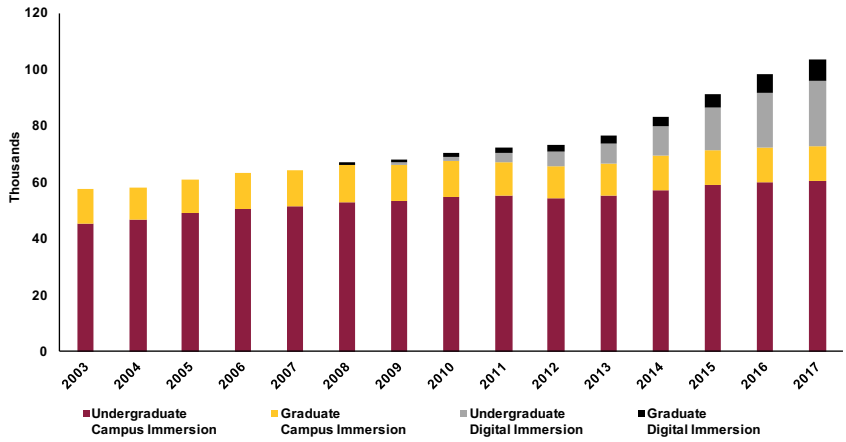
We measure how we create human capital through our performance on various metrics related to students. Given the overwhelming evidence on the returns to an individual and society of a college degree, we sometimes think of this work as empowering individuals. The most important are growth in total enrollment, which shows the growth of our student body across all four ASU campuses; freshman retention, which is a strong indicator of whether a student will go on to complete their degree; and graduation rates and degrees awarded, which show our overall success in producing human capital.

Metric #1: Enrollment

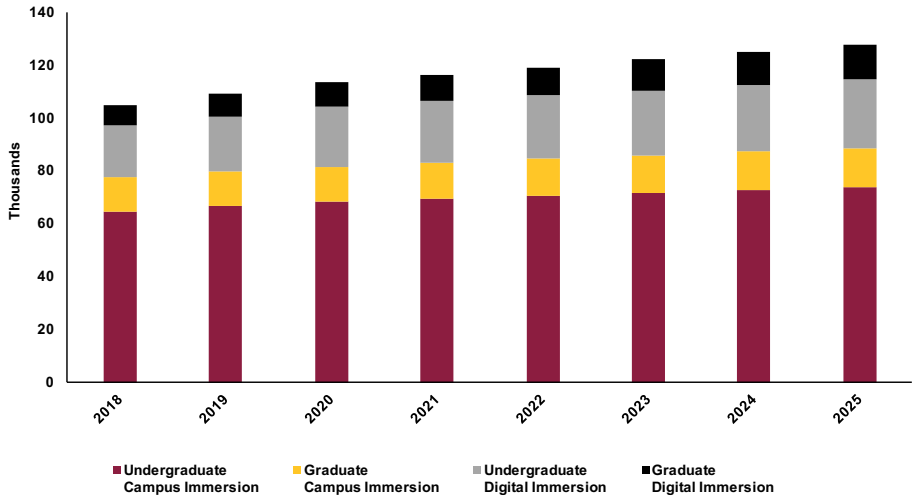
ASU is the largest university in the United States by enrollment. This is a deliberate design choice that reflects the university's commitment to its charter. We are frequently asked questions like "when is ASU going to stop growing?" This is the wrong question. When
we consider the long-term implications of Arizona's lack of human capital development, and especially how few high school freshmen end up graduating from college, perhaps we should be asking, how can we grow faster? How can we do more to solve these problems?

ASU's response to these challenges is to embrace the audacious goal of achieving enrollment in excess of 120,000 students by 2025. With over 100,000 students currently enrolled, we are on track to meet this goal.

Total Enrollment Growth, Campus Immersion and Digital Immersion



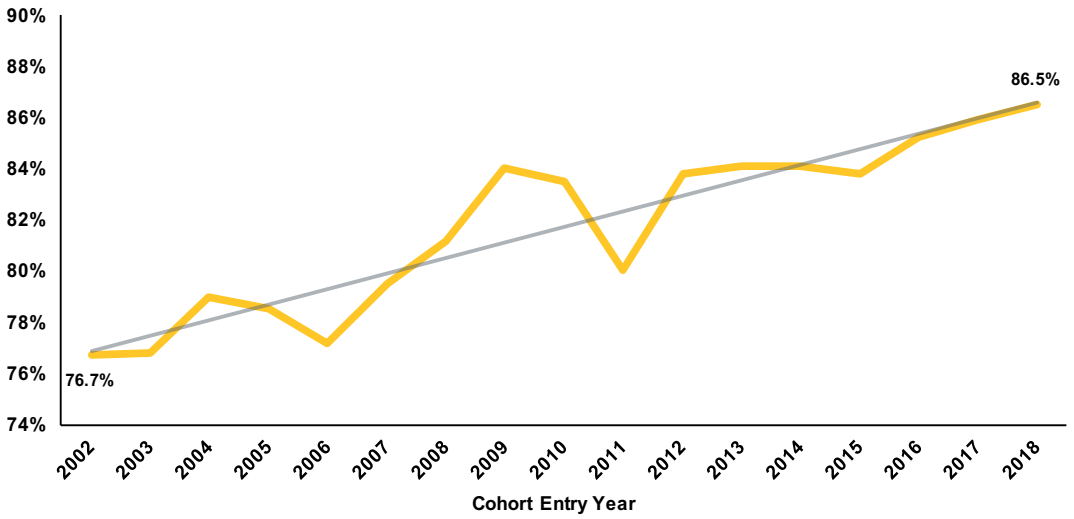
2025 Enrollment Targets, Campus Immersion and Digital Immersion

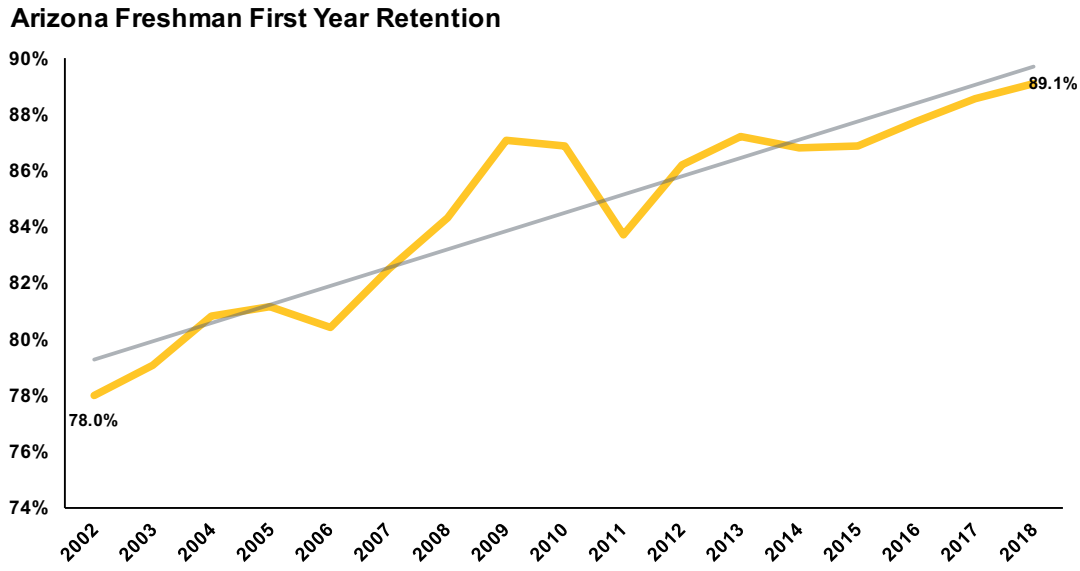


Metric #2: Freshman retention

Freshman retention indicates a few things. First and foremost, it demonstrates that students are satisfied with their experience of college, serving as a barometer for their optimism. Secondly, it shows that students are getting the requisite support to ensure their continued success. Finally, it generally demonstrates students' commitment to finishing a college degree. As we have worked to raise our freshman retention rate, we haven't been focused on the number itself, but rather on the factors that drive this number: how can we help students to feel more satisfied, optimistic and committed? We have implemented technological tools and programs that have elevated the student experience. Our eAdvisor program, for example, helps students to easily plan schedules that fit their degree programs and their lives. Our First Year Success program uses peer mentoring to advise students on how to overcome the hurdles of their freshman year and connects them to targeted resources. As a result of implementing these kinds of programs, ASU's freshman retention rate is on par with Arizona's other two public universities, and among the best in the nation for public universities – even though our student population is the largest in the nation.

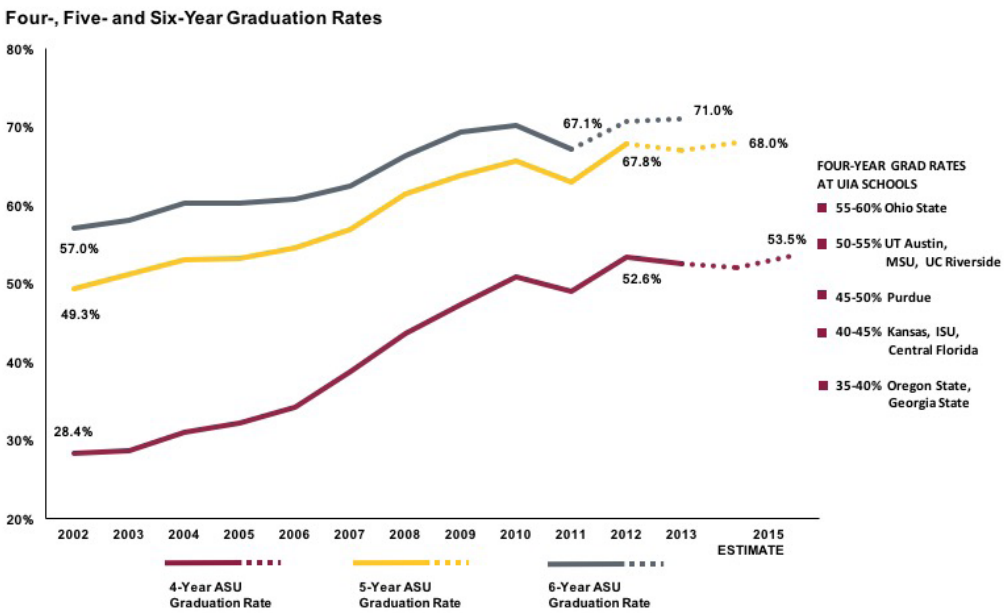
Total Freshman First-Year Retention



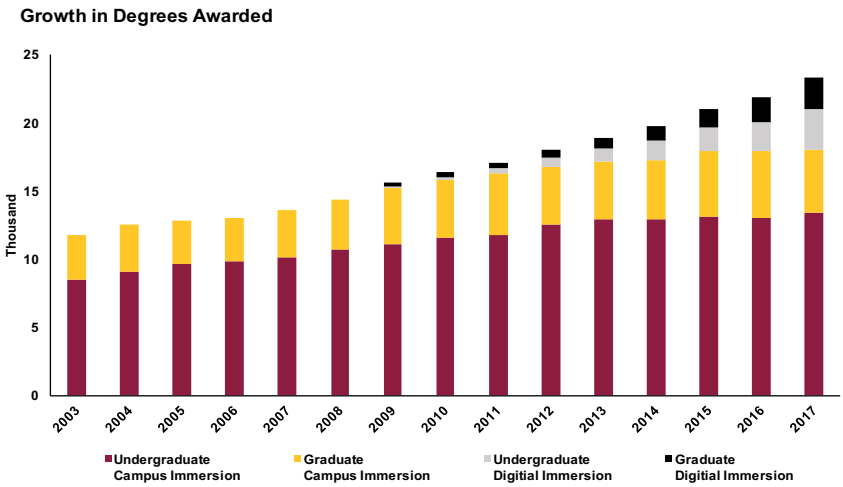


Metric #3: Graduation and degrees awarded

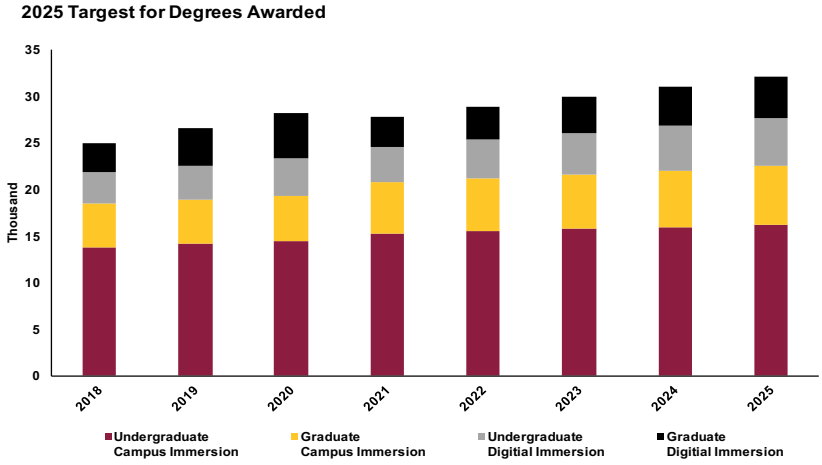
Our graduation rates are the most dramatic indicator of the success of ASU's approach. ASU now boasts graduation rates that exceed that of peer universities such as The Ohio State University, University of Texas at Austin, University of California at Riverside and others. From 2003-2012, our four-year graduation rate nearly doubled, our five-year graduation rate increased by nearly 15 percent and our six-year graduation rate grew by more than 20 percent.



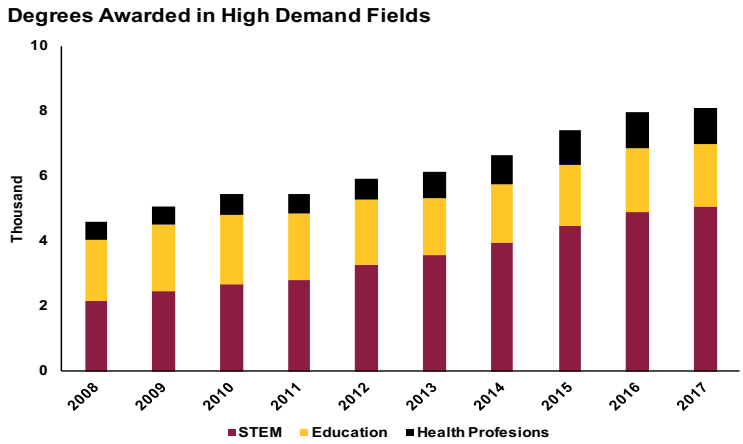
Higher graduation rates have translated into more degrees awarded. Here again, the growth rate of our degrees awarded exceeds that of leading peer institutions, and has accelerated dramatically in the last five years as a result of our expansion of online, digital immersion programs.



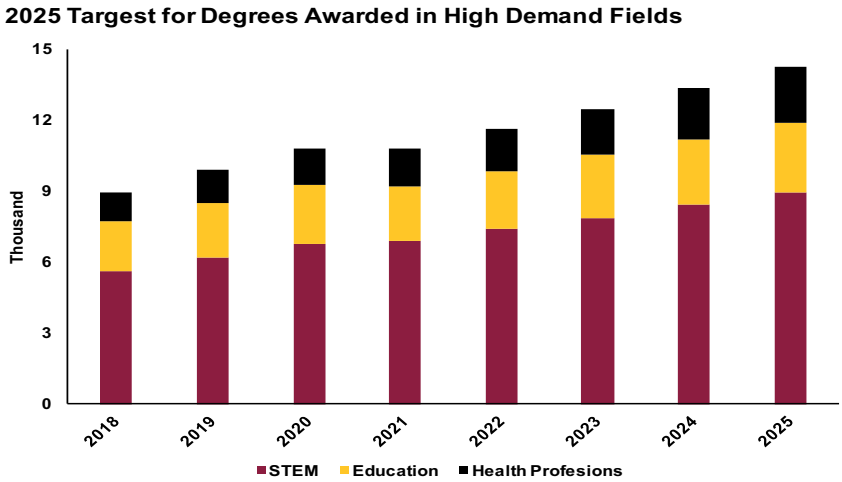
ASU is not planning on slowing down in the years ahead. We aim to accelerate the growth rate of our degrees awarded through further expansion of online programming for graduate and undergraduate students. We are making substantial capacity building investments to make these ambitious goals a reality.



Beyond increasing the number of degrees awarded each year, we have placed special emphasis on increasing degree production in high demand fields. ASU has made great strides in increasing degrees awarded in Science, Technology, Mathematics and Engineering (STEM) fields, Education and Health Professions. These three fields are key focus areas for improving Arizona's national and international competitiveness.



We plan to double our production of degrees in high demand fields by 2025. Increasing the number of STEM field graduates will improve Arizona's long term capacity for the growth of high tech, high value industries that create the best paying jobs. Graduating more qualified teachers will improve Arizona's educational outcomes, leading to a better pipeline of college-ready students. And by preparing more nurses and healthcare professionals, ASU is helping to ensure that Arizona's healthcare system can meet the needs of a growing population.

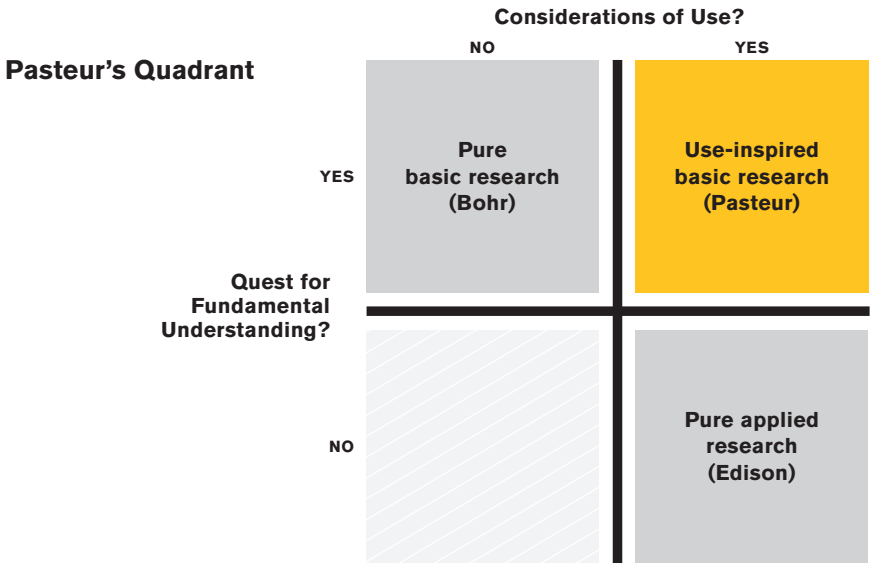


Powerful Ideas

The second major product that we create as an academic enterprise is knowledge capital, or more simply put, ideas. But not just any ideas. The ASU charter describes our unique approach to generating powerful ideas as advancing research and discovery of public value. This means that as we grow the research side of our enterprise transformation, we seek ways to meaningfully contribute to the overall wellbeing of humanity, and solve real-world problems. We measure our production of ideas qualitatively through the public value impact of ASU's research achievements, and quantitatively through research expenditures.

Use-Inspired Research: Organizing for Maximized Social Benifit

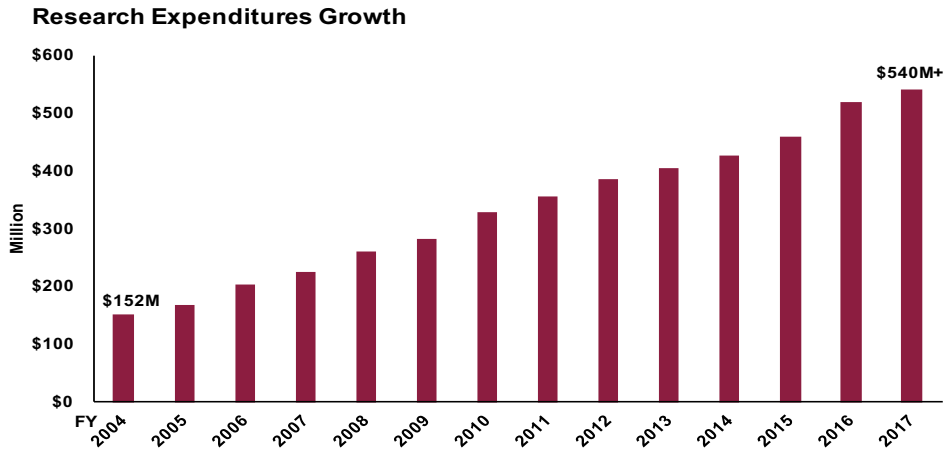
For centuries, scientists were driven by their own curiosity, with no specific goal in mind, to pursue research that advanced basic understanding of natural phenomena, creating knowledge for its own sake. An exemplar in basic research is Neils Bohr, the Danish physicist whose discoveries shaped our understanding of atomic physics. In contrast, pure applied research starts with a goal in mind of solving a particular problem of practical significance. Thomas Edison, whose contributions to science were almost entirely practical through the many inventions he created, is considered a paragon of applied research. For much of the 20th century, scientists have argued over whether knowledge is best produced through basic research, which might lead to great discoveries as well as being sometimes wasteful and esoteric, or applied research, which might create solutions at the expense of expanding our basic understanding. The solution is to pursue a permutation of both kinds of research, which was Louis Pasteur's approach. Use-inspired research allows us to ask basic science questions with specific goals in mind.



For more than a decade, ASU has reorganized its research enterprise to conduct use-inspired research. We have torn down the walls between disciplines, finding complementarities between the seemingly unrelated research of different departments. We have created entirely new academic units, centers and institutes devoted to the study of emerging fields that encompass many disciplines. ASU's Julie Ann Wrigley Global Institute of Sustainability, for example, was the first academic unit at any university in the nation to bring together ecologists, engineers, urban planners and humanists to partner with each other to solve sustainability challenges facing us in the 21st century. We have also opted out of following the well-tread, conventional paths in organizational design that seem suitable for a university of ASU's size, choosing to pursue novel alternatives that have never been tried before. For example, instead of creating a medical school, we launched the ASU Biodesign Institute, which pursues innovative, transdisciplinary solutions in medicine and biosciences.

Research Expenditures: Measuring Production of New Ideas

As a result of our bold organizational redesigns, ASU is producing more and better ideas than ever before. University research productivity is measured by research expenditures, or the total of funds from private sources and public agencies that a university expends annually on research. Since 2003, ASU has more than tripled its annual research expenditures, which now exceed $540 million per year.



It is important to remember that funded research at ASU is still a relatively new venture. ASU has only been a research university since 1980. ASU is one of only a handful of universities in the nation to ever achieve such rapid growth in research, and by various measures is now competitive with the best universities in the nation.

ASU competes successfully with the best universities.

2016 National Science Foundation (NSF) Higher Education Research and Development (HERD) rankings

Total Research Expenditures

44
of 876

Ahead of:
The University of Chicago
Brown University
Princeton University

Total Research Expenditures among Institutions without a Medical School

9
of 718

Ahead of:
Stanford University
University of North Carolina at Chapel Hill
Colombia University

Non-Medical School

22
of 876

Ahead of:
Stanford University
University of North Carolina at Chapel Hill
Colombia University

Humanities

4th

Ahead of:
Yale
Harvard University
Princeton University
Columbia University

NSF Fund Expenditures

23rd

Ahead of:
Harvard University
University of Chicago
University of Pennsylvania
Princeton University

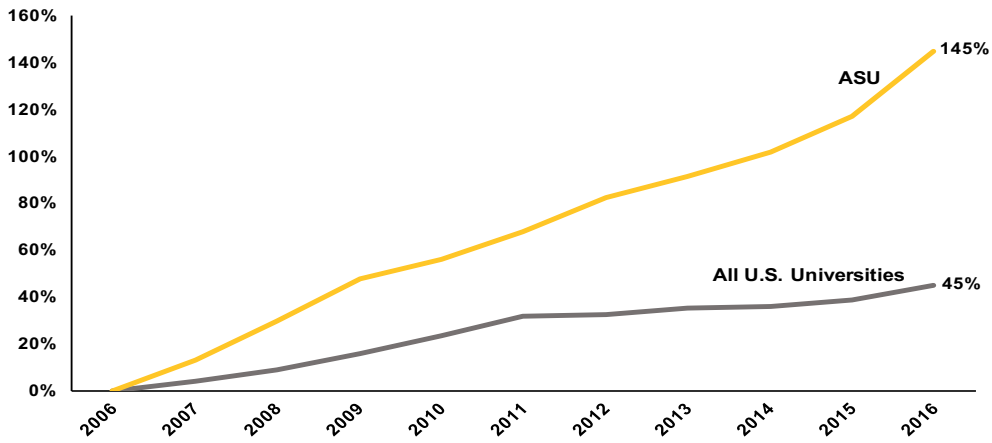
Engineering

19th

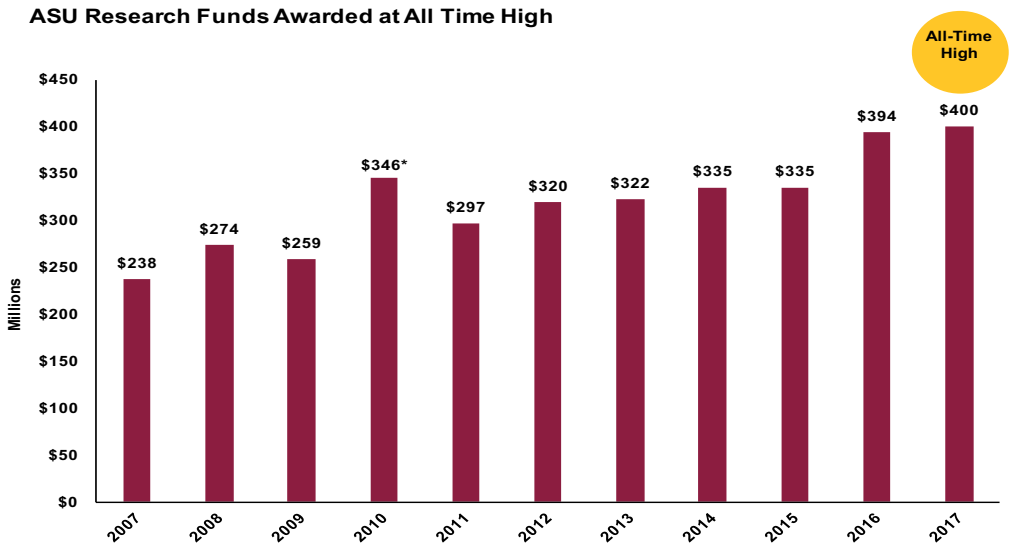
Ahead of:
Cornell University
Caltech
Carnegie Mellon University
Stanford University

ASU's growth in research expenditures exceeds that of any other in the nation, and is triple than the average research expenditure growth of all U.S. universities. By reconfiguring the university's internal structures, we have spurred the development of a culture of innovation, leading to greater faculty participation and performance in research. As a result, we have increased the annual value of research awards to $400 million, an all-time high.

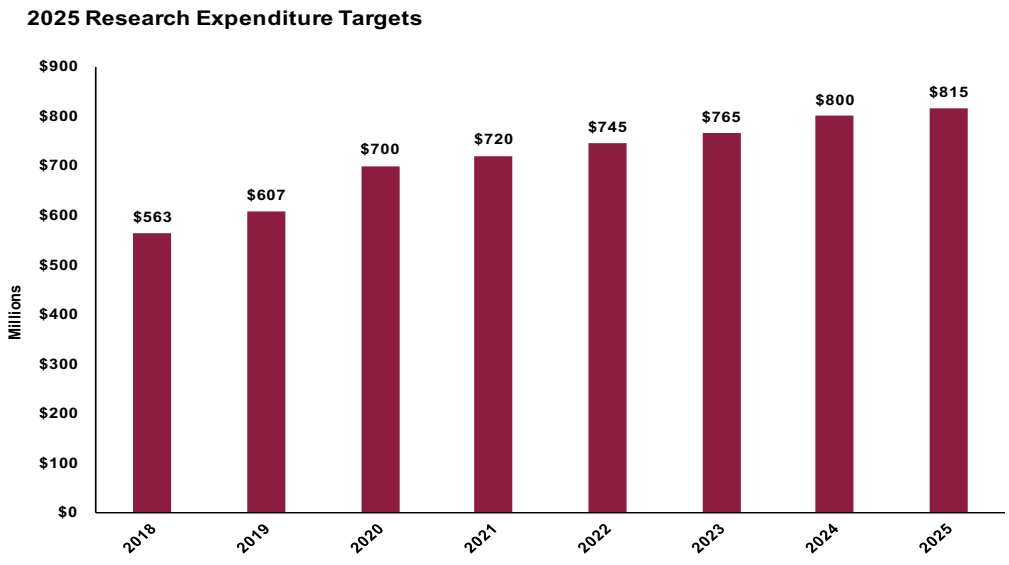
ASU Research Expenditure Growth vs. All U.S. Research Universities



ASU Research Funds Awarded at All Time High



*FY 2010 awards reflect the impact of the American Recovery and Reinvestment Act (ARRA)



Our goal for 2025 is to raise research expenditures even further to a steady state of $800 million per year. Achieving this goal will require new capacity building investments in faculty, laboratories and facilities. It will also require the ambitious pursuit of huge federal projects, partnership building and growth into new funding areas, such as international development.

Closing the Gap: The Financial Opportunity of New Enterprise Programs

Financial Opportunity of New Enterprise Programs

Though its ongoing enterprise transformation ASU has substantially improved its financial position in the last five years. We maintain a Prime-1 rating from Moody's, owing to our strong growth in enrollment, diversification of university revenues and agility to respond to a rapidly changing higher education market.

From Moody's Investors Service, December 2015:

ASU's Strategic Position

Arizona State University's (Aa3 positive) strong culture of innovation supports an excellent strategic position that should translate into improved credit quality over time. ASU's strategy includes the development of diversified programming and expanded enrollment points of entry, combined with new partnerships. Resulting healthy revenue growth and cash flow generation provide a strategic reinvestment source that partially offsets weak state funding, comparatively modest fundraising and historically high leverage.

Diverse programming and rising brand recognition through strategic partnerships spur robust enrollment growth. ASU's strongest enrollment growth is occurring in online programs, though traditional on-campus enrollment is also increasing. Over the last 10 years, enrollment has grown by 56% to 88,742 full-time equivalent students in fall 2015. Steady growth of non-resident students speaks to the university's broadened geographic reach and market draw, with programs such as the Starbucks College Achievement Plan increasing nation awareness.

Multi-year strong revenue trends provide funds for ongoing strategic investment. ASU's extraordinary net tuition revenue growth (60% from fiscal year 2011 to 2015) is expected to continue. Over a decade of success diversifying student revenue and growing new lines of business underpins ASU's momentum.

Increasing flexibility in the university's operating model enables ASU to adjust to market changes. Against a backdrop of dynamic sector-wide changes, ASU is taking steps in multiple areas to improve its ability to adjust. These include building reserves, changing employment models and partnering with third parties for capital investment.

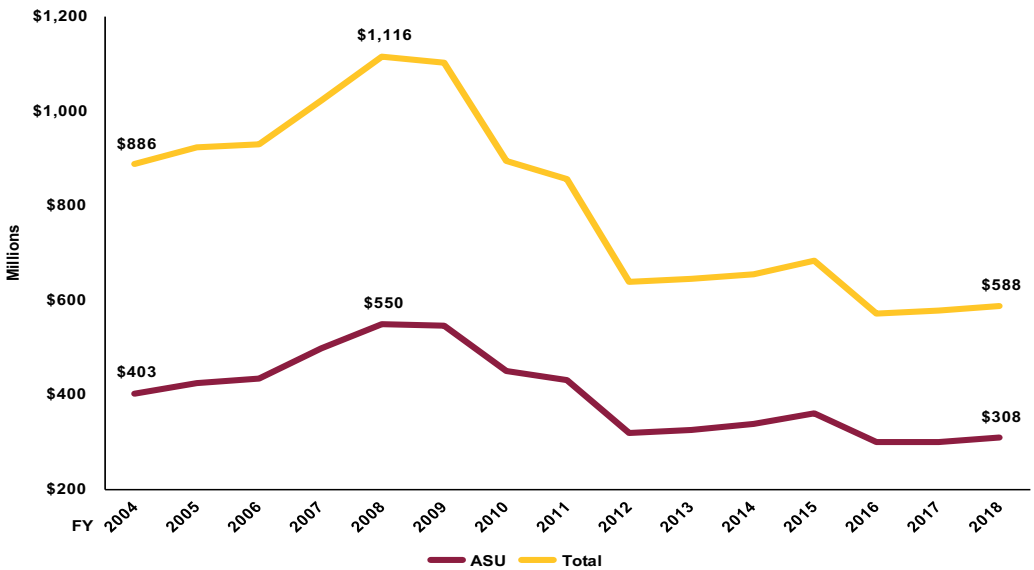
However, we will need to pivot to different strategies than those we have used in recent years in order to meet our 2025 goals. In order to continue to produce great people and ideas at high scale, we must make substantial investments in our base operations, which requires additional resources. Revenue from our current level of teaching and research activities will not be adequate to support these investments.

Key Investment Areas in Base Operations

- 1,200 to 1,500 new faculty by 2025
- Over 500 new staff by 2025
- New teaching and research facilities

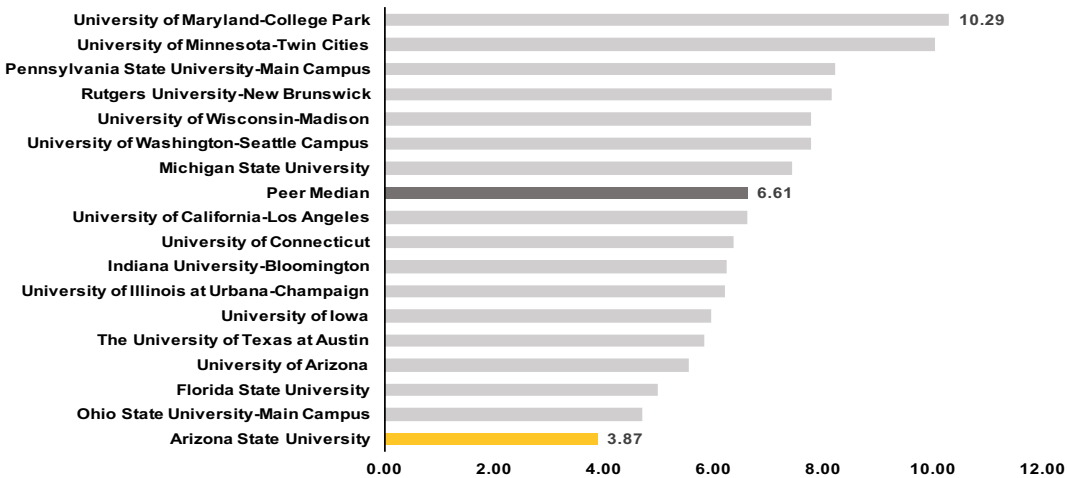
We believe that ASU is obligated by the Arizona constitution to provide affordable access to quality education, and our responsibility to fulfilling our charter is not dependent upon whether the legislature makes reasonable, adequate investments in higher education. On the contrary, we must respond to Arizona's de-investment in higher education, and by extension its economic future, by working harder to close the gap.

Higher Education General Fund Appropriations (2017 Dollars)



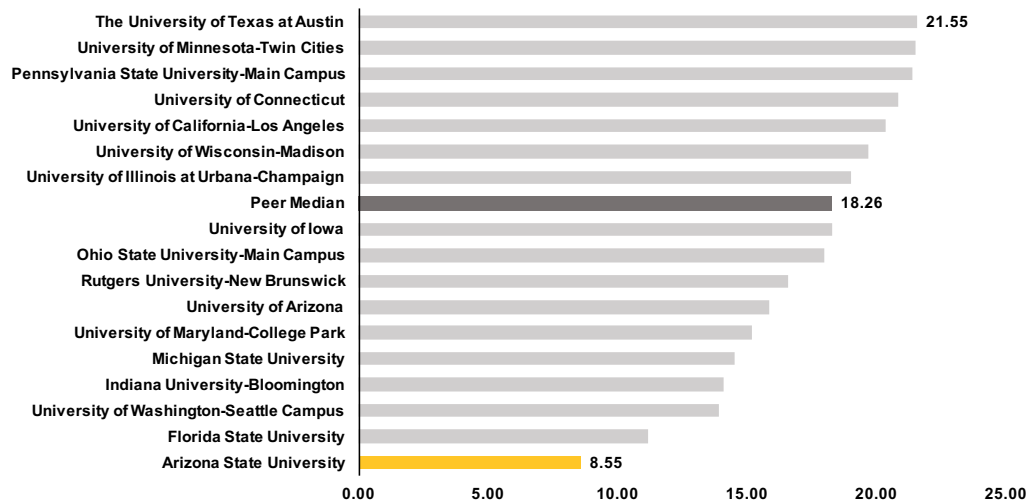
Substantial cost cutting is also not an option. ASU is already one of the leanest, most efficient universities in the nation. We are well under the national median ratio of instructional and non-instructional staff per 100 full-time enrolled students, and through wise investments in technology and programming have managed to continuously improve teaching and research outcomes with fewer resources.

FY 2016 Instructional Staff per 100 FTE Students
ABOR-Approved Peer Schools (Excludes Medical School Employees)



Full-time equivalent postsecondary teachers whose principal activities are for instruction, research and/or public service. They may hold academic rank titles of professor, associate professor, assistant professor, instructor, lecturer or equivalent of any of those academic ranks.

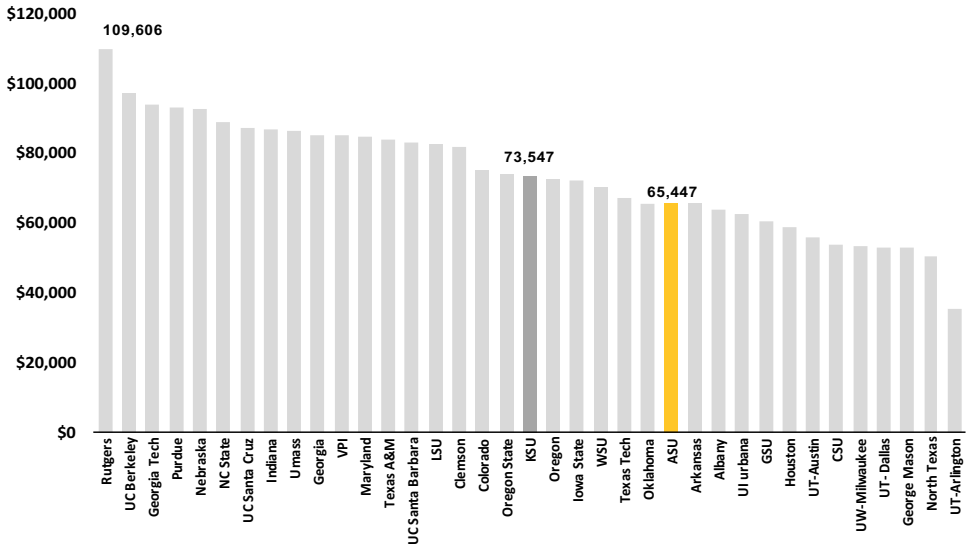
FY 2016 Non-Instructional Staff per 100 FTE Students
ABOR-Approved Peer Schools (Excludes Medical School Employees)



Full-time equivalent employees who are not classified in the postsecondary teachers category.Included are management occupations, office and administrative support occupations and other occupations for the purposes of performing academic support, student services, institutional support and maintenance of facilities.

Another measure of ASU's efficiency is the amount of tuition, fees and state appropriations per degree awarded. When compared with peer institutions around the country, it is clear that ASU powerfully does do more with less.

Tuition, Fees, and State Appropriations per Degree Awarded at Very High Research Public Universities without Medical Schools, IPEDS FY2016



ASU has pursued organizational efficiencies and cost cutting strategies that have made it one of the leanest higher education institutions in the U.S., even while growing its student population to the largest in the nation. By acting as an enterprise rather than an agency, ASU has optimized its core operations in teaching and research while simultaneously making significant strides into new areas. Further cost cutting would be counterproductive, and we know from experience that renewed legislative support may not last for the long term.

Therefore, reaching our ambitious goals for creating the human and knowledge capital to meet Arizona's present and future needs will require ASU to undertake new, entrepreneurial endeavors that can close the gap. In the pages that follow, we describe the a collection of new enterprise programs that draw upon ASU's greatest strengths to maximize its impact on society while providing new resources and revenues to allow us to accomplish our mission for the state of Arizona.

New Enterprise Programs

New Enterprise Programs

Closing ASU's resource gaps in order to drive the university to its 2025 goals will require entirely new enterprise programs. These programs are creative investments in new endeavors that will raise revenue to build ASU's capacity to fulfill the mandates of its charter. Some may ask, why is ASU doing all of these things that universities don't normally do? What does any of this have to do with teaching students and doing research? ASU's reorganization as a New American University reflects its new capacities as an academic enterprise that acts entrepreneurially to create greater value for the public it serves. Through new ways of thinking, ASU is putting existing capabilities to work and redefining the boundaries of what universities can do, without losing sight of principles that keep us focused.

Principles for New Enterprise Programs

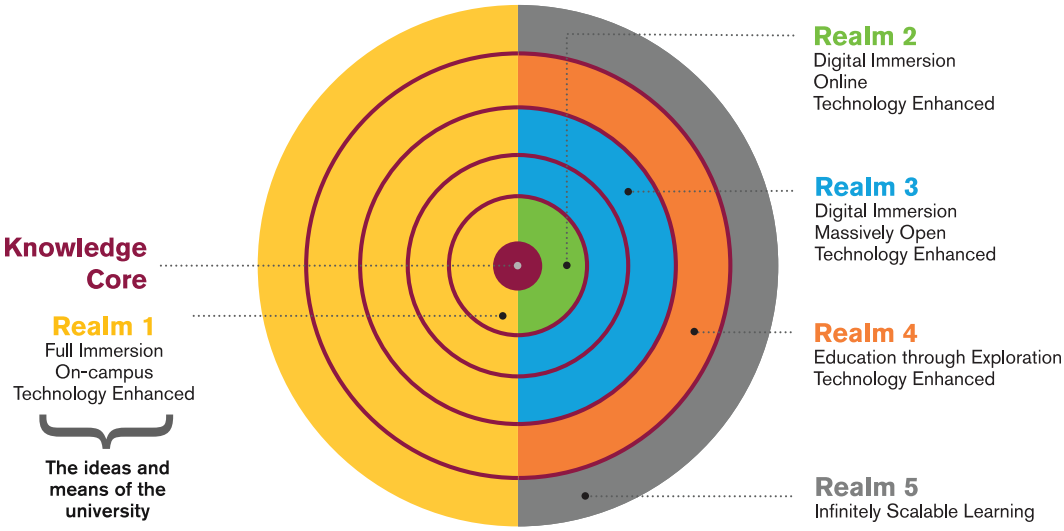
- Stay consistent with ASU's educational and research charter
- Expand institutional capacity to achieve 2025 goals
- Build capacity to close resource gaps
- Support Arizona's economic performance
- Build global partnerships to support the mission
- Expand new higher education methods and educational opportunities to underserved groups

These new enterprise programs stretch across six focus areas that directly relate to or have significant implications for our core operations of teaching and research.

These ventures do not detract from our core mission — on the contrary, they draw upon and bolster our capacities, while creating new revenue that will be reinvested in producing people and ideas that drive the economic, social, and cultural vitality of Arizona and the southwest.

New Enterprise Focus Area #1: Innovation in Educational Delivery

ASU is pursuing initiatives across four realms of teaching and learning, all of which bear the hallmarks of ASU's approach—technological enhancement and broad educational access.



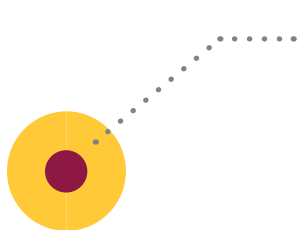
Realm 1: On-Campus/Full Immersion & Hybrid Online

The first realm of teaching and learning includes the traditional on-campus approach, enhanced by technology to facilitate mixed-mode/hybrid online learning and high retention and graduation rates. ASU's four immersion campuses are the home to our faculty and
to the research activities that contribute to innovation and socioeconomic development. Part of our enterprise strategy in Realm 1 is to launch regional centers in Yuma, Safford, Payson and Lake Havasu. These regional centers will extend ASU's reach into growing communities that are currently only served by community colleges or university branch campuses, allowing ASU to increase enrollments.

Global Launch is another key new enterprise program in Realm 1. Aimed at international students, Global Launch is a significant expansion of ASU's successful intensive English program for international learners, which was already the largest of its kind in the country. Although most large universities have these programs, which help international students to improve their English abilities prior to matriculating as undergraduates, with Global Launch ASU has vastly expanded educational offerings to international students, especially in summer terms.

For example, we are training Brazilian teachers to teach STEM subjects, training Peruvian teachers in cutting-edge teaching methods and teaching Chinese to native Spanish speakers. Global Launch is a highly scalable program that allows for greater long-term growth in ASU's non-degree seeking student population, and increases pathways towards degrees.

Two new enterprise programs related to Realm 1 are aimed at students who are not yet enrolled in college. ASU Preparatory Academies (ASU Prep) are two charter schools located in downtown Phoenix and East Mesa that utilize cutting edge pedagogical methods to improve outcomes for underserved students and maximize college preparedness. Of the 2,000 K-12 students at ASU Prep, 76% are from low-income homes. ASU Prep is an undisputed success in providing opportunity to disadvantaged students and creating college pathways: the waiting list is over 1,000 students, and the Academies have seen a 330% increase in enrollment in just three years. Another new enterprise program that helps ASU grow its activities in Realm 1 is Me3, a mobile app that helps early-year high school students to plan for college. Mobile-friendly and visually oriented, Me3 helps students to find out what their interests are and pairs those interests with potential college majors, and helps students to identify high school classes needed for college acceptance. Through ASU Prep and Me3, ASU is expanding the college pipeline to grow its Realm 1 activities, while making a significant impact on the educational preparedness of Arizona high school students.



- Broad admissions standards
- Fluid interface with community colleges
- Socioeconomic status predicts nothing
- All students are literate in science and technology
- 2-3 majors common
- Costs lowered for all
- Scalable to 3x the historic norm

New Enterprise Programs in Realm 1

- Four regional centers
- Global Launch
- ASU Prep
- Me3

Realm 2: Online/Digital Immersion

ASU's second teaching/learning realm is in fully online, digital immersion-based programming. Realm 2 provides us with the capability to increase our degree attainment numbers by reaching potential students who are unable to attend classes on campus. The driving force behind Realm 2 is EdPlus, ASU's signature platform for advancing online learning. EdPlus advances research, instruction, educational design, and partnerships to extend the university's reach through digital technology through the conceptualization, design, implementation, and evaluation of online curriculum that reaches thousands of students domestically and internationally. ASU Online, a part of EdPlus, is our platform for full digital immersion that allows students to obtain a degree without ever setting foot on campus. We aim to increase our online population — with students from Arizona and around the country — from 20,000 to 100,000 by 2025. ASU Online meets the needs of the largest and fastest growing student population segment in the country: non-traditional learners. Less than one in five students enrolled in post-secondary institutions started on a four-year campus upon graduation from high school. Our commitment to online learning recognizes and works to accommodate the diverse and sometimes challenging life circumstances that non-traditional learners face.

ASU has leveraged the strength of its online infrastructure to pursue two significant partnerships that will have a significant impact on enrollments in the years to come. The Starbucks College Achievement Plan allows any Starbucks Partner (barista) to obtain a fully online degree for free. The partnership allows us to target a population that might otherwise face economic obstacles to pursuing educational opportunities, and also to experiment with novel approaches to reaching new student populations. A second new enterprise program in Realm 2 is the PLuS (Phoenix-London-Sydney) Alliance, a partnership with King's College in London and the University of New South Wales in Sydney, Australia. This partnership will focus on underserved populations, offering a mix of certificates and programs through varied teaching modalities. This partnership is especially significant because it represents an expansion of ASU's degree-granting

2

- College completion for the majority
- Lifelong personalized learning
- Lifelong network learning

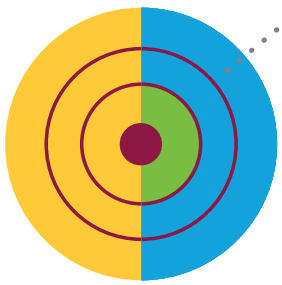
New Enterprise Programs in Realm 2

- EdPlus
- Starbucks College Achievement Program
- PLuS Alliance

online programs into international markets.

Realm 3: Online/Digital Immersion at Massive Scale

The third realm of teaching/learning at ASU is fully online, digital immersion-based programming **delivered at massive scale.** Realm 3 includes boundary-spanning initiatives aimed at learners with limited resources, with offerings that provide non-traditional, non-degree seeking students with pathways to full enrollment. One of our new enterprise programs, Global Freshman Academy, is a partnership between ASU and EdX, the MIT-affiliated Massively Open Online Course (MOOC) provider. Global Freshman Academy offers core freshman classes taught by prestigious ASU faculty in an enhanced online format, and is the first MOOC ever to provide the option of university credit to those who complete courses. In its first three courses, launched in fall 2015, Global Freshman Academy had an initial enrollment of 50,000, with 30-40% demonstrating interest in receiving credit. In the next few years, ASU will scale the program to offer more courses to more students and find new ways of converting them into full-time, degree seeking students.



3

- Enhance social scale learning
- Enhance learning activation
- Enhance college pipeline
- Move at social speed

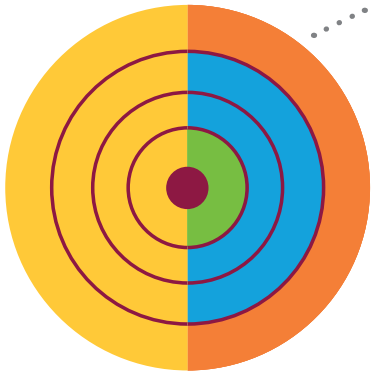
New Enterprise Programs in Realm 3

- Global Freshman Academy
- ASU Digital Academy

Another new enterprise program in Realm 3 is the ASU Digital Academy, an emerging initiative that will offer high-level coursework to high school students at schools with limited course offerings and Arizona students who are unable to physically attend high school. The curriculum of ASU Digital Academy is being designed by the teachers at ASU Prep, and
will be delivered fully online along with access to counseling and coaching. ASU plans to roll out the Digital Academy in 2017.

Realm 4: Education Through Experience

The fourth teaching and learning realm is Education Through Experience, which refers to a new form of totally personalized learning being pioneered at ASU. The idea is for students to establish competency in a collective knowledge base and then pursue differentiation and individuation. At ASU's Center for Education Through Exploration, we are developing ways for students to learn through exploring the unknown rather than simply attaining mastery of the known. The Center's focus is on transdisciplinary questions rather than the traditional disciplinary silos. The Center will design, develop
and deploy interactive, exploration-based digital platforms and teaching networks. This effort represents a true moon shot that will expand the frontiers of higher education. The development of ASU's capacities in this area will create unprecedented reach into global markets and new pathways for impacting students' lives.



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- Global scale engagement
- Totally personalized learning

New Enterprise Programs in Realm 4

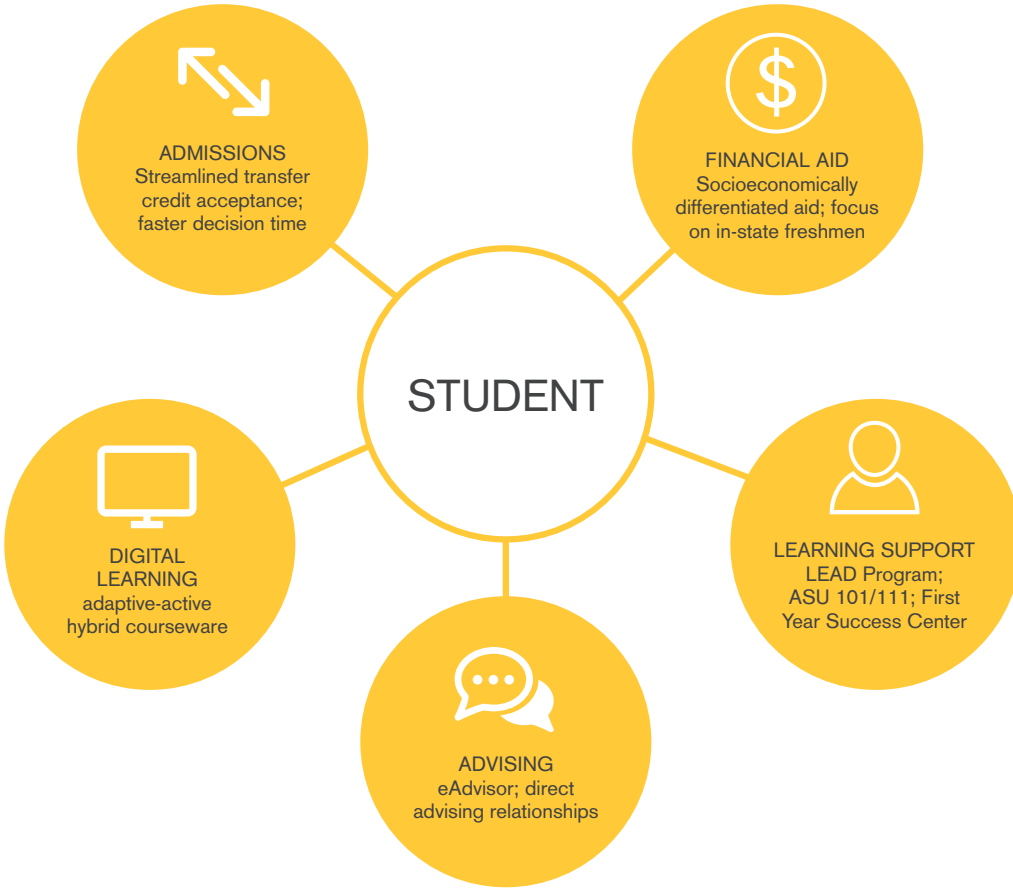
- Center for Education through Exploration

New Enterprise Focus Area #2: Leveraging Technology and Organizational Change for Student Success

For decades, American institutions of higher learning have relied upon the admissions process as a way of pre-selecting the students who are most likely to succeed, excluding those who meet admissions standards but are less likely by various indicators to graduate. This approach fares well enough for freshmen who begin college with the requisite study skills, social support, financial stability, and grit to propel themselves through the college experience, but decreases educational access for those who face challenging life circumstances and have lower understanding of how to navigate the academic world. These obstacles are especially common among students from disadvantaged backgrounds, whether they are the first in their family to attend college, are foster children or were orphaned, or are economically disadvantaged, perhaps even to the point of needing to provide for their siblings or extended family while they matriculate as undergraduates.

ASU's charter addresses these students specifically. By measuring ASU's success not by not by whom we exclude, but by whom we include and how they succeed, we take responsibility for creating educational opportunities for all qualified students. Recall that in Arizona, only nine out of 100 high school students will go on to obtain a college degree, exacerbating the state's shortfall in human capital and limiting the lifelong economic
and social potential of its youth. The solution to this problem is not to weed out "risky" students in the admissions process, but rather to ensure that these students thrive at ASU and go on to graduate despite their disadvantages.

As a university that acts entrepreneurially, ASU is leveraging technology and undertaking organizational innovations to make college affordable to all students, meet their needs through better student support and enhanced advising capabilities, and provide an educational experience that dynamically adapts to the needs of individual students. As evidenced by ASU's year-over-year growth in freshman retention and graduation rates, especially among disadvantaged students, it is clear that our approach is succeeding.



Credentialing

- Clearly stated major requirements—no hidden prerequisites
- "Major maps" of courses required to complete every degree
- Coursework redesign + enhanced course-level support advances students to completion
- Require students to declare major at 45 credit hours, rather than 80, to drive students to appropriate major and department-level support

Admissions and Financial Aid

ASU has made major reforms to its admissions process that has allowed it to grow at scale. The university admits any student who meets the requirements set forth by the Arizona Board of Regents, and does not cap the number of students it admits to a given program or in a given year. From 2007 onwards, the university has used a rapid admissions process that decreases decision time from two weeks to 24 hours, and streamlines acceptance of a student's transfer credits. Upon being admitted, students are provided specialized support in acquiring financial aid. ASU has made the express pledge to all incoming Arizona freshmen—the ASU Promise—that it will help them find an appropriate mix of loans, scholarships, and other forms of support so that they can afford to attend the university, regardless of their financial situation. ASU's differential approach to distribution of financial aid has benefited low income students while keeping tuition affordable for other students, allowing us to increase the number of Pell recipients enrolled from just over 9,000 in 2004 to nearly 28,000 in 2015. During the same time, ASU increased institutional aid to students from $138 million to $288 million, sponsoring an average of 67% of tuition for in-state full time enrolled freshmen. These dramatic policy changes have set ASU apart from nearly every university in the U.S., and account for the university's success in growing its student population to the largest in the nation.

Learning Support for Freshmen

ASU has also developed a suite of resources targeted at freshmen to put them on track for long-term success. With the understanding that many students will start college without a clear understanding of what may be required of them, ASU implemented ASU 101 and 111, two semester-long courses that help students to understand the resources that the university offers; enhance their learning and study skills; and introduce students to opportunities for engagement—a strong predictor of persistence and graduation. Freshmen are also offered one-on-one peer mentoring through the First Year Success program, in which exemplary juniors and seniors help new students to understand their strengths and weaknesses and develop an individualized plan for making the most of their college experience. ASU has also designed and tested the LEAD (Learn Explore Advance Design) Program, a seminar-style class for freshmen identified as at-risk based upon high school GPA and SAT scores. The LEAD program uses small group interaction and discussion to equip students with skills in critical reasoning, reading, communication, emotional intelligence, teamwork, and personal time management. LEAD has been demonstrated to increase the first semester GPA of at risk students from 2.4 to 3.3, and is being scaled to reach more students in the years ahead.

Technology-enabled advising

In 2008, ASU built and implemented the eAdvisor suite, a dashboard for students and their advisors that integrates financial aid, academic progress, and personalized campus housing information to provide customized, holistic support to every student. eAdvisor has since become a nationally recognized tool par excellence, and is one of the major factors in driving ASU's increase in retention and graduation rates. The eAdvisor suite guides students towards selecting a major that suits their aptitude and interests, and gives them a complete roadmap towards degree completion. Students meet with their advisor in person in their first semester, and as necessary based upon data that the program collects about student performance. As students progress through their degree programs, eAdvisor keeps them informed on which courses to take next, ensuring that high-demand or limited courses are always available for those who need to take them to continue. If a student falls off track, such as by failing a required course or neglecting to enroll in necessary courses according to the timeline of their major, eAdvisor automatically contacts the student and his or her advisor so they can meet and resolve the issue. eAdvisor gives students greater awareness and accountability for pursuing their major to completion, and empowers advisors with robust data about every student they serve to increase the quality of interactions with students, while reducing the number of meetings required between students and advisors to address predictable, avoidable problems. It also allows departments to match supply and demand for courses by anticipating the number of students within each major that will need to take required courses. Additionally, eAdvisor has been made available to the Maricopa County Community Colleges to facilitate a smoother transition for incoming transfer students.

eAdvisor Core Functions

- Degree search allows students to explore majors and careers
- Automated course selection ensures adequate seats for critical/required courses
- Real-time progress monitoring informs student of major map completion
- Early warning alert if student is at risk of not meeting major requirements
- Student/advisor meetings automatically facilitated for first enrollment and troubleshooting

Adaptive Courseware

One important facet of ASU's shift into digital learning is the design and testing of adaptive-active hybrid courses, a new approach to educational delivery that represents a fundamental departure from traditional instruction modules. The adaptive courseware approach engages students with online content prior to class, allowing them to learn at different speeds based upon their performance as evaluated by courseware algorithms. In class, students respond to material in active learning sessions.

ASU initially implemented this approach in freshmen math, chemistry, and biology courses—the courses in which passage is most associated with higher retention rates. Adaptive courseware increased success rates in math from 66% in 2009 to 85% in 2015, and has been shown to increase pre- to post-test scores in chemistry and biology by significant margins. 20,000 students already engage with ASU's adaptive courseware each year, and the university is working to expand adaptive courseware to up to 75 undergraduate courses, which will reach 75% of undergraduate students.

Credentialing Pathway Reform

The university has also made significant changes to the way that academic departments guide students towards graduation. Through policy changes that effect greater accountability for departments to increase student retention and degree acquisition, ASU has made it easier for students to focus on their studies, rather than navigating academic bureaucracy. We have incentivized college deans to improve retention rates in the departments they oversee, and set specific goals and metrics to drive student progress towards graduation. Since 2007, students have been required to declare their major after 45 credit hours, rather than 80, which pushes students to departments where they can be supported along a clear pathway towards a degree according to more clearly defined maps of each major. Departments, with the help of eAdvisor, have improved advising practices to maximize positive outcomes for students, and are now technologically equipped to anticipate and respond to course demand so that students do not have to delay graduation because required courses were full or unavailable. These policy changes have been accompanied with a cultural shift towards driving students to rise to challenges, rather than seeing them fail when difficulties arise. Even in programs known for their intensity and rigor, the most challenging courses have been redesigned to be more adaptive and dynamic, so that students improve and proceed rather than being "weeded out."

New Enterprise Focus Area #3: Organizing for Research Innovation

ASU's unprecedented success in growing research expenditures and driving socially impactful research is the result of more than 15 years of ongoing organizational redesign. Now that we have made an institutional shift toward innovation at all levels and made trans-disciplinary collaboration the norm, ASU is moving on to the next phase in organizational development for innovation: the creation of external, affiliated organizations that allow us to push the frontiers of knowledge and discovery far beyond the capabilities of a traditional public university.

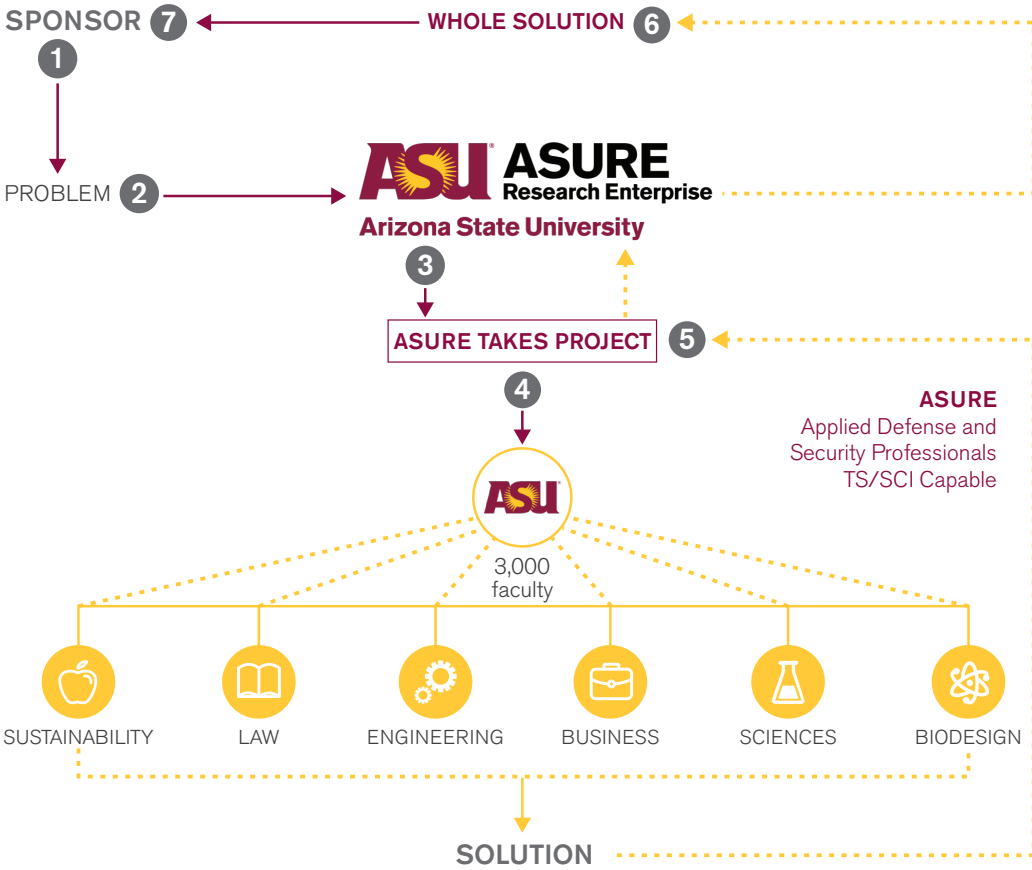
ASU Research Enterprise

ASU Research Enterprise (ASURE), an ASU-affiliated, not-for-profit corporation created to build ASU's capacity for security and defense-relevant research that serves national interests. ASURE acts as an intermediary between national defense agencies and ASU scientists, allowing the university to transcend organizational and cultural boundaries to defense research collaboration.

The United States Department of Defense and agencies in the intelligence community issue billions of dollars of contracts for research and development each year, but university research scientists—whose knowledge is well-suited to advance these efforts—often lack the assistance needed to interface with agencies, meet security requirements, and understand their technology acquisition systems.

ASURE employs experienced professionals with military, defense and technology backgrounds to provide the technical expertise, operational capabilities, and domain knowledge to close this gap. The ASURE team assembles expert faculty teams to tackle national security projects across multiple domains such as computer networking, supply chain management, data mining, unmanned vehicle control, human-machine decision making, water purification, and healthcare. By handling the bureaucratic requirements associated with executing projects under defense and intelligence acquisitions, ASURE brings the full weight of ASU faculty's innovative thinking to the fore.

ASURE's status as an affiliated but separate, self-governed organization allows for streamlined security clearance acquisition, simplified compliance, and greater overall agility in project execution.



ASU Research Collaboratory

The ASU Research Collaboratory is another important new venture that builds ASU's capacity for innovation in research and services delivery. The Research Collaboratory serves as an incubator for high-impact initiatives of university faculty and students, providing the legal, financial reporting and governance support to shepherd ideas into the market. The first major initiative of the Research Collaboratory, the National Biomarker Development Alliance, is a world-class research initiative to advance global standards for development of biomarkers and guide their trajectory into widespread clinical application. As an endeavor of tremendous complexity that requires a high degree of agility and independence to succeed, the Alliance's development would be slowed down by direct management by the university. The Research Collaboratory allows ASU to provide indirect support, putting us at the forefront of the personalized medicine revolution while giving the Alliance room to succeed. As a privately administered 501(c)3 organization, the Research Collaboratory is also able to manage the finances of some university international projects, widening ASU's global reach. For example, the Collaboratory allows ASU to maintain a repository of historical artifacts and artwork in Mexico for the university's Teotihuacan Research Laboratory.

The ASU-Mayo Alliance for Health Care

The Mayo Clinic is one of the world's foremost medical practice and research organizations, and has partnered with ASU in various ways for more than a decade. In October of 2016, we expanded and formalized this partnership through the launch of the Mayo Clinic and the Arizona State University Alliance for Health Care. This Alliance brings together the brightest minds together to accelerate cutting-edge research discoveries, improve patient care through health care innovation, and transform medical education to enhance health outcomes at individual, community and national levels.

Our collaboration on the Science of Health Care Delivery with Mayo Clinic brings together diverse aspects of the medical field under a single curriculum that addresses health care administration, research, legal practice, and clinical care and training. It fuses ASU's knowledge and teaching assets with Mayo Clinic's expertise in operating a medical school, eliminating onerous administrative burdens and the need for reduplication of courses across departments. The Alliance is advancing a new model for medical education that reimagines the physician of the future. Beyond just training doctors to become subject matter experts, the transformative co-developed curriculum will train future physicians to respond to the practical challenges of working in a highly complex health care system. All medical students in the program will obtain a joint certificate in the Science of Healthcare Delivery, which trains doctors in patient-centric care, population health, leadership and

data-driven decision making. The Alliance provides the Mayo Clinic with a mechanism for offering dual degrees to their students in MD/MBA, MD/JD, MD/Master of Mass Communications, MD/Masters in Biomedical Diagnostics, and MD/Masters in Advanced Studies in Health Informatics. This specialized, additional education creates a more well-rounded physician, provides an immediate competitive edge in residency programs, and a gives graduates a long term advantage in career advancement.

In addition to training the health workforce of the future, the Alliance will drive forward technological innovations that can only be made possible by fusing the knowledge assets of a university of ASU's scale and disciplinary breadth and depth with top tier medical research infrastructure. The Alliance will advance joint research in improving the science of healthcare delivery to increase quality and cost performance; biomedical informatics to enable personalized care; biomedical engineering to assist with functional restoration, and proton beam therapy development to allow for precise diagnosis and treatment of tumors. Interdisciplinary, team-based scientific research are supported through seed grants, medical technology accelerator programs, and a new, 150,000 square foot Health Solutions Innovation Center, adjacent to the Mayo Clinic Phoenix campus, scheduled to break ground in 2017.

New Enterprise Focus Area #4: Technology Commercialization and Entrepreneurship

As a university that acts as an enterprise rather than an agency, one of ASU's core design aspirations is to value entrepreneurship. ASU empowers its students and faculty to pursue entrepreneurial ventures that allow their knowledge and research to impact the wider world through commercialization. In addition to providing the resources to making this possible through funding and programmatic support, ASU has launched several new enterprise programs to effect an organizational and cultural shift towards entrepreneurship.

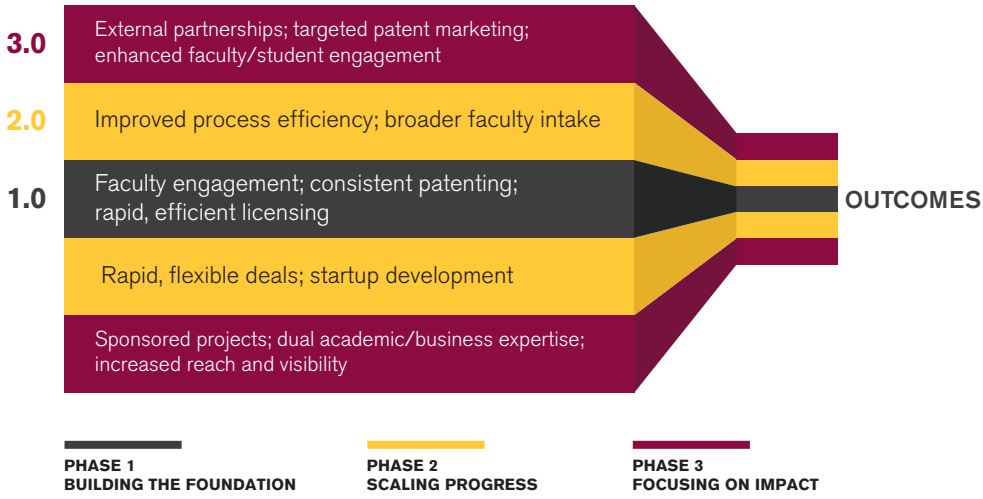
AzTE: Reimagining Technology Transfer

Technology transfer refers to the process of disseminating technology from the point of its invention into society at large. Federal research funding agencies do not support the work of university researchers merely to subsidize their curiosity. Discoveries made in university labs can be developed into products and services that improve lives, launch companies, create new industries and generate new jobs. Many of the technologies we now take for granted—from search engines to therapies for cancer—were developed
at universities and commercialized through technology transfer. However, successful technology transfer rarely happens organically, as faculty members often lack the resources, interest, or aptitude to bring their inventions to the marketplace. Therefore, federal mandates stipulate that research universities must devote resources to creating and maintaining technology transfer offices tasked with commercializing intellectual property developed by faculty.

Arizona Technology Enterprises (AzTE) is ASU's technology transfer organization and the exclusive manager of its intellectual property assets. From its launch as an ASU-affiliated limited liability company in 2003, AzTE has established itself as a very different kind of technology transfer organization that meets ASU's unique needs as an uncommonly fast-paced, innovative university.

AzTE's evolution has taken place in three phases. At its founding, AzTE created a system for university-wide faculty engagement, consistent patenting, and rapid and efficient licensing of faculty inventions. With the foundation laid, AzTE's second phase focused
on organizational scaling and operational efficiencies to dramatically increase the flow of technology from ASU labs into commercial application. AzTE continues to operate at a high rate of deal flow, as measure by cross-university output statistics, but its mastery of process has now allowed the office to focus on impact.

The Evolution Of AzTE



This novel approach acknowledges that commercialization revenues are increased by creating optimal conditions for faculty innovation, corporate partnership, and knowledge transfer, broadly defined. Therefore, AzTE's approach bears several characteristics that differ substantially from traditional university technology transfer offices to promote greater long term growth potential:

- Programs and metrics for faculty and student engagement. AzTE has enacted programs and engagement strategies to promote a culture of entrepreneurship and service to faculty, and worked to promote faculty and students' awareness and trust of AzTE as a partner in commercialization.
- External partnerships. AzTE invests in partnerships with economic development organizations, including local economic development organizations and academic institutions, to create new avenues for publicity of faculty inventions and dissemination of research.
- Expanded visibility and geographic reach. Through ASU's Santa Monica, California-based office, AzTE advances partnerships with investors and research institutions to promote successful technology transfer outside of Arizona.
- Targeted marketing of ASU technologies. Whereas many technology transfer offices passively publicize their patent portfolios, AzTE takes a proactive, data- and relationship-driven approach to identifying potential licensees, development partners, and investors, resulting in greater external interest in partnership, licensing and acquisition.

- Hiring for success. Technology transfer offices are often staffed with late career academics who lack the experience and connections to manage technology portfolios. AzTE has shifted towards management by individuals with extensive combined academic expertise and private sector experience, allowing it to bridge cultural and knowledge barriers to technology transfer.
- Promotion of sponsored research contracts. The traditional approach to technology transfer is to commercialize early stage technologies as fast as possible, irrespective of the likelihood of market success. Taking a holistic, long-term view, AzTE assists faculty in pursuing opportunities for contracted and sponsored research based upon their IP. This work raises revenues for the university and increases the likelihood of successful transfer by deepening relationships with potential partners and licensees and by advancing the maturity of the technology.

The strength of AzTE's approach is evident through various metrics of technology transfer success.

AzTE 2003-present

- 2,500+ invention disclosures
- 800+ Licenses/Options Executed
- $600M+ ASU-linked startup funding ($96M in FY '16)
- 500+ ASU-linked startup jobs created
- 97 Startups

Supporting Entrepreneurship

As a major driver of innovation and economic development in the Phoenix metropolitan area and the region, ASU is committed promoting and supporting entrepreneurship at the university and in the community. This activity is the operationalization of one of ASU's core design aspirations — to value entrepreneurship — and fulfills our charter's charge to assume fundamental responsibility for the economic, social, cultural and overall health of the communities we serve. Our new enterprise strategies related to entrepreneurship and innovation raise revenues to support a host of valuable services and resources to students and the community, including training, competitions, mentorship, access to innovation and maker spaces, seed funding to faculty and students, and more.

ASU's Office of Entrepreneurship + Innovation (E+I), a part of the university's Office Knowledge Enterprise Development, acts as a shared services model that provides outreach, engagement, facilitation, and venture development programs to create mutual value for startups, the community, and the university. One of E+I's signature programs, ASU Startup Accelerator, provides 12 months of acceleration support to startups on a contract basis, raising revenue to advance the university's efforts to promote entrepreneurship. The accelerator provides office space, discounted business services, mentorship, and training for business success online through the ASU Startup School and in-person through the Venture Development School. A complementary initiative that expands E+I's reach is the ASU Entrepreneurship Outreach Network, a network of libraries and economic development organizations that provides a menu of support services including continuing education, training, and access to ASU Startup School curriculum.

E+I also cultivates high-impact external partnerships to support and expand its programs and reach. Since 2007, we have raised $9 million in funds, including $3.8 million in the last year alone, from partners such as the Kauffman Foundation, Verizon Foundation, JP MorganChase, Silicon Valley Community Foundation, the National Science Foundation, and local economic development organizations for a variety of programs that increase ASU's capacity to support entrepreneurial ventures of its students, faculty, and the community at large. These programs include awards to student startups, innovation/pitch competitions, programming support for youth, women, and underserved minorities in entrepreneurship, and faculty support.

Startup Mill, a joint endeavor between AzTE and E+I, identifies the most promising student- and faculty-led startups and select outside startups to receive incubation, acceleration, and strategic investment support. The program matches startups with experienced venture capitalists and executives who provide mentoring, direction, and management, and provides university resources including laboratories, equipment, and partnership opportunities. These services help to close the critical gaps in resources and connectivity that cause so many startups to stagnate and fail. However, Startup Mill was not created just to help startups: by placing special emphasis on selecting startups that have the potential to make substantial contributions to job creation and economic development as they grow, the program will have an appreciable impact on the economic vitality of the region in the years ahead. The program also provides mutual benefit to ASU. In exchange for providing world-class services and resources, AzTE may take equity stakes or royalties in the company, making the university a co-investor in the long term success of these ventures.

New Enterprise Focus Area #5: International Development

Commitment to engaging globally is one of the core design aspirations that has guided ASU's institutional evolution. By established metrics, ASU is an undisputed leader in higher education internationalization. The university is home to the third largest international student population of any public university; sends over 2,000 students to study abroad each year; and has international partnerships with universities in six continents. This tremendous success would be enough for most universities—yet we see it not as a terminal point, but rather the foundation for making an even greater impact.

Existing first and foremost as a public and social value enterprise, ASU possesses vast capabilities to solve problems not only in the community, but also at a global scale. In the last several years, ASU has mobilized these capabilities for projects that aim to solve the global challenges of our time, enhance the quality of life for people around the world, and promote global stability that also benefits U.S. national security interests. These projects fall under the broad umbrella of international development, and are funded by the federal government through agencies such as the U.S. Agency for International Development (USAID), the U.S. Department of State, and Millennium Challenge Corporation, and by international organizations such as the World Bank and United Nations World Food Programme.

The international development industry consists of more than 200 highly specialized for-profit firms and non-governmental organizations that compete for federal and private funds to implement projects around the world. These organizations are often situated in Washington, D.C., and are backed by long histories, huge networks, and expert personnel that can be rapidly deployed at a moment's notice. The extremely competitive nature and nearly impenetrable culture of the industry means that few universities bid on international development projects, and those that do often focus on one area of expertise, such as Johns Hopkins University in medicine and Michigan State University in agriculture. Additionally, universities, because of their often well-deserved reputation as slow moving, inefficient bureaucracies, are rarely considered by international development firms and agencies to be viable potential partners.

But as a university that acts as an enterprise, we have proven able to develop significant opportunities where others would see insurmountable challenges. Over the last five years, ASU has strategically and intentionally built relationships with international development agencies and many of the top firms in the industry, quickly building a reputation as a capable, agile partner and implementer for large scale projects. To carry out this work, we established ASU International Development (ASU ID), a specialized office that retains top industry experts who understand the international development

funding landscape. With personnel in both Arizona and Washington, D.C., ASU ID allows us to bridge the cultural and knowledge gap between the worlds of academe and international development funding agencies and implementing firms.

USPCAS-E: Enhancing Education and Energy in Pakistan

Pakistan is one of the most strategically important countries in the world, and promoting its stability and prosperity is critical to U.S. and global security interests. In 2016, ASU successfully secured $18 million in USAID funds to lead the U.S.-Pakistan Centers for Advanced Studies in Energy (USPCAS-E), a partnership between ASU and two leading universities in Pakistan focused on applied research and education to advance Pakistan's energy sector. The partnership leverages ASU's expertise in higher education, university design, applied research, and energy to help Pakistan release its enormous potential for economic growth through its universities. USPCAS-E will generate cost-effective and sustainable solutions for Pakistan's energy challenges, and empower Pakistan's next generation of energy experts, especially women and youths from disadvantaged backgrounds. USPCAS-E is a model for how ASU is expanding its global footprint in meaningful ways, realizing its potential as an idea generator with the influence and potential to change lives throughout the developing world.

Leveraging Research for Real-World Impact

ASU is a national leader in growing research expenditures from traditional funding sources, including federal agencies such as the National Institutes of Health and National Science Foundation, as well as private industries and philanthropic foundations. The university research supported by these public and private investments is often relevant to global development, and ASU is one of the few institutions in the nation to systematically leverage its research capabilities to pursue international development funding to solve global development challenges.

ASU International Development specializes in seven areas that reflect the university's geography, design aspirations, and unique research portfolio. ASU ID systematically surveys the funding environment for opportunities to apply the university's expertise across these areas, identifies prospective partner organizations, and assembles expert interdisciplinary teams with country-specific knowledge to tackle projects.

As a New Enterprise Strategy, ASU's work in international development is not only a tremendous success from the perspective of increasing research expenditures, but especially in terms of the impact it makes on the lives of people and communities in the developing world. ASU International Development translates the university's research into innovative solutions that are deployed in-situ across the developing world, bridging the gap between theory and application to make a meaningful impact. Through the Women and Entrepreneurship in the Americas program, which is supported by USAID, the Inter-American Development Bank, Goldman Sachs, and other partners, experts at ASU's Thunderbird School of Global Management provide training and mentorship to women entrepreneurs to promote community development and economic prosperity. In the recently concluded India Support for Teacher

Education Program (In-STEP), funded by USAID, faculty researchers and practitioners at ASU's Mary Lou Fulton Teachers College trained 110 Indian teacher educators in cutting edge teaching methodologies, information technology, and accountability and reform measures. And in El Salvador, a country where citizens and communities face some of the highest rates of violent crime in the world, ASU is enhancing the ability of civil society organizations and private sector leaders to understand and address the causes of gang violence and broker peace between criminal organizations.

Around the world, ASU's work is empowering women, driving economic growth, building local educational capacity, improving healthcare outcomes, promoting sustainable development, creating freer and safer societies, and enhancing the abilities of governments and communities to make accurate, data-driven policy choices.

VOCTEC: Building Clean Energy Capacity for the Developing World

The Vocational Training and Education for Clean Energy (VOCTEC) program, a partnership between ASU, USAID and the International Renewable Energy Agency, mobilizes ASU's leadership and expertise to promote sustainable renewable energy infrastructure and investments in developing countries. Through VOCTEC, ASU provides local technicians with the knowledge, training and capacity to install, operate and maintain solar PV, micro-hydro, wind energy, and micro/mini-grid power systems. VOCTEC builds human capacity for clean energy systems, developing lab and training infrastructure, preparing clean energy workers for certification for international standards, and establishing the foundation to pass this knowledge on to future generations in these countries.

To date, VOCTEC has trained hundreds of technical professionals, leaders, educators and entrepreneurs, including women, in 20 countries, including Vietnam, Guyana, Liberia, India, Sierra Leone, Kenya, Nepal and numerous Pacific island nations.

554 TECHNICIANS TRAINED

195 EDUCATORS TRAINED

115 POLICY MAKERS TRAINED

20 COUNTRIES IMPACTED

20 ENTREPRENEURS TRAINED

HEEAP: Transforming Vietnamese Higher Education to Build a High-Tech Workforce

The Higher Engineering Education Alliance Program (HEEAP) is an ASU-led public-private partnership to build Vietnam's high-tech manufacturing industry and workforce. HEEAP targets Vietnamese higher education institutions, scaling ASU's entrepreneurial model of the university as a use-inspired research and economic development engine,
to build their capacity to produce highly skilled workers to meet the needs of industry. Starting in 2011 as a partnership between ASU's Ira A. Fulton Schools of Engineering, USAID, and Intel, HEEAP has grown into a $25 million program that includes Vietnam's top technical universities and vocational schools, additional U.S. university partners, and a growing coalition of industry partners. Through the Vocational and University Leadership and Innovation Institute (VULII), a three year HEEAP project funded by USAID, ASU is fostering systemic change in higher education to build research and training capacity and promote academic leadership within the Vietnamese educational system. USAID also awarded ASU with an additional $10.8 million in 2015 to support Building University-Industry Learning and Development Through Innovation and Technology (BUILD-IT), a follow-up initiative to align STEM instruction in Vietnamese higher education institutions to the needs and capabilities of industry partners. HEEAP's instructional approach produces technically competent, work-ready graduates who have in-demand skills and knowledge. To date, HEEAP has trained 3,498 participants in US-based and in-country workshops.

New Enterprise Focus Area #6: Reinventing University Philanthropy

Philanthropy is an essential feature of the U.S. higher education system. Some of the nation's greatest institutions, including Stanford, Johns Hopkins, and the University of Chicago, were established through philanthropic giving. Arizona State University is no exception. The ASU main campus in Tempe is built on land that was donated in 1885 to the 13th Legislative Assembly of the Arizona Territory by a butcher named George Washington Wilson and his wife, Martha. Their gift helped to establish Tempe Normal School, the territorial teachers' college that would later become Arizona State University. Today, ASU's philanthropic tradition continues through the work of the ASU Foundation for a New American University, a separate, affiliated 501(c)3 organization that raises and manages funds to support the work of ASU. Although most public universities maintain affiliated philanthropic organizations to raise funds from community benefactors, charitable foundations, and corporations, the ASU Foundation stands out as a vanguard for advancing innovative, nationally distinctive approaches to philanthropy.

The Arizona Territorial Normal School, 1886

The ASU Foundation is leveraging new technologies to enhance traditional fundraising activities and create entirely new pathways for donors to support causes at Arizona State University. The foundation is among the first in the nation to use four new technology-enhanced approaches that are driving its success in fundraising:

- Using big data analytics tools to acquire a deeper understanding of what donors care about and to find new, data-driven insights into philanthropic trends.
- Using new technology to gain insights from social media platforms that allow us to understand donor and community perceptions of the university in unprecedented ways.
- Piloting a next generation platform for philanthropic data management that gives fundraisers greater ability to maintain relationships with ASU supporters in the community. The foundation has established a partnership with Georgetown University to share insights, knowledge and resources to advance its development.
- Leading a new trend in fundraising for the work of ASU students through Pitchfunder, a proprietary crowdfunding platform. Pitchfunder allows students to raise funds for their endeavors, with publicity assistance from the ASU Foundation. It also builds long term affinity between students and the university, educating participants of the importance of philanthropy. A small percentage of the proceeds of successful Pitchfunder campaigns are used as direct support to the university.

Each of these approaches are game-changing in their own right, and the use of all of them combined is making a major impact on the success of the ASU Foundation's fundraising record. In FY 2016, the ASU Foundation raised a record breaking $216 million, helping ASU's endowment to grow beyond $1 billion and providing $42 million in scholarship funds to over 8,400 students.

New Enterprise Focus Area #7: Real Estate Development

Since embarking upon the reinvention of ASU as a New American University in 2003, we have sought to not only increase the university's impact in the community, but also its presence. The construction of the ASU downtown Phoenix campus, the expansion of the Tempe campus into the Mill Avenue, and Athletic Facilities Stadium District are examples
of the way that ASU is changing the face of metropolitan Phoenix through its commitment to being embedded in the community.

Although it is not uncommon for universities to make real estate purchases for capital upgrades, ASU's larger vision for its role in the community requires an expanded approach that allows the university to make real estate transactions as a private enterprise would.
For this purpose, University Realty, LLC, was formed as an independently managed, ASU-affiliated private company that works to build the university's physical presence in the community by developing real estate assets to financially support ASU's mission. University Realty is a novel organizational design that strategically advances the university's mission in three ways.

University Realty Strategies

1. Enable philanthropic gifts of real estate **to be monetized and sold or used as equity to support ASU.**

   Benefactors of ASU can donate office, industrial, retail and multifamily buildings, as well as farm or vacant land, as charitable gifts to the university. University Realty mobilizes resources for renovation and development to maximize their value and holds them until an opportune time
   to sell, or helps these properties to be integrated as permanent ASU assets.

2. Capitalize on opportunities **to purchase properties to fulfill space needs of ASU or be sold to support ASU.**

   University Realty strategically surveys the market for high value investment opportunities, and when the time is right, acquires properties that make a transformative impact. For example, the Brickyard on Mill—a seven-story, 202,000-square-foot building adjacent to ASU's campus and in downtown Tempe, Arizona—was acquired in 2004. The Brickyard has become a vital, permanent feature of ASU's main campus and serves as home to multiple academic units including the Ira A. Fulton Schools of Engineering; the ASU Art Museum Brickyard Ceramics Research Center; the School of Arts, Media and Engineering; and ASU's Decision Theater.

ASU Washington, D.C., Center

Scheduled to open in 2017, ASU's new Washington, D.C., Center will serve as the university's platform for engagement with national and global affairs, increasing its visibility and capacity for impact. Just three blocks away from the White House, this 8-story office structure will facilitate the activities of 18 ASU academic units, providing space for visiting scholars and student interns, and even housing a news studio for broadcast journalism students from ASU's Cronkite School. The acquisition of the Washington, D.C., Center exemplifies the strength of the University Realty model and its ability to turn market opportunities into successes for ASU.

Washington D.C Center

The Brickyard

3. Development of office, industrial and multi-family projects **that drive economic, social and community development and provide revenue for the university.**

University Realty provides a variety of ground-up development services to support projects that make meaningful contributions to the metropolitan Phoenix urban landscape. These projects directly benefit ASU by generating revenue to promote university activities and by increasing the value of ASU's endowment. One such project is ASU SkySong, a development in Scottsdale that incubates ASU startups and is home to a broad mix of companies across 60,000 square feet in four innovative office buildings.

One of the most recognizable structures in metropolitan Phoenix, ASU SkySong is a hub for business activity in the valley that drives creativity, cultivates entrepreneurial talent, and promotes economic development and corporate engagement. At total build-out, ASU SkySong will grow to inhabit 1.2 million square feet of office space and 42 acres of land.

An exciting new project breaking ground in 2018 will be Mirabella at ASU, a twenty-story life plan community for senior housing located on the university's Tempe campus. As a true lifelong learning community, Mirabella will leverage its affiliation with and proximity to ASU to facilitate meaningful engagement between its residents and the ASU community. Partnerships with ASU's Osher Lifelong Learning Institute, Herberger Institute for Design and the Arts, and School of Nutrition and Health Promotion will provide residents learning opportunities, art and music, medical care and opportunities to teach and volunteer.


Mirabella at ASU


ASU SkySong

Conclusion

Conclusion

The Frontiers of Arizona's Prosperity

Even with all of the reasons to be positive about Arizona's future, there is still a great deal of work to be done. By many key metrics, Arizona lags behind the rest of the country. We rank 42nd in per capita personal income, meaning that many have yet to benefit from the state's ongoing economic transformation. Education spending per pupil is the third lowest in the nation, creating unnecessary and unfortunate barriers to the future flourishing of Arizona's children. And Arizona has the third highest poverty rate in the entire country, a fact that demonstrates just how great a task we have ahead of us. In the face of these uncomfortable realities, the cost of inaction for future generations will be staggering.

Arizona State University is responding to these challenges by embracing a bold, entrepreneurial spirit that is uncommon among higher education institutions and public organizations. ASU's redesign in the last 15 years has placed the university front and center at the transformation of Arizona's economy and the revitalization of metropolitan Phoenix. The transformation from agency to enterprise outlined here supports ASU's mission to help Arizona realize its full potential and reach the frontiers of prosperity in the years to come.

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