

**Arizona State University**

# **Strategic Enterprise Plan:**

**2016 Update & Operational and Financial Review**

Arizona Board of Regents

February 4, 2016

# Today's Presentation

Progress towards achieving metric goals

The 2025 metric goals in context

Arizona's current incomplete socio-economic /competitiveness trajectory and the critical role of higher education in preparing for future competition, change and opportunity

The current public investment model will not allow us to move as quickly as needed to play this critical role

ASU's enterprise strategy and its emerging elements

# 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.

# Responsibility and The Public Trust

The charter is a promise to the citizens of Arizona.

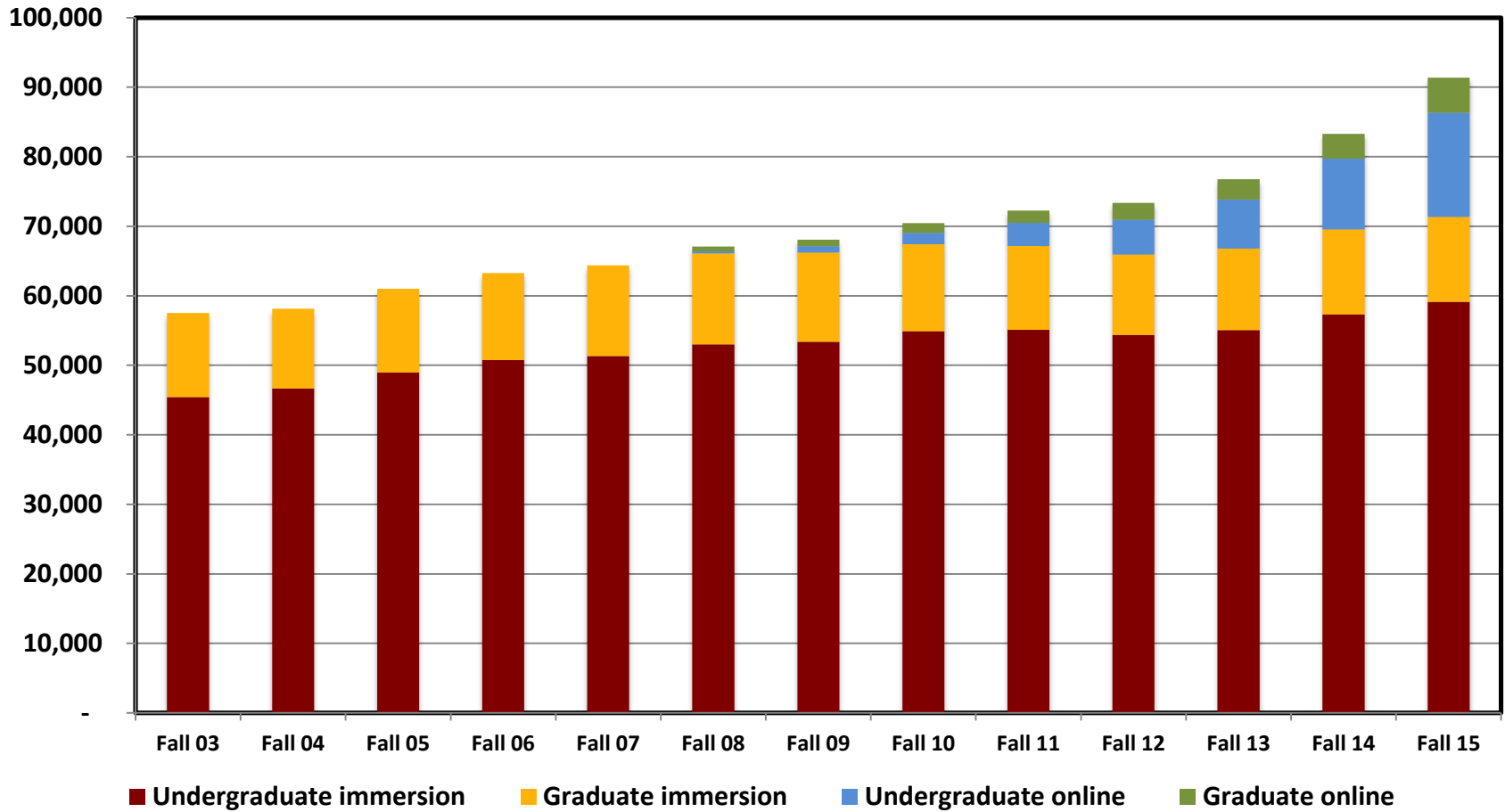
ASU has a responsibility to fulfill the requirements of the Arizona Constitution to provide public education.

The responsibility is not one that is conditional upon the actions of the legislature; it is ASU's responsibility to find the means to fulfill its charter while seeking appropriate and fair public investment.

# Progress on Key Metrics

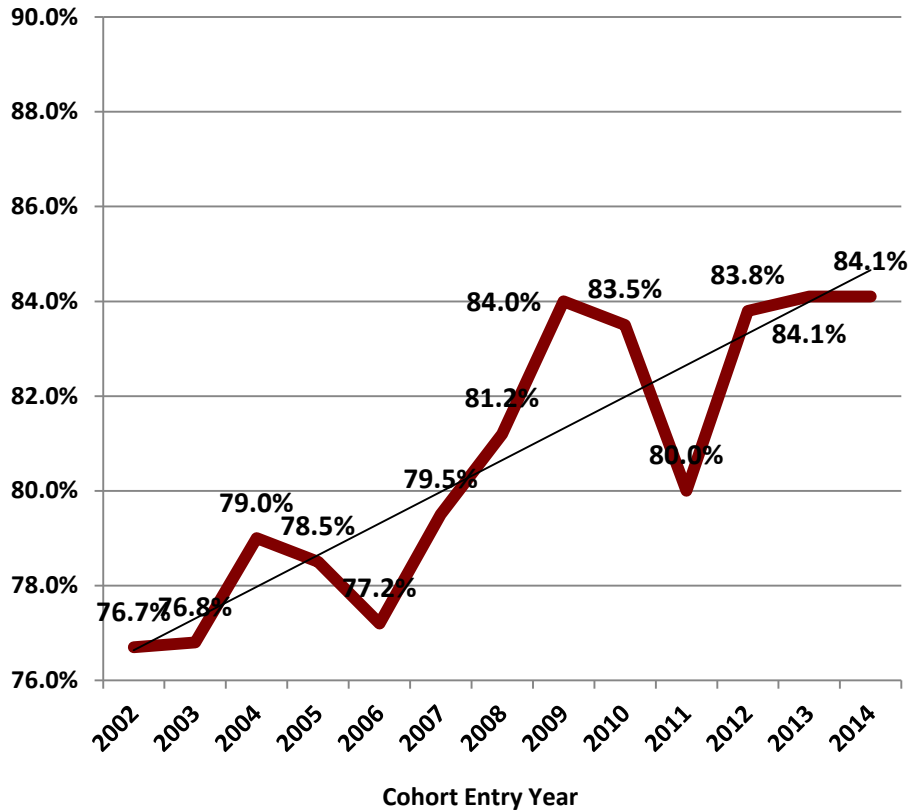
# Total Enrollment

## Full Immersion/On-Campus and Digital Immersion/Online

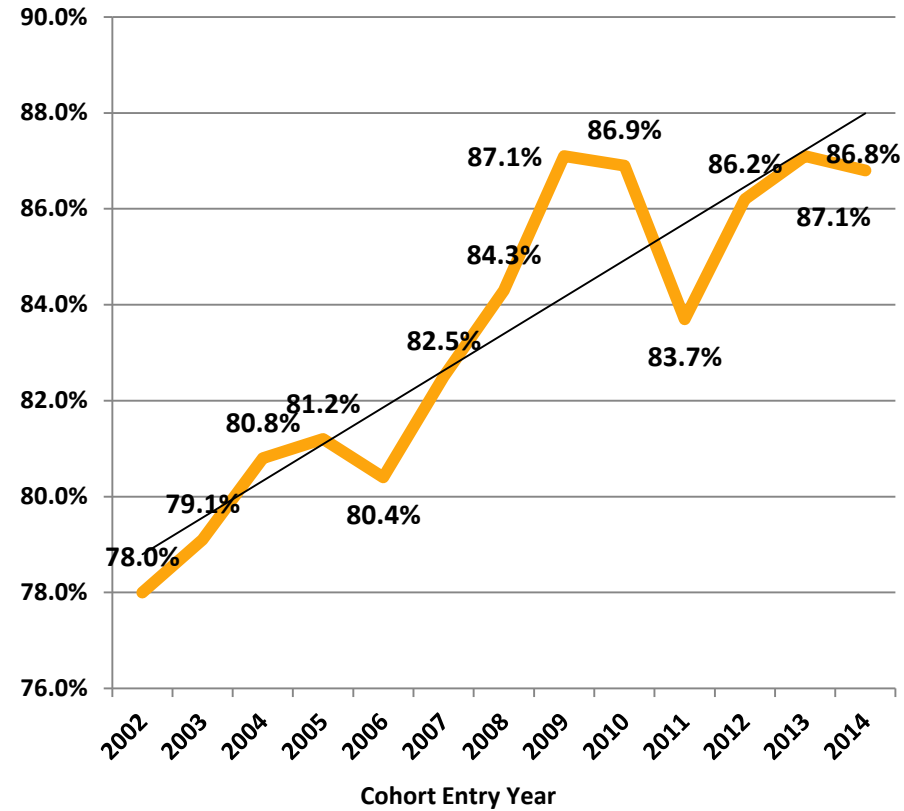


# Freshman retention increases through ongoing process improvement

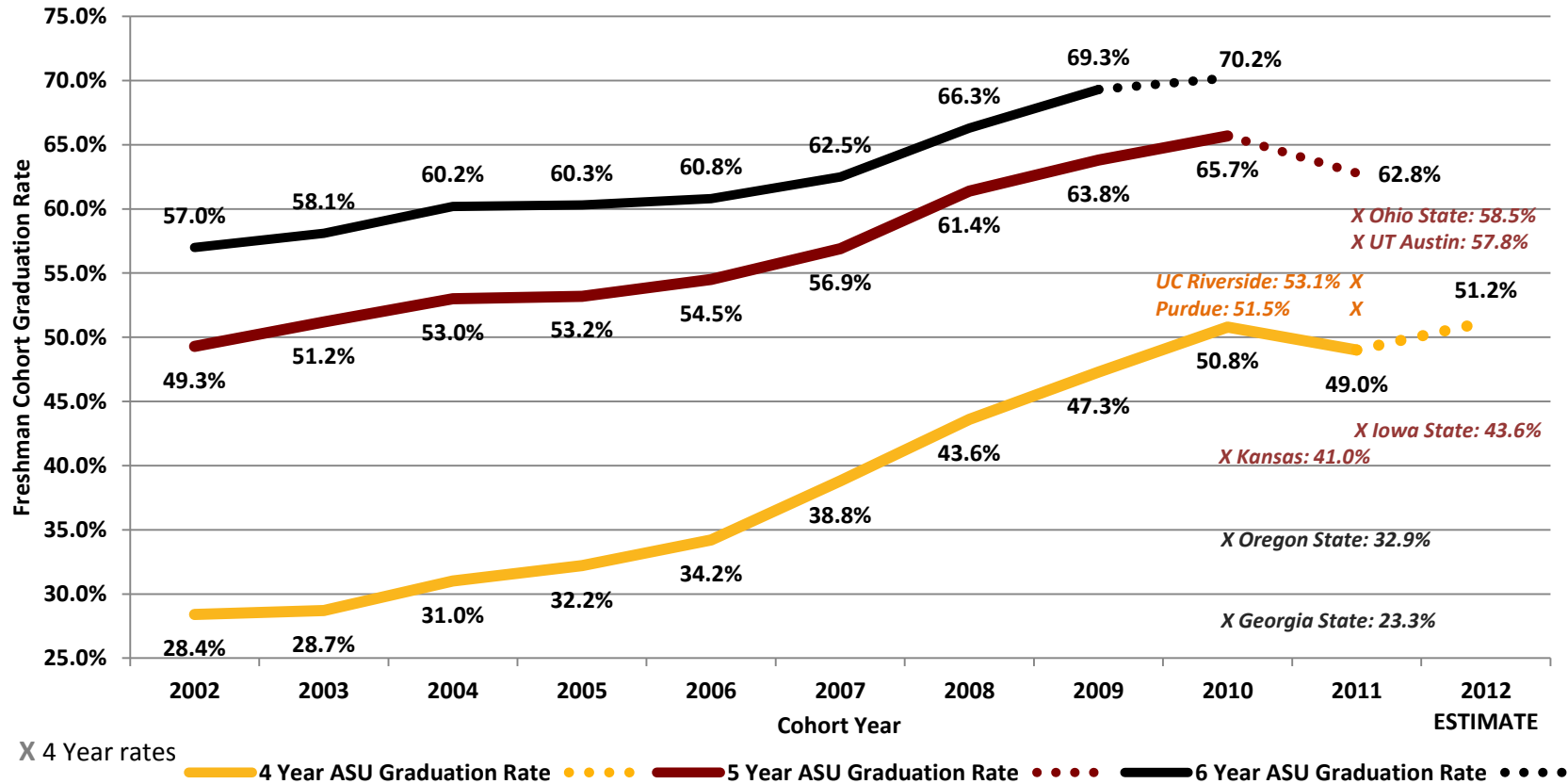
## Total Freshman First Year Retention



## Arizona Freshman First Year Retention

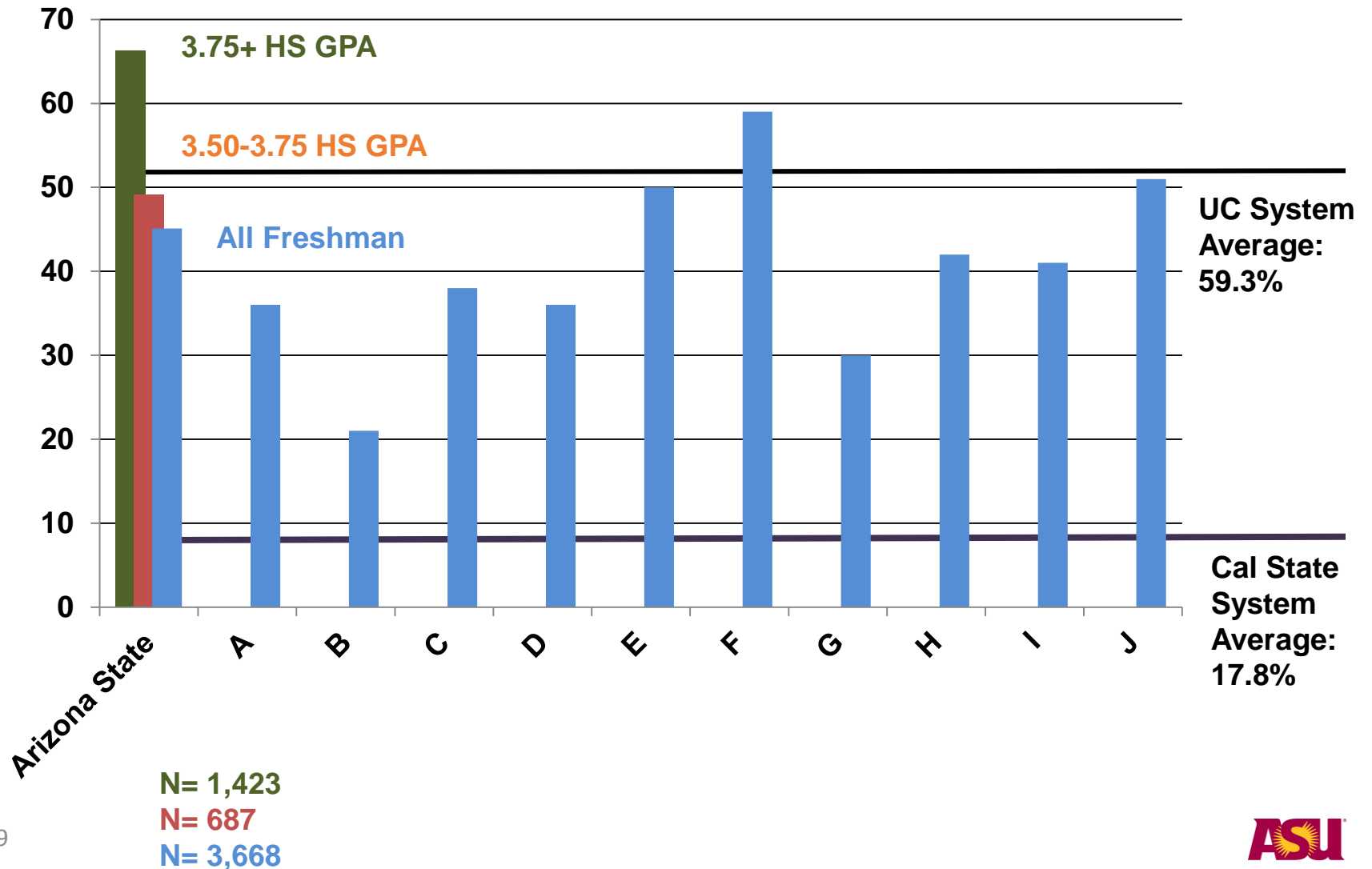


# Arizona Resident Graduation Rates

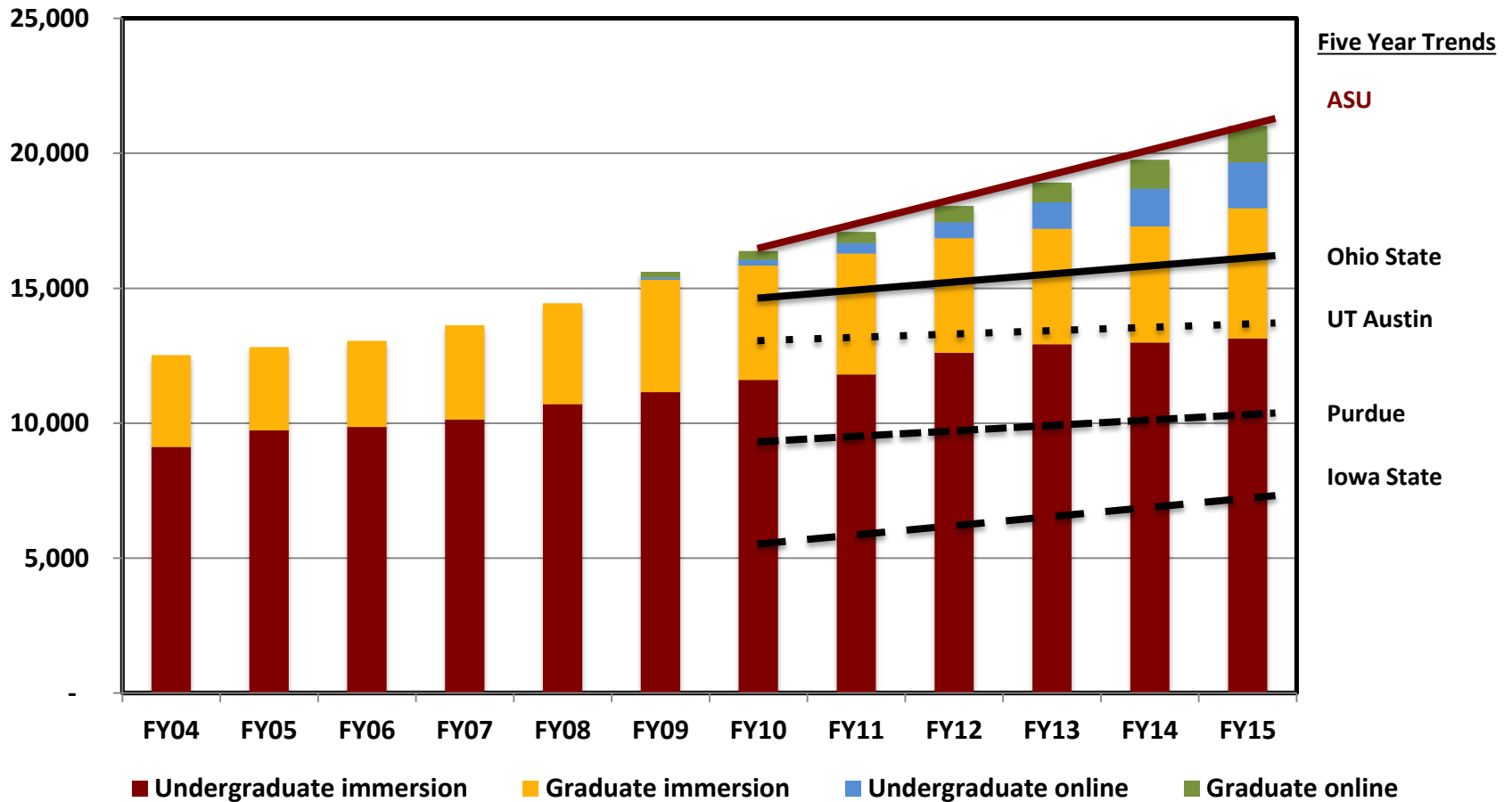




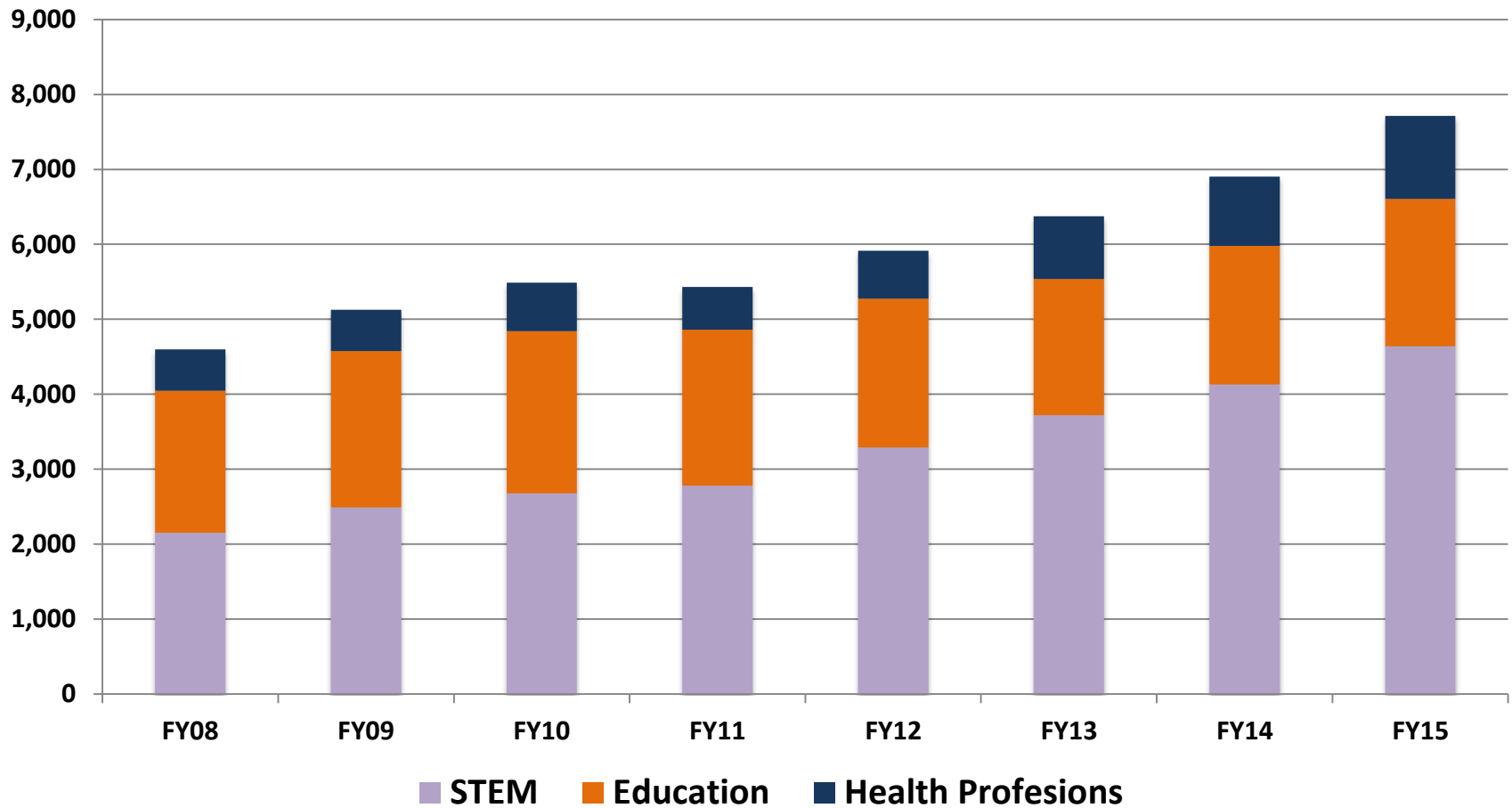
# Four Year Graduation Rates at UIA Campuses, 2013



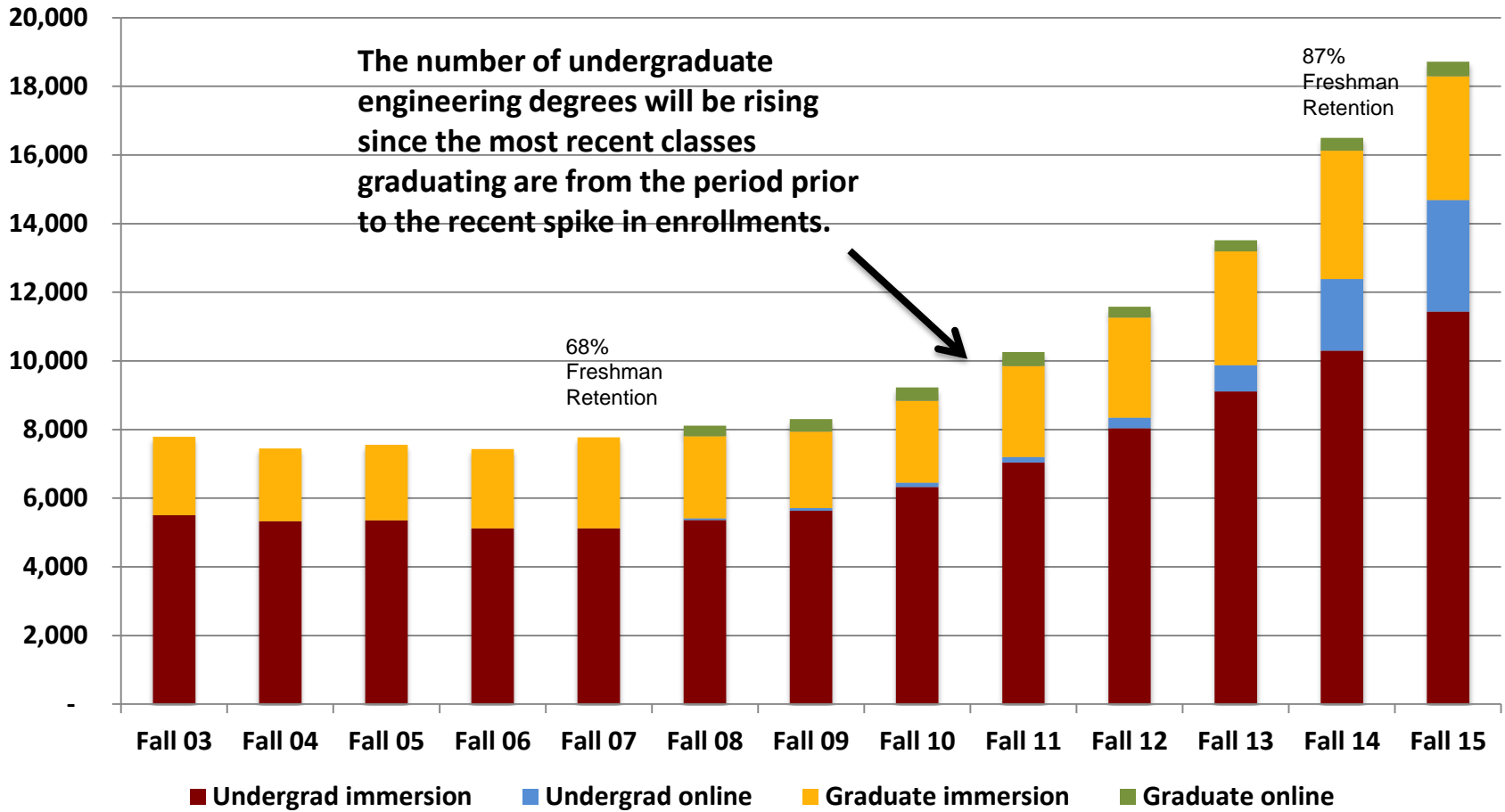
# Numbers of Graduates: Total Degrees



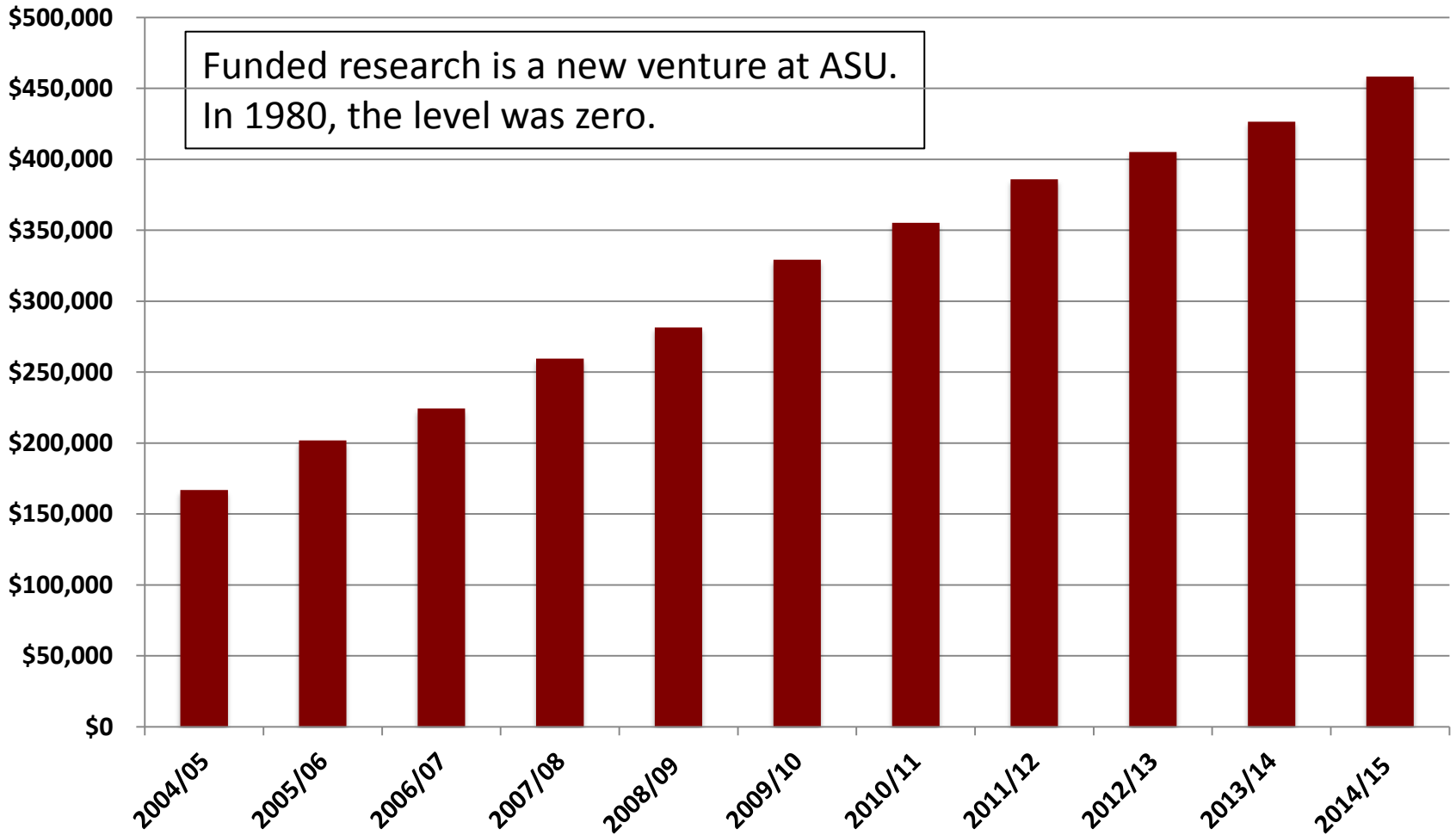
# Numbers of Graduates: High Demand Fields



# Enrollment in Engineering



# Research Expenditures



# ASU competes successfully with the best universities

2014 National Science Foundation (NSF) Higher Education Research and Development (HERD) Rankings

Total Research Expenditures: **49 of 866** ahead of



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Non-Medical School Expenditures: **31 of 866** ahead of



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Total Research Expenditures among Institutions without  
a Medical School: **10 of 716** ahead of



# ASU competes successfully with the best universities

Humanities: **18<sup>th</sup>** ahead of



Cornell University



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Engineering Expenditures: **22<sup>nd</sup>** ahead of



Caltech

HARVARD  
UNIVERSITY



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NSF Funded Expenditures: **30<sup>th</sup>** ahead of

HARVARD  
UNIVERSITY



Duke  
UNIVERSITY



JOHNS HOPKINS  
UNIVERSITY

# 2025 Metric Goals and Strategies



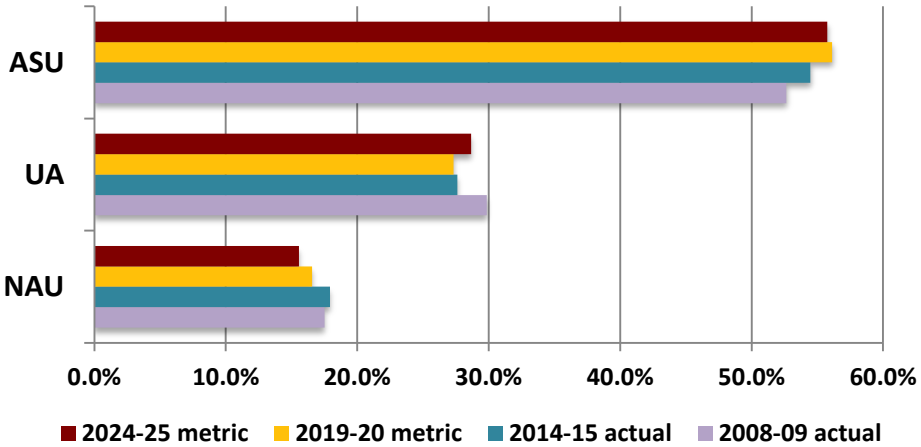
## 2025 Metric Targets

The metric targets for 2025 are likely to be the bare minimum needed to build Arizona's competitiveness.

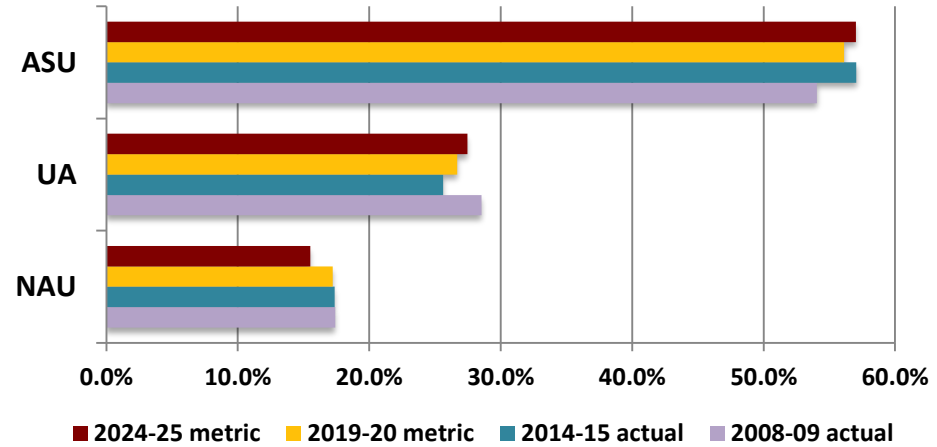
Rapid progress in the short term is needed to build the base for achieving the targets. Building enterprise financial capacity is essential given current state investment indicators.

ASU has been assigned a very significant component of the targets and will need to expand its share of enrollment, degrees and research— greater than anything we have ever done.

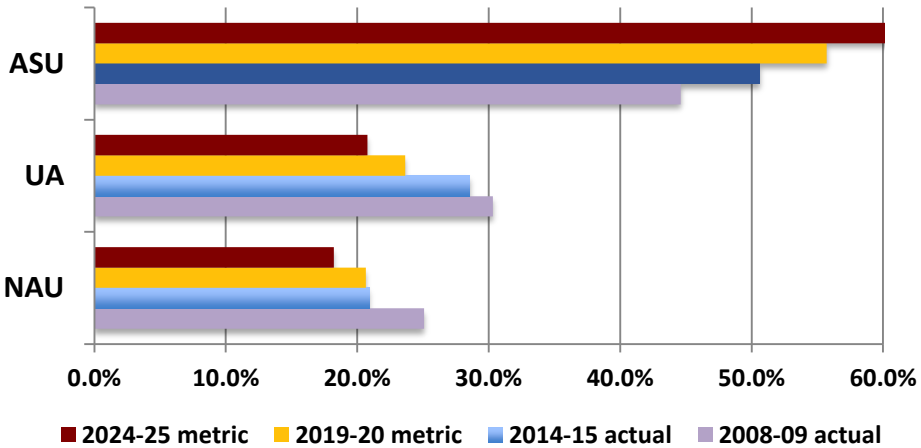
## Share of Total Enrollment



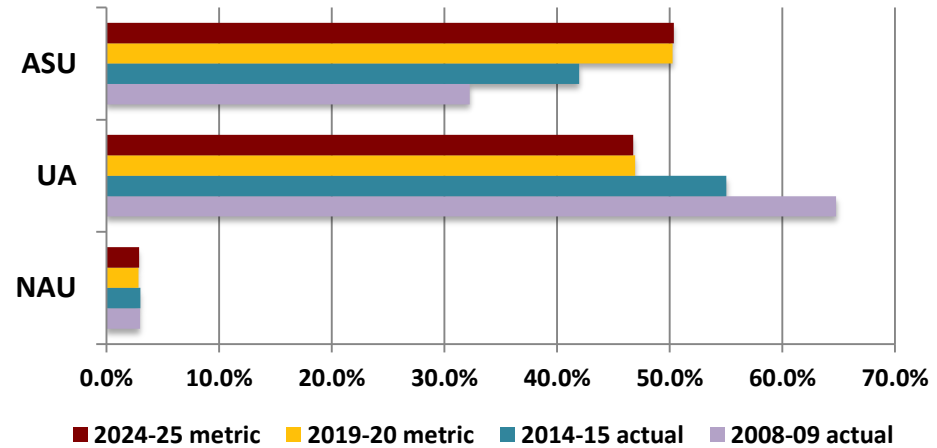
## Share of Total Degrees



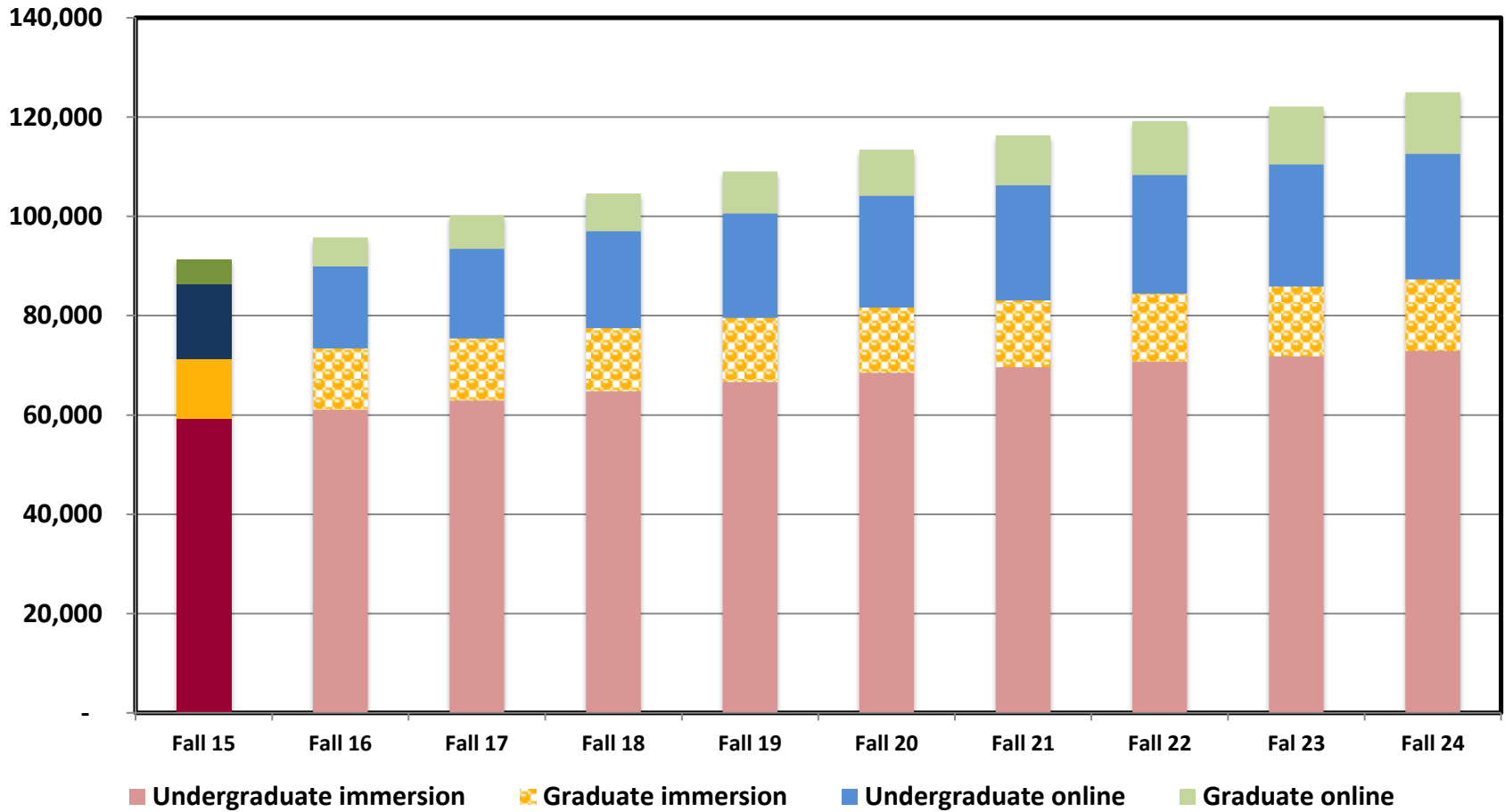
## Share of High Demand Degrees



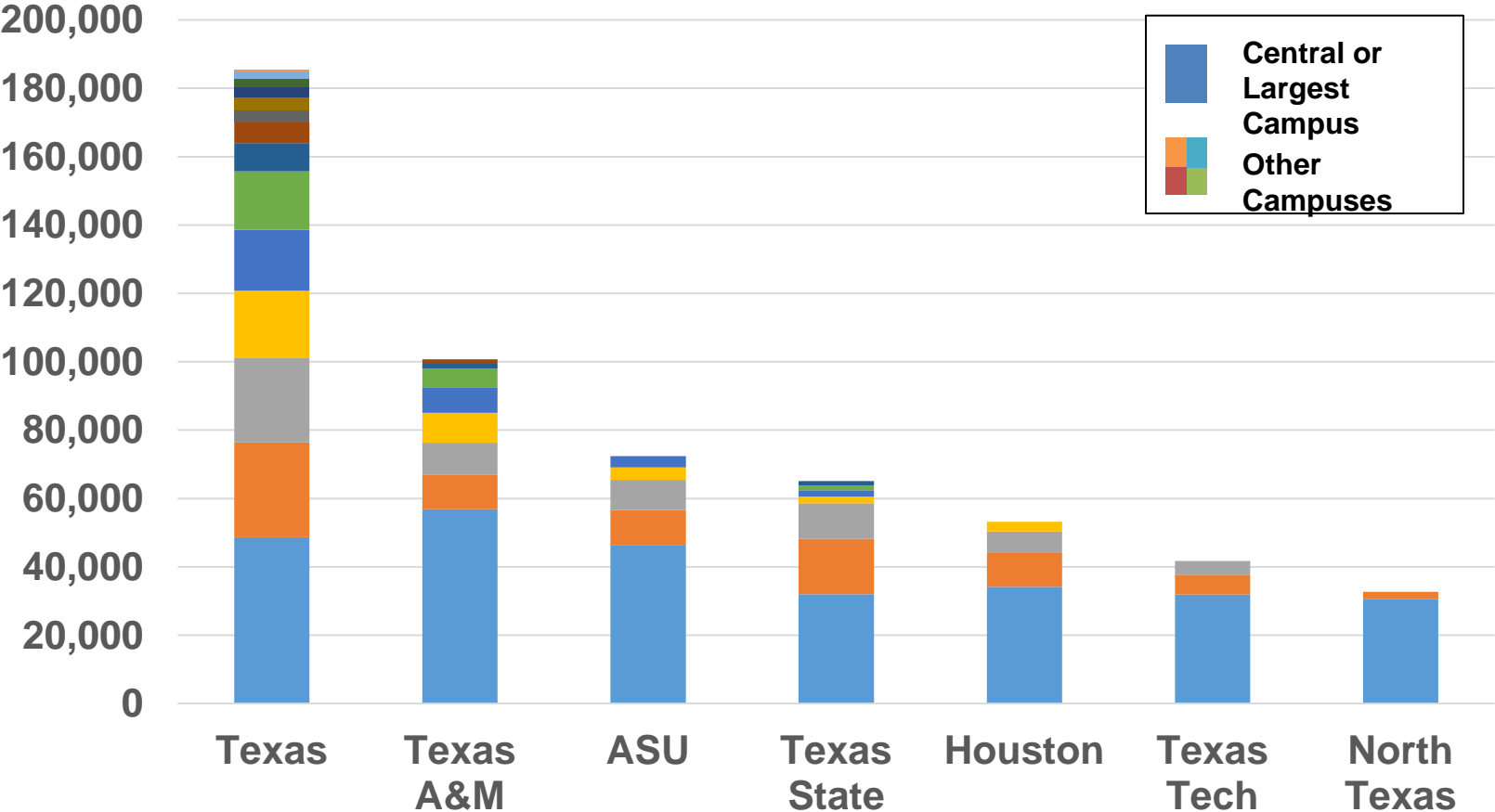
## Share of Research Expenditures



# 2025 Enrollment Metric Targets



# ASU Enrollment Compared to University Systems in Texas by Total FTE, Fall 2014



# Enrollment Efforts

Targets can be achieved if:

**The pipelines from AZ high schools and community colleges are expanded**

- ASU Prep
- High school programs
- me3

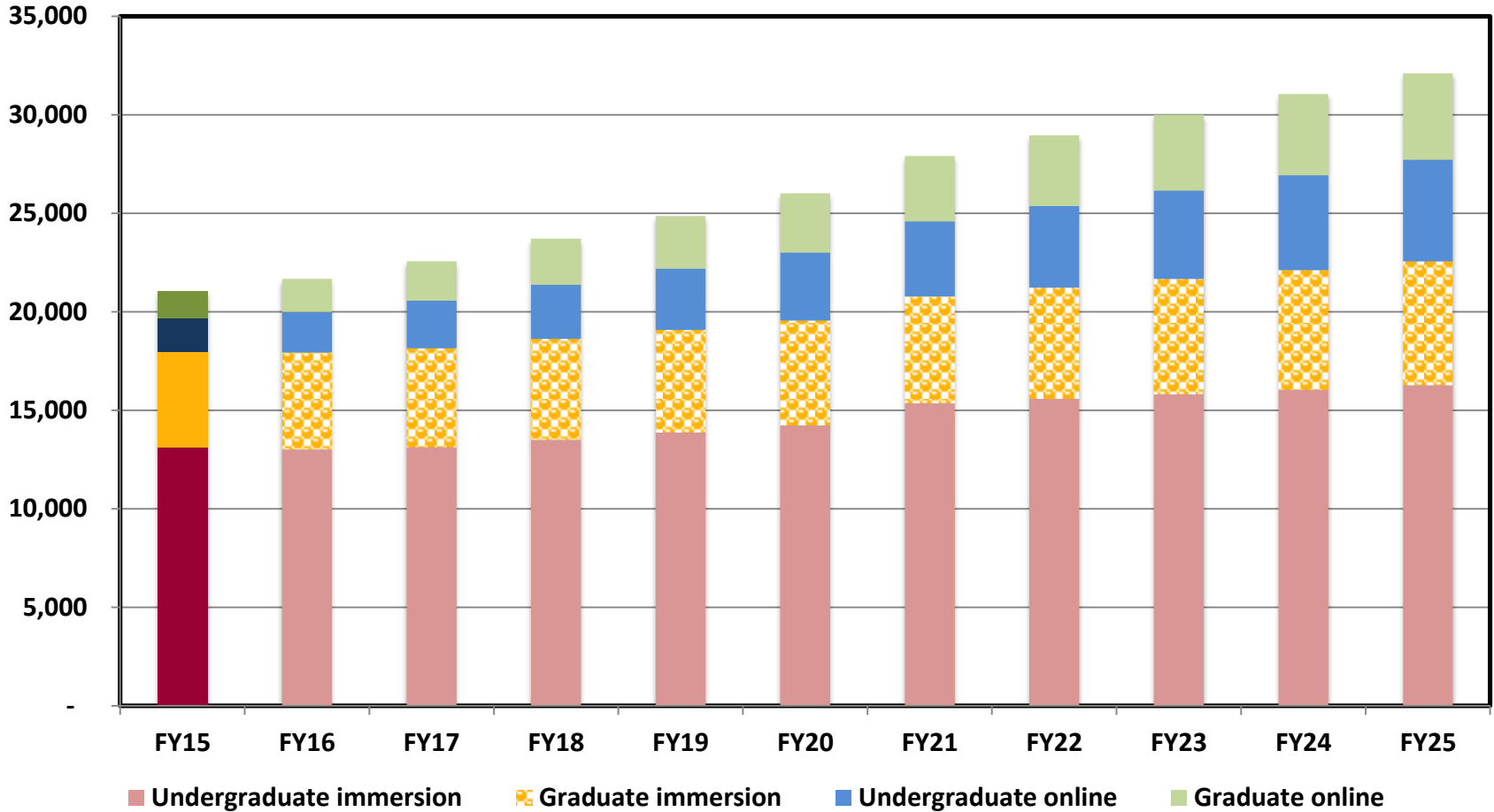
**ASU brand reputation continues to grow in the United States and overseas.**

**International student markets remain open and financially secure**

- #1 school for innovation
- Intensive recruitment activities
- National visibility
- International partnerships

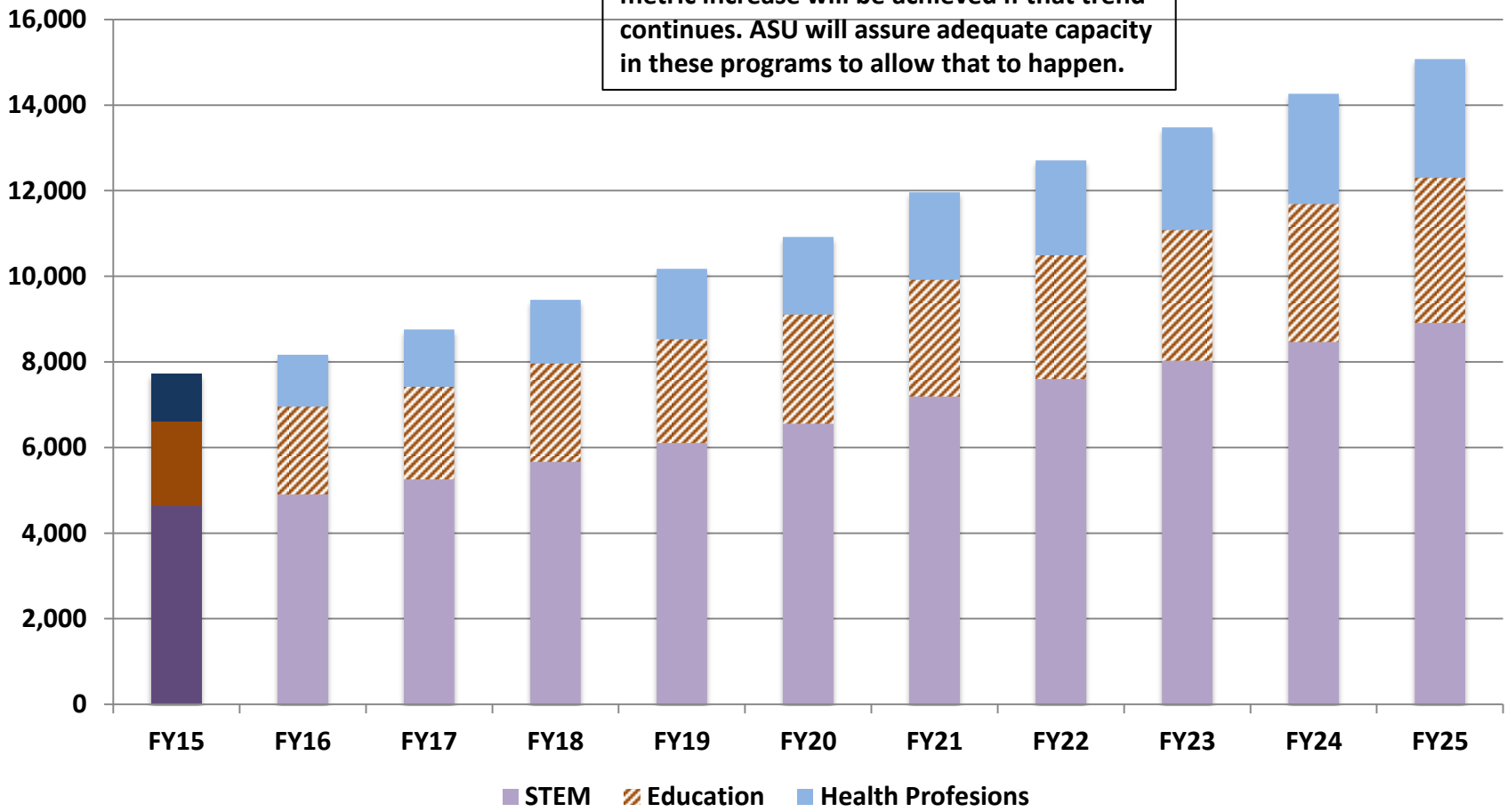
**Sensible financial aid policies continue to be manageable within the overall University budget priorities**

# 2025 Degree Metric Targets



# 2025 Metric Targets for Degrees in High Demand Fields

The recent trajectory has shown a strong shift towards these high demand fields. The metric increase will be achieved if that trend continues. ASU will assure adequate capacity in these programs to allow that to happen.



# Retention and Graduation Efforts

Targets can be achieved if:

## **Innovations to improve retention continue to be discovered**

- ASU has pioneered many innovations over the last five years, leading to dramatic improvements
- Continued trial and error efforts must continue
- Seeking ideas from many sources; University Innovation Alliance is an example of this effort.

## **Net tuition after aid is maintained at an affordable level**

- Public investment limitations make this challenging
- Because it is university-funded, financial aid investments compete with needs for faculty growth, student support services, and facility improvements

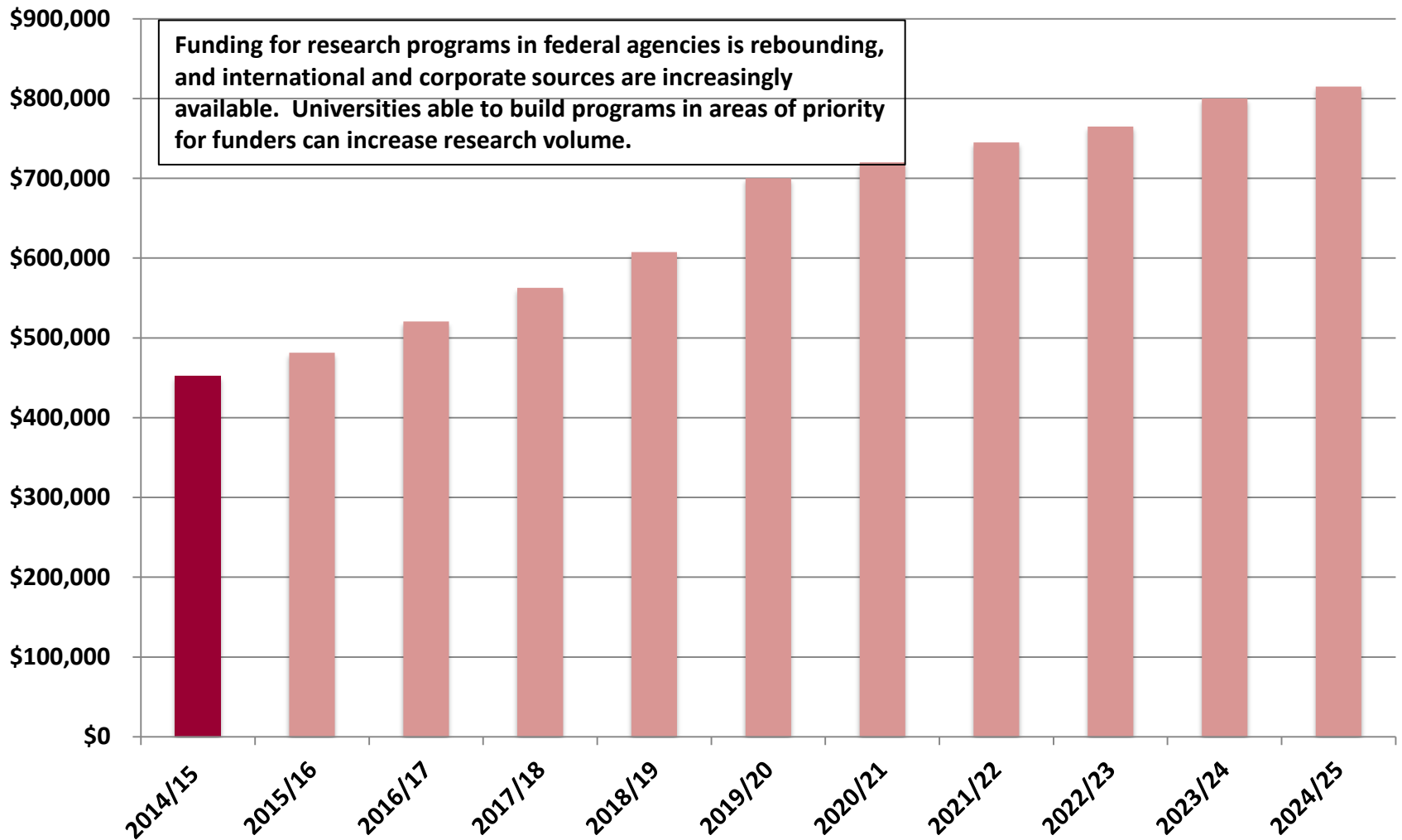
## **Student support structures are maintained and improved**

- More closely targeted advising and mentoring are likely to be important

## **Arizona students preparation level improves**



# 2025 Research Targets



# Research Growth Efforts

Targets can be achieved if:

## **Adequate investment can be made in faculty and facilities**

- Internal budget priorities must balance these needs against competing needs
- External support will be needed from efforts such as Research Infrastructure II and Velocity

## **Ongoing faculty efforts with traditional PI grants continue to grow steadily**

- Effective central project acquisition and management support structures must scale as faculty efforts grow
- Work load balances must be well-managed by schools and departments

## **Progress continues with multi-investigator, multi-department, multi-institution proposals**

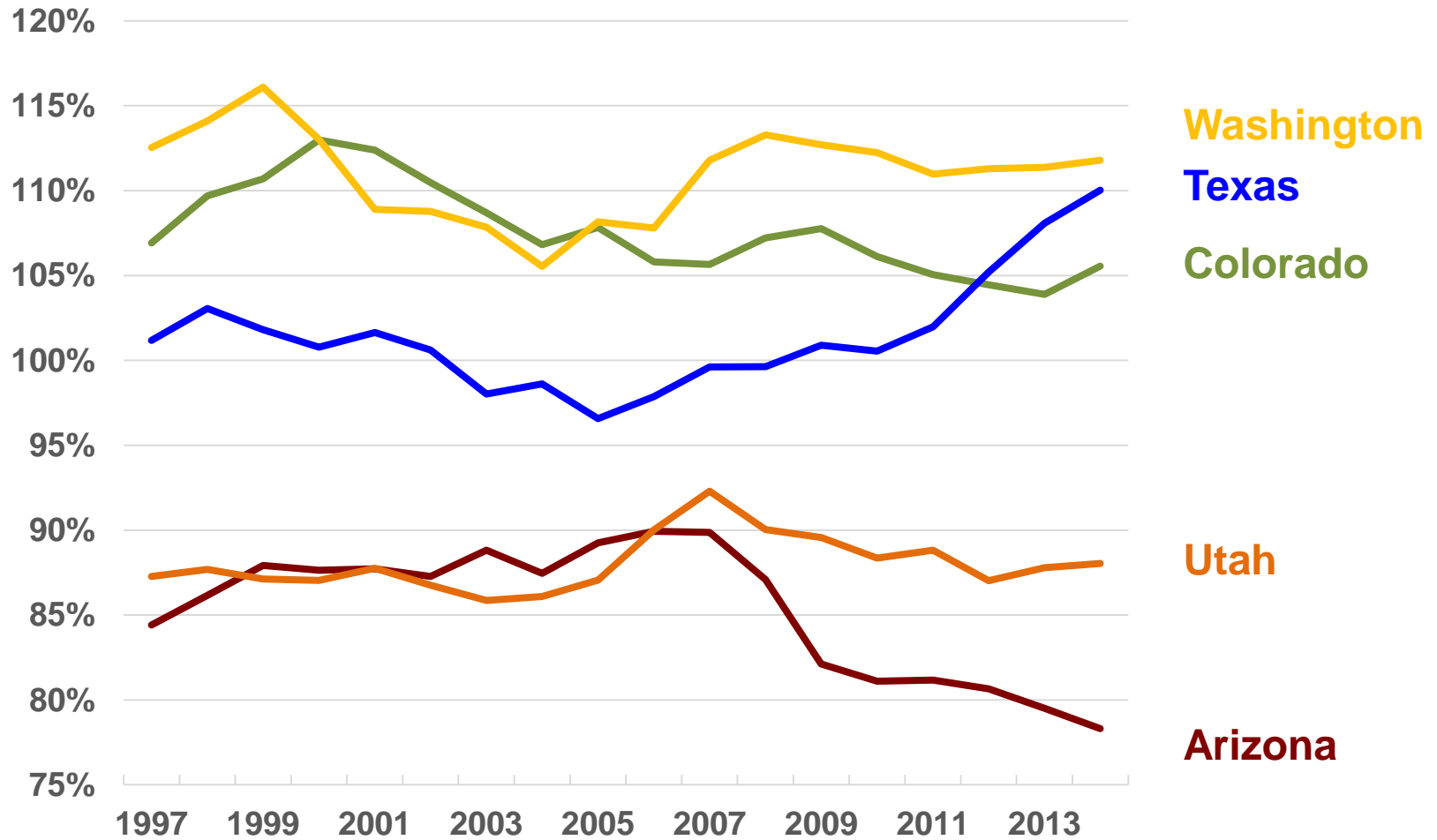
### **National lab- level center is attracted to ASU**

### **Global sources become an increasing component of the mix**

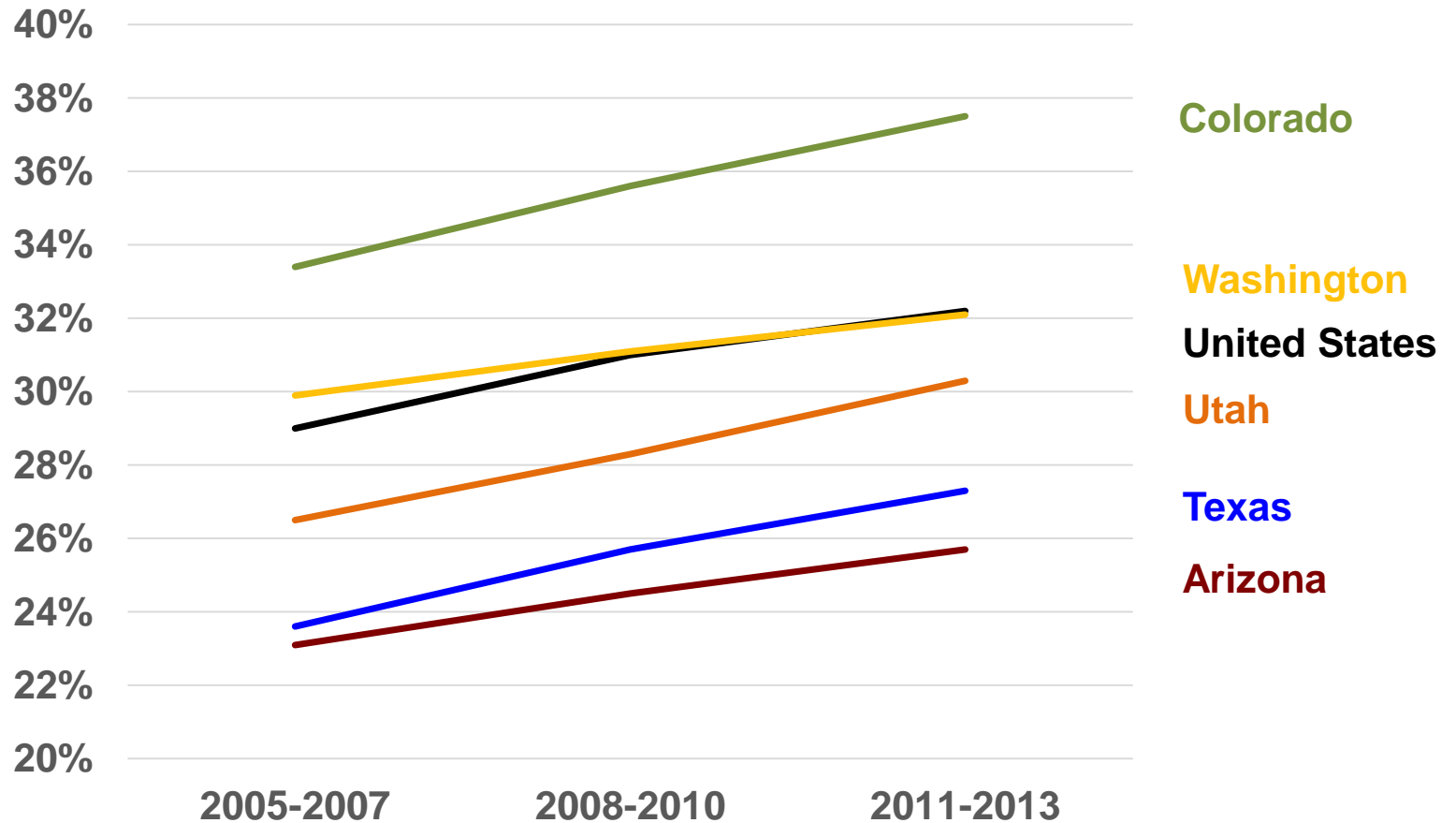
- Building programs that can get ahead of anticipated funding agency priorities
- Reward and support structures for the significant faculty effort required for proposal development

# Arizona's Performance Challenges

# State Per Capita GDP Relative to National Average



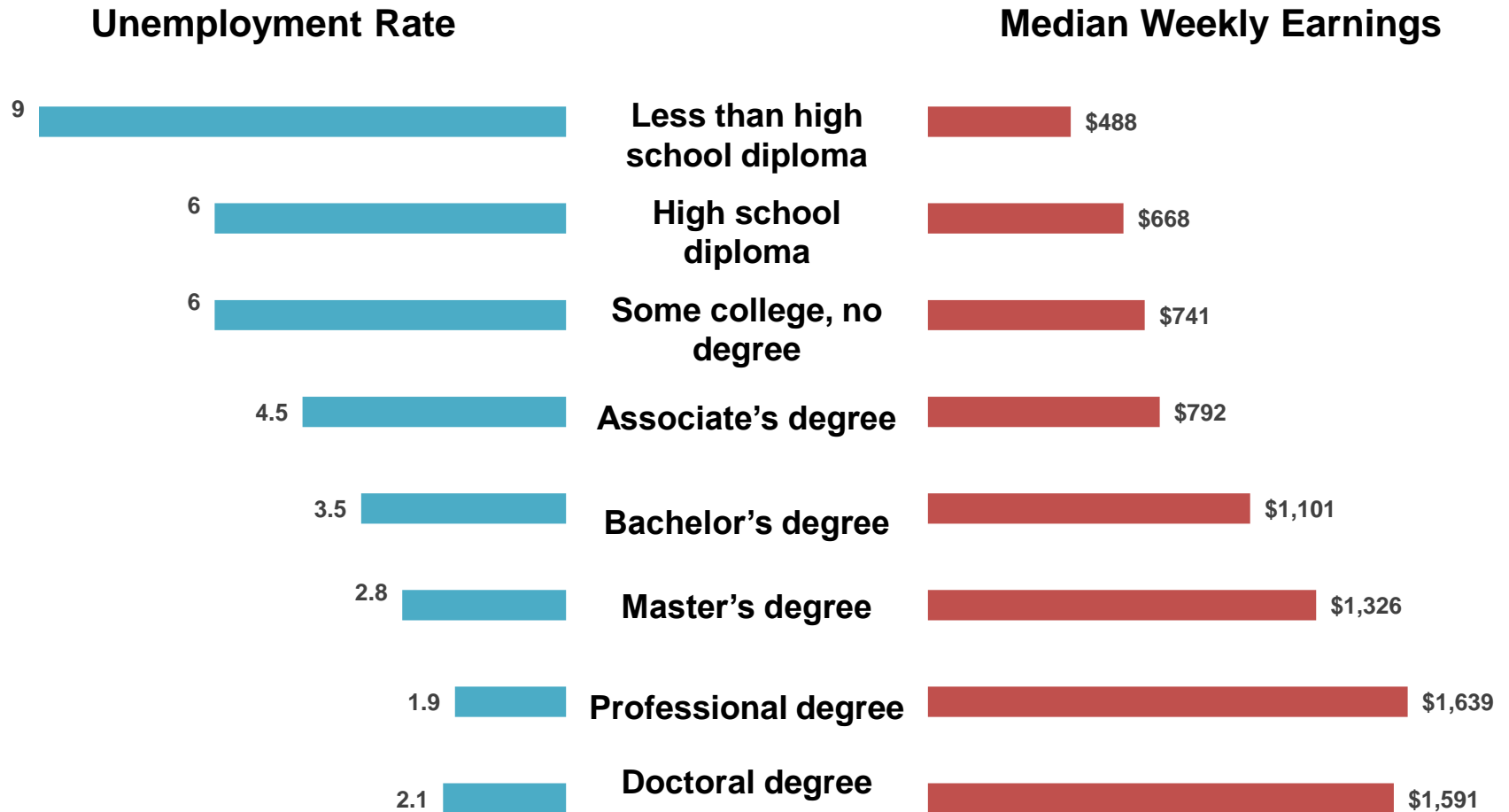
# Bachelor's Degree Attainment for Population Aged 25-34 Years



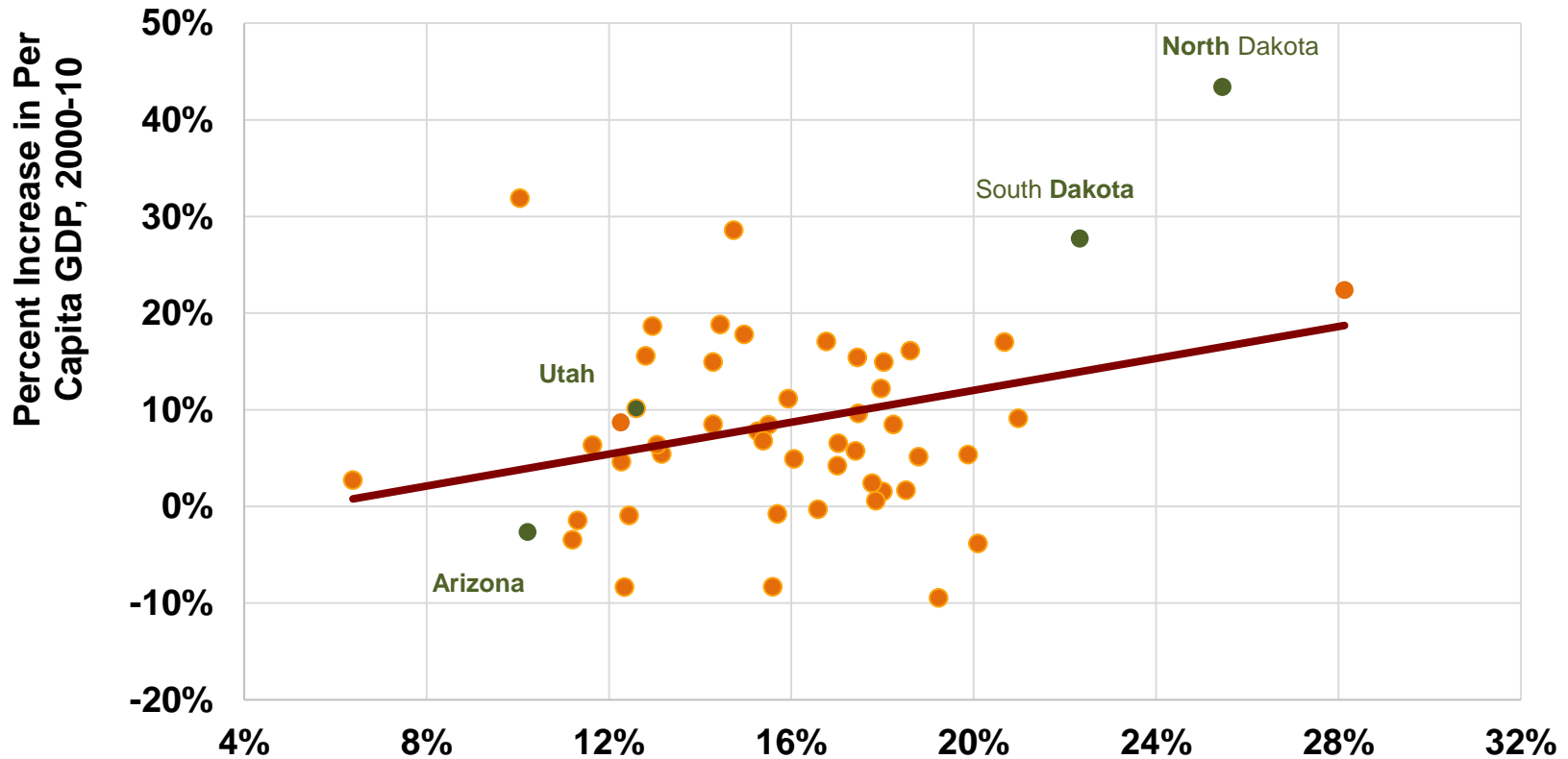
# Size of Industries in State Economies Relative to Size of Industries in National Economy, 2014

Industry	Arizona	Colorado	Texas	Utah	Washington
Administrative and waste management services	145.9%	98.1%	101.1%	96.2%	90.1%
Retail trade	133.3%	91.8%	96.4%	117.5%	119.8%
Construction	118.8%	116.6%	128.7%	137.3%	98.0%
Utilities	117.9%	90.5%	143.4%	52.2%	51.7%
Arts, entertainment, rec, accomm, food services	117.4%	119.3%	82.7%	87.6%	88.4%
Health care and social assistance	114.0%	83.3%	72.5%	78.6%	87.8%
Finance, insurance, real estate, rental, and leasing	107.6%	93.8%	67.2%	105.2%	84.4%
Educational services	104.1%	67.3%	51.5%	119.0%	50.4%
Transportation and warehousing	101.3%	95.9%	113.0%	115.1%	95.5%
Other services, except government	97.5%	102.1%	90.6%	132.2%	90.7%
Wholesale trade	93.7%	91.6%	117.2%	84.9%	91.9%
Mining	80.3%	232.6%	518.6%	116.8%	9.7%
Professional, scientific, and technical services	78.7%	126.5%	85.9%	89.4%	91.7%
Manufacturing	69.3%	58.7%	119.8%	102.3%	112.0%
Management of companies and enterprises	69.1%	106.5%	59.8%	77.5%	71.5%
Agriculture, forestry, fishing, and hunting	63.9%	87.7%	57.5%	46.9%	150.4%
Information	59.6%	155.2%	67.7%	87.4%	222.6%

# Unemployment Rate and Median Weekly Earnings by Educational Attainment, 2014



# Relationship between Change in Educational Attainment and Economic Development in US States, 2000-2010



Change in Percent of 25 Year or Older Having Attained a Bachelors Degree or Higher, 2000-10

Data Sources: US Census Bureau,  
US Bureau of Economic Analysis



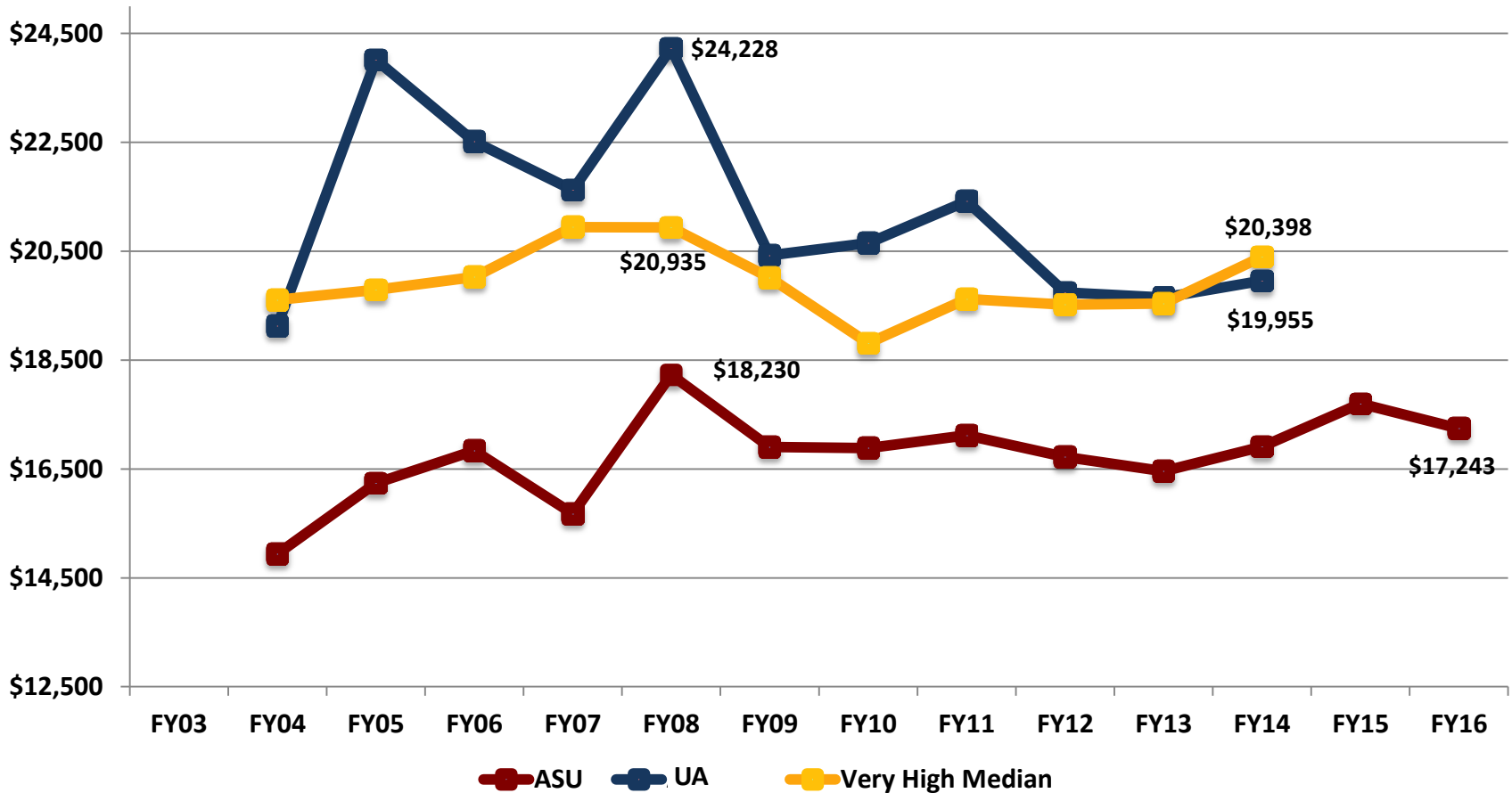
# State Funding Overview

# Tuition, Fees and State Appropriations per FTE Student

FY03 to FY14 IPEDS data

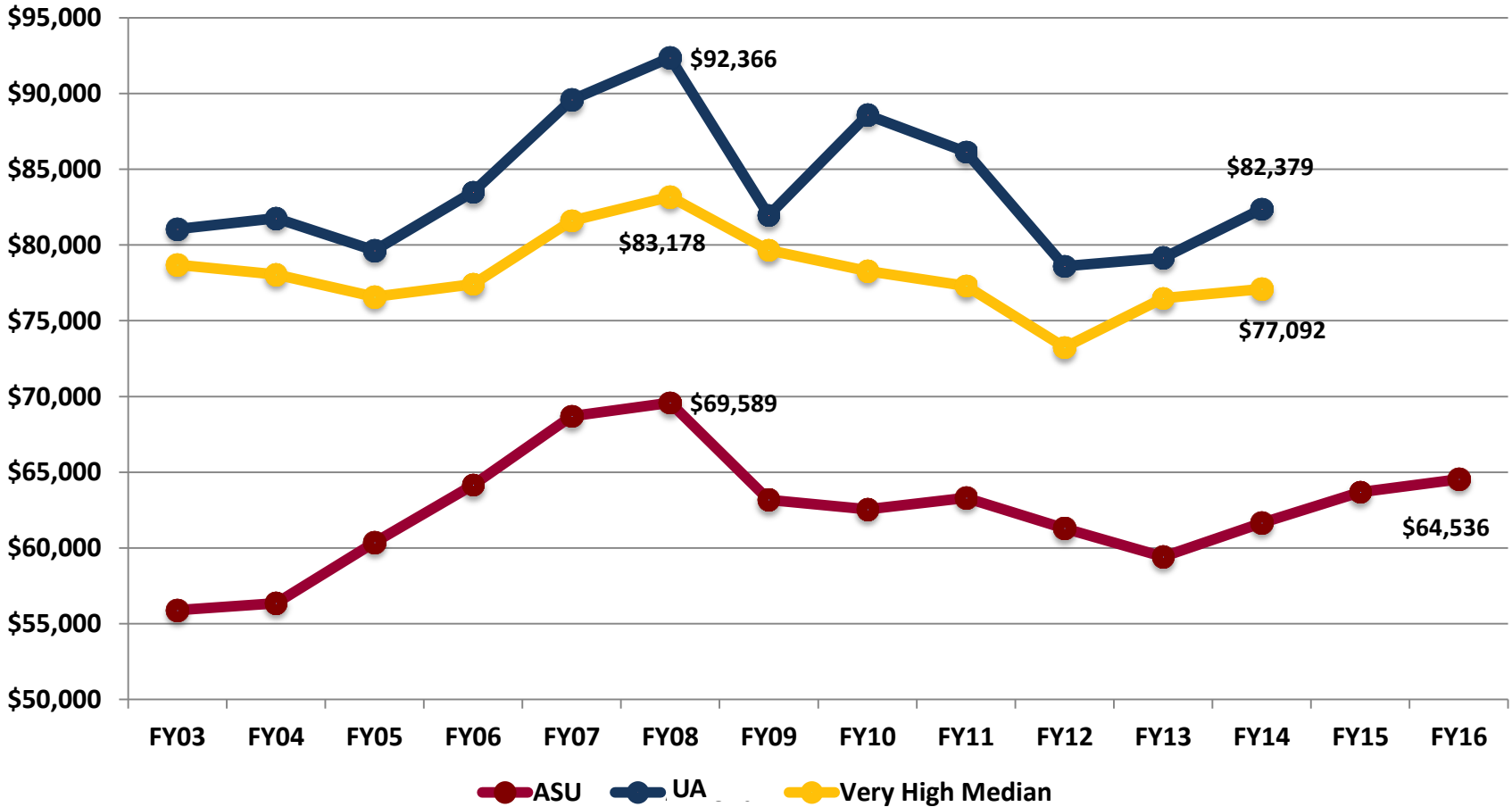
FY15 and FY16 ASU actuals and estimates

Constant FY2015 Dollars

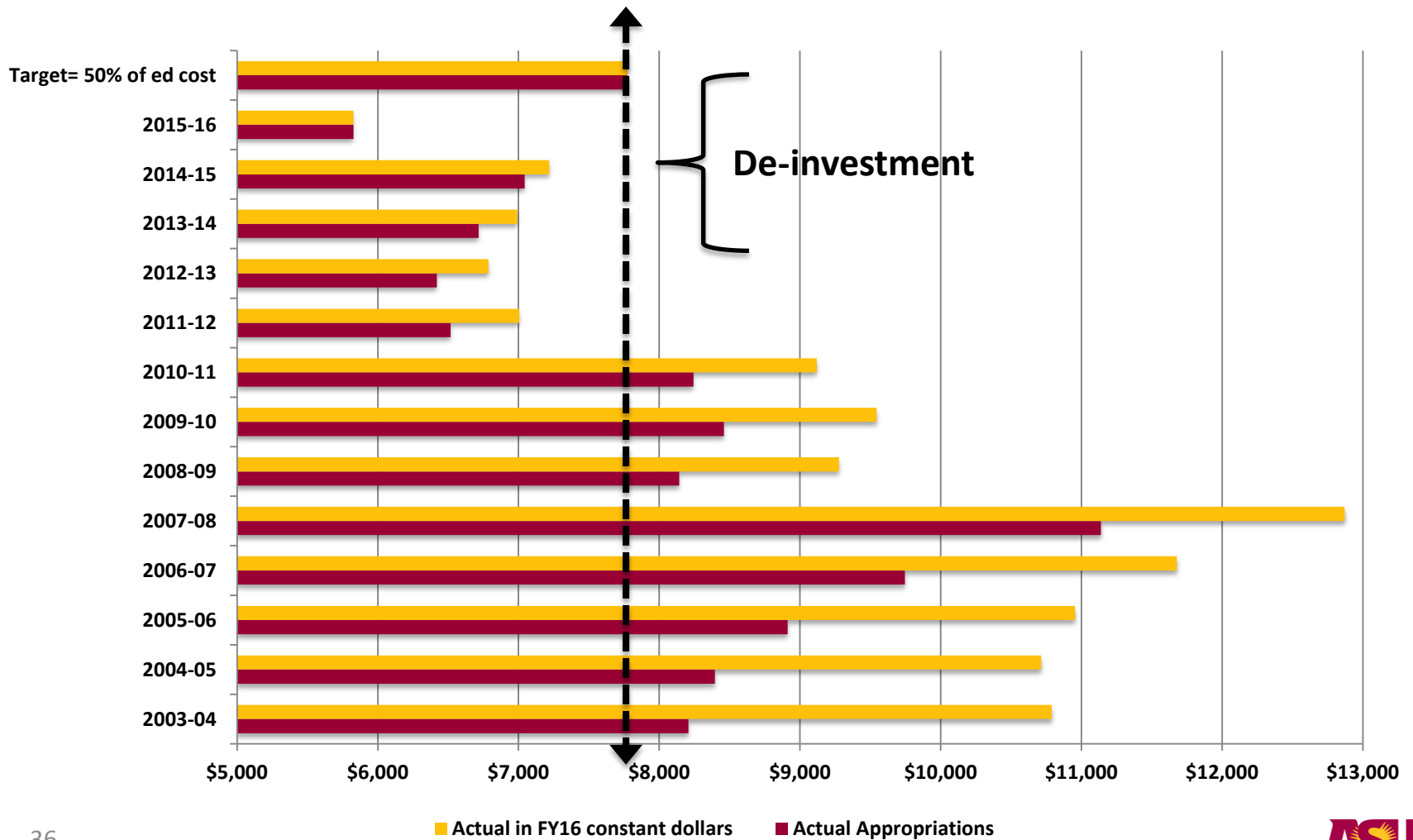


# Tuition, Fees and State Appropriations per Degree Awarded

FY03 to FY14 IPEDS data  
 FY15 and FY16 ASU actuals and estimates  
 Constant FY2015 Dollars



# FY2004 to FY2016 Higher Ed General Fund Appropriations Per Resident Student (HC)- Three Universities Nominal Dollars and Constant FY16 Dollars

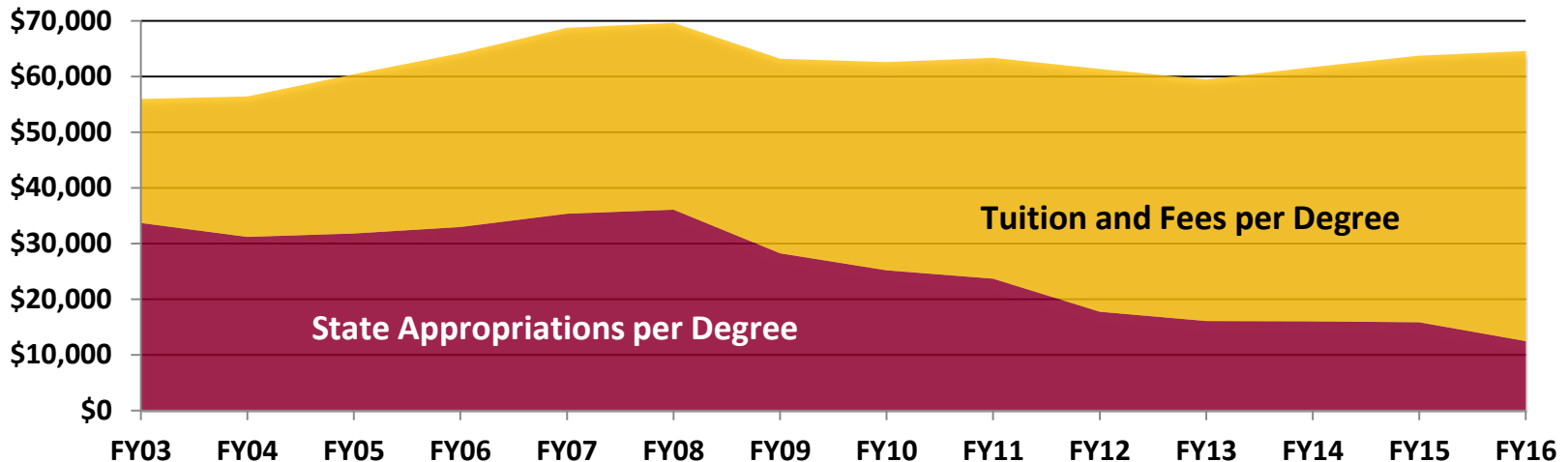
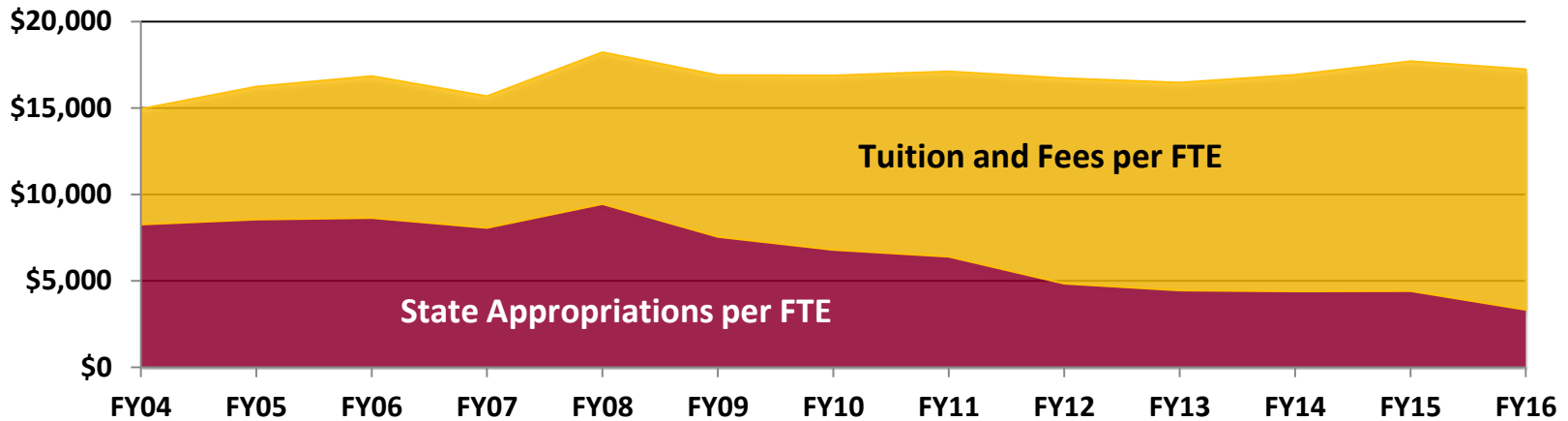


# Educational Resources Available at ASU

## Tuition, Fees vs. State Appropriations per Degree Awarded and per FTE

Constant FY2015 Dollars

FY03 to FY14 IPEDS data---FY15 and  
FY16 ASU actuals and estimates



# ASU Financial Overview

# ASU Financial Overview

ASU 's has built it financial strength over the last five years

ASU is already among the most efficient universities so substantial cost cutting is not an effective strategy option

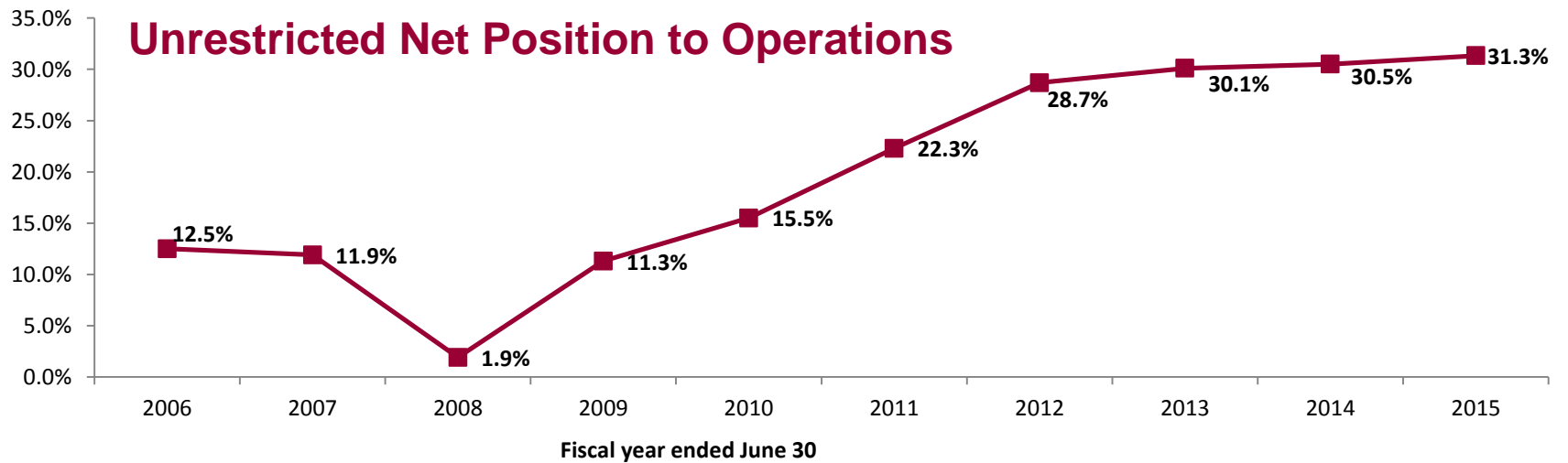
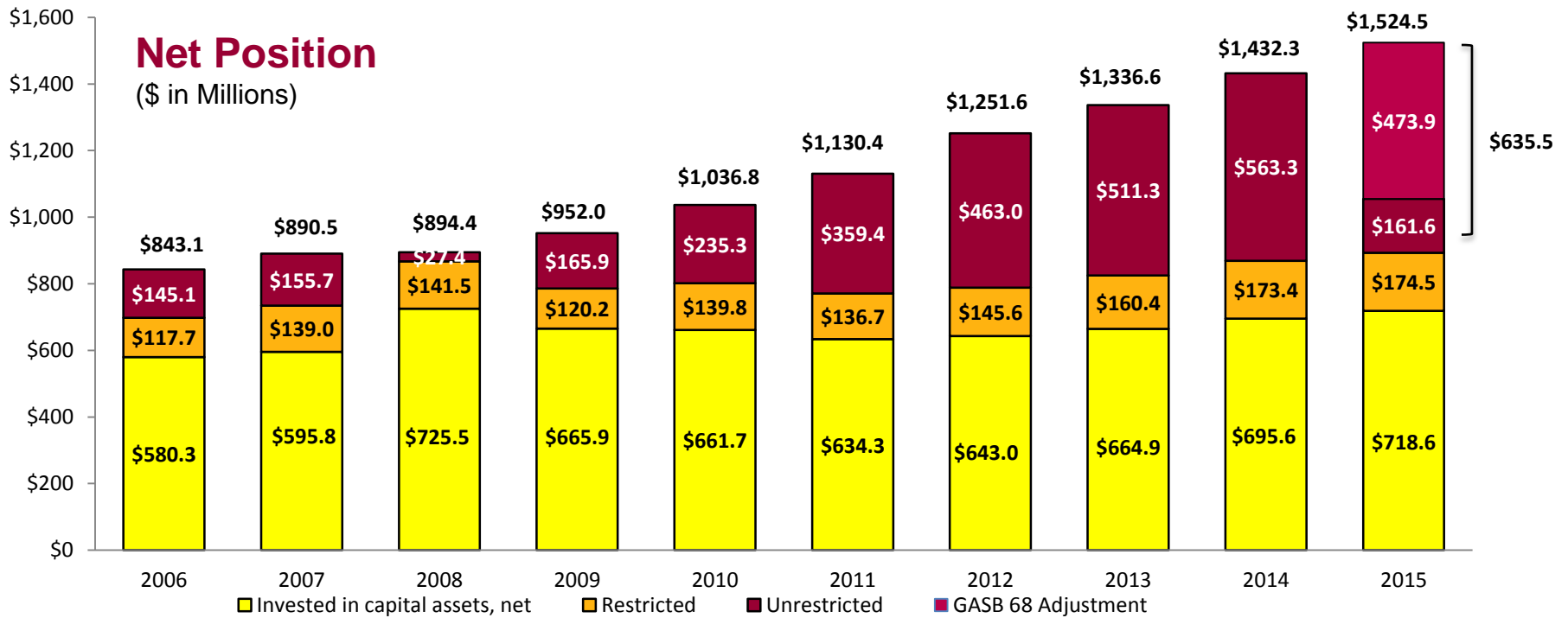
Substantial investment in base operations planned for achieving metric goals

- 1,200 to 1,500 new faculty by 2025 (ratio to students will still decline)
- Over 500 new staff by 2025
- Teaching and research facilities

Revenue/margin from existing immersion and online activities will be inadequate to cover all of these costs

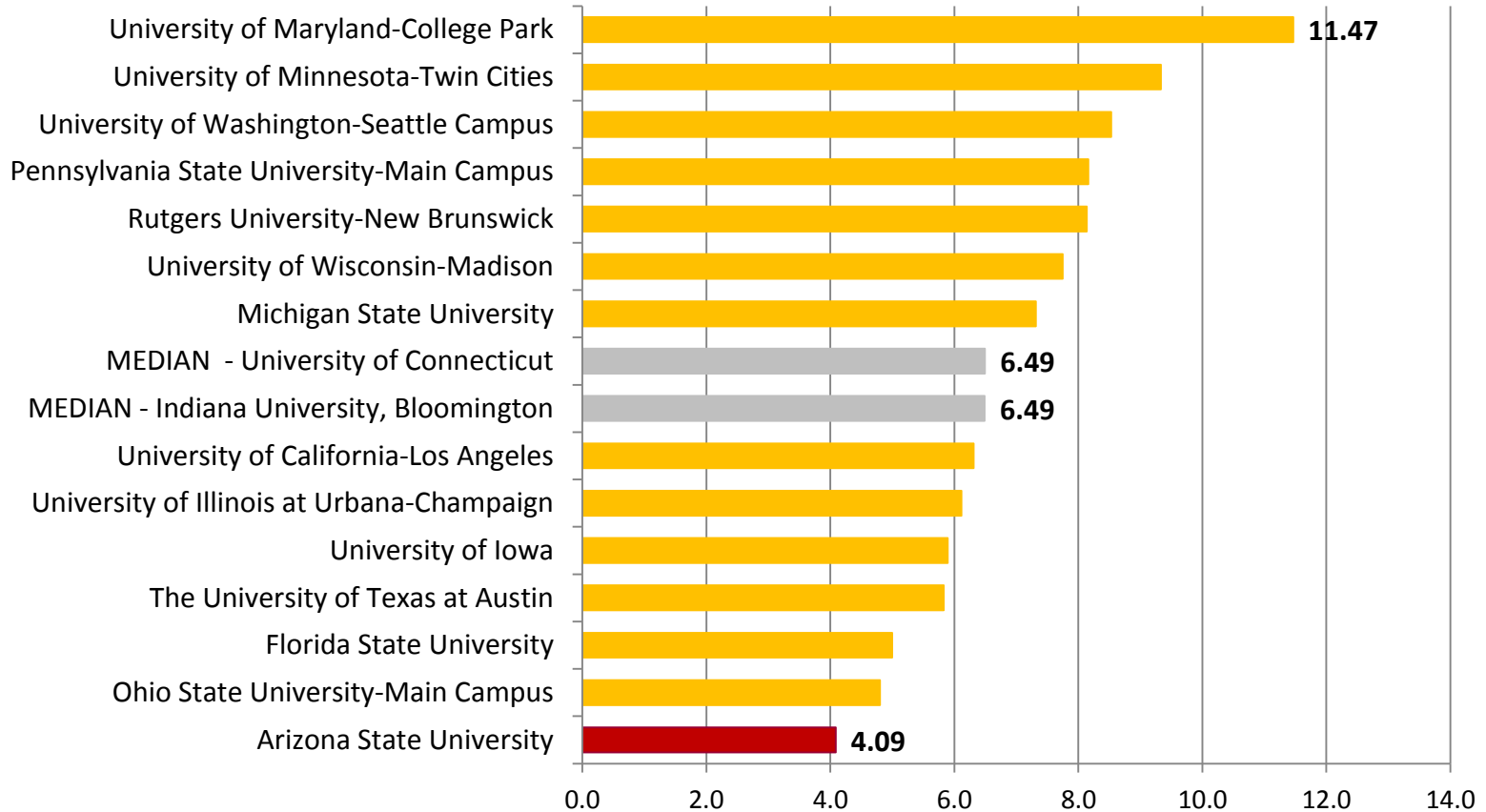
Large tuition rate increases are not a likely strategy, but the non-resident, international, and online markets must be regularly evaluated for opportunities.

New enterprise programs are the only pathway with reliable (but risky) potential for closing gaps





**FY2015**  
**Instructional Staff Per 100 FTE Students**  
**ABOR Approved Peers**  
**(Excludes Medical School Employees)**



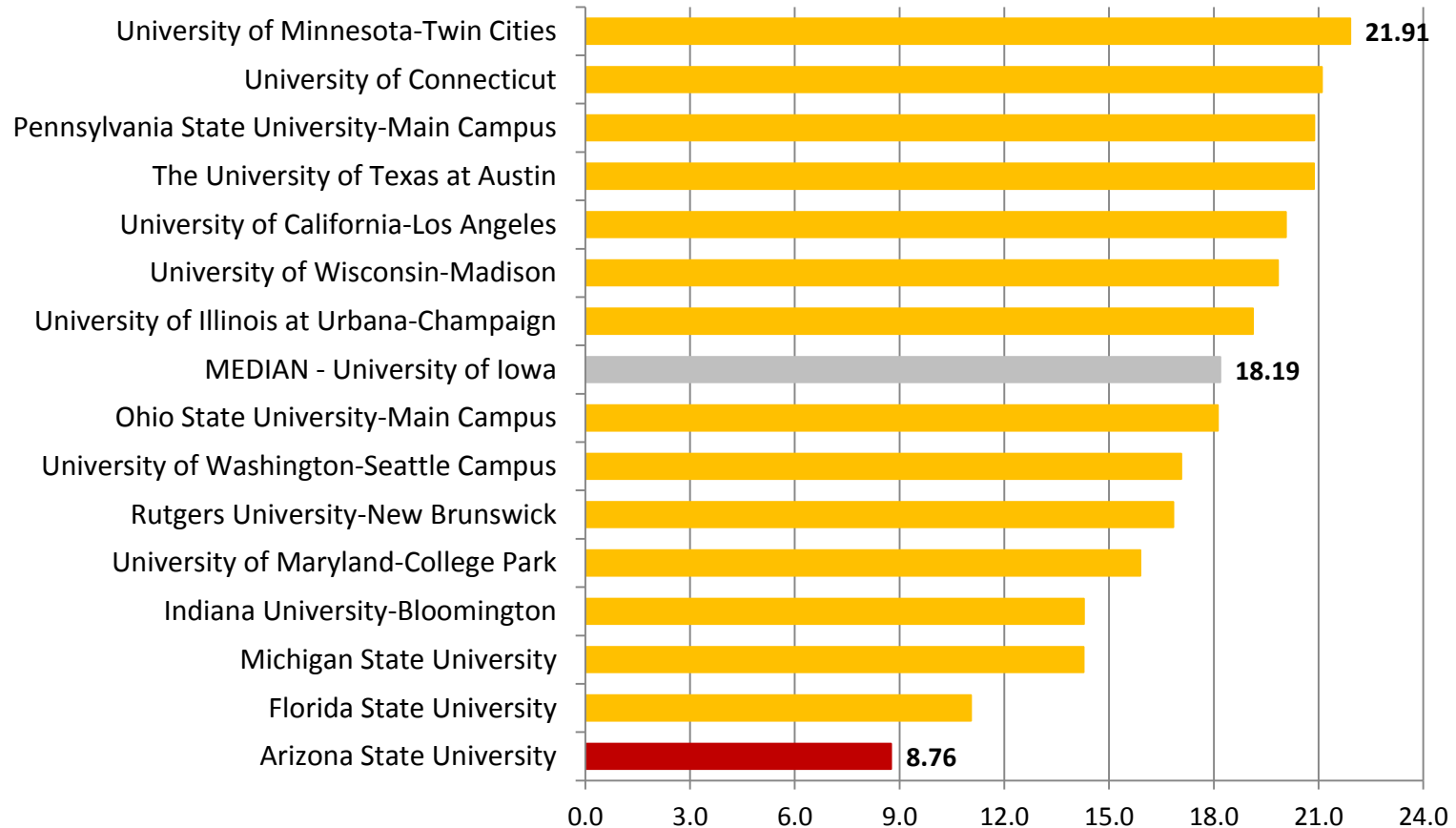
Full time equivalent postsecondary teachers whose principal activities are for instruction, research, and/or public service. They may hold academic rank titles of professor, associate professor, assistant professor, instructor, lecturer or equivalent of any of those academic ranks.

**FY2015**

**Non Instructional Staff Per 100 FTE Students**

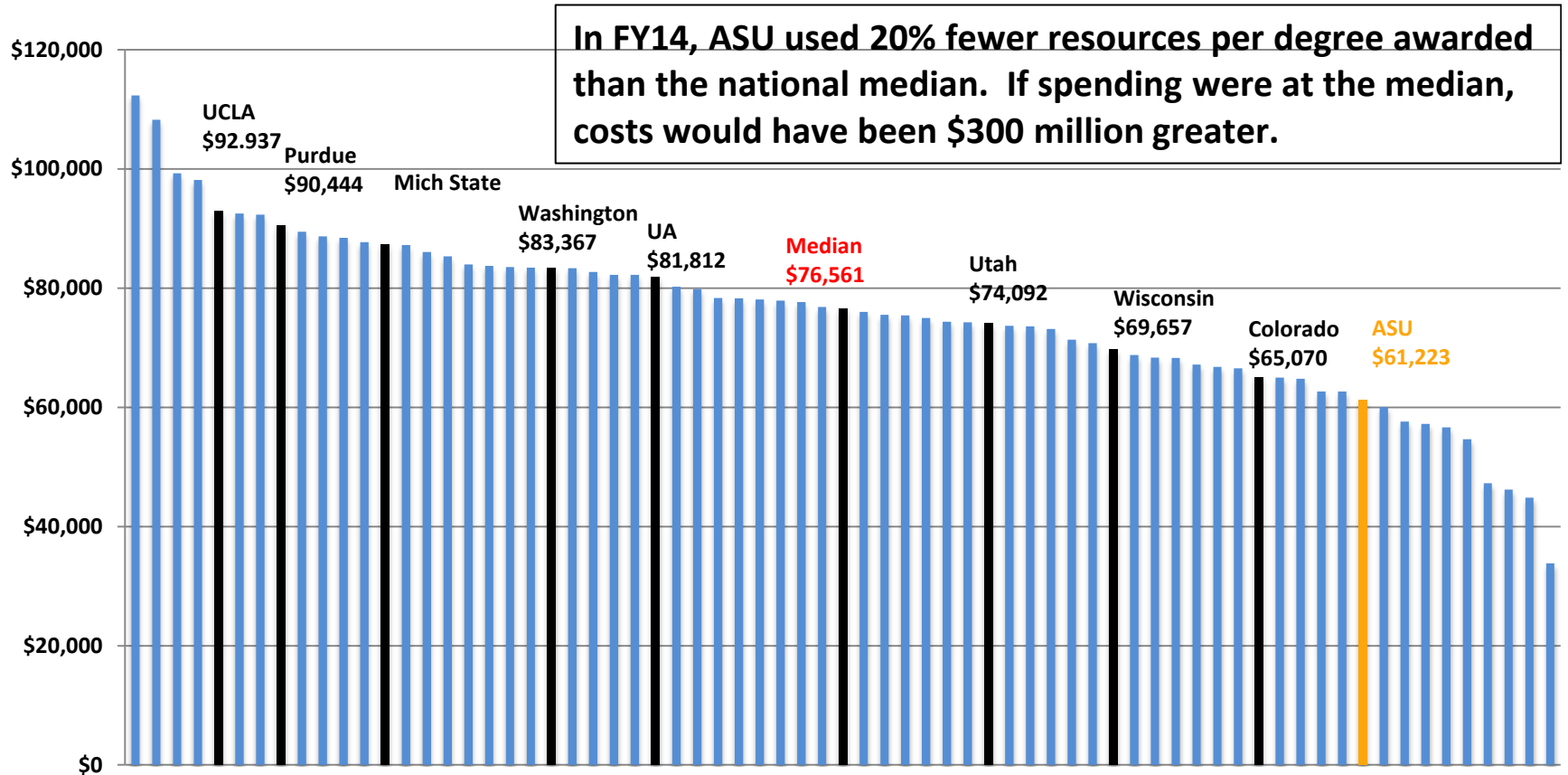
**ABOR Approved Peers**

**(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 purpose of performing academic support, student services, institutional support, and maintenance of facilities.

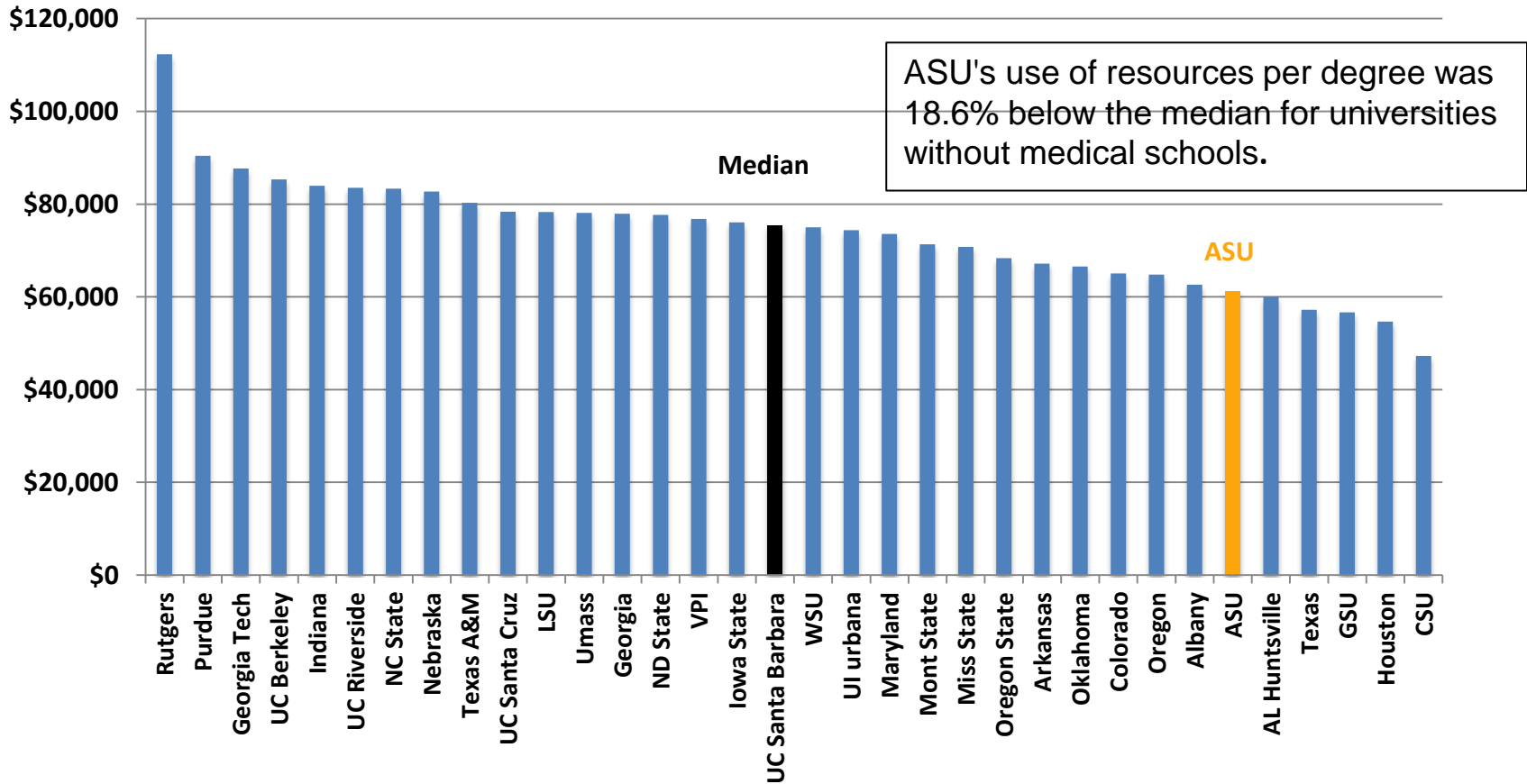
# Tuition, Fees, and State Appropriations per Degree Awarded Very High Research Universities IPEDS FY2014



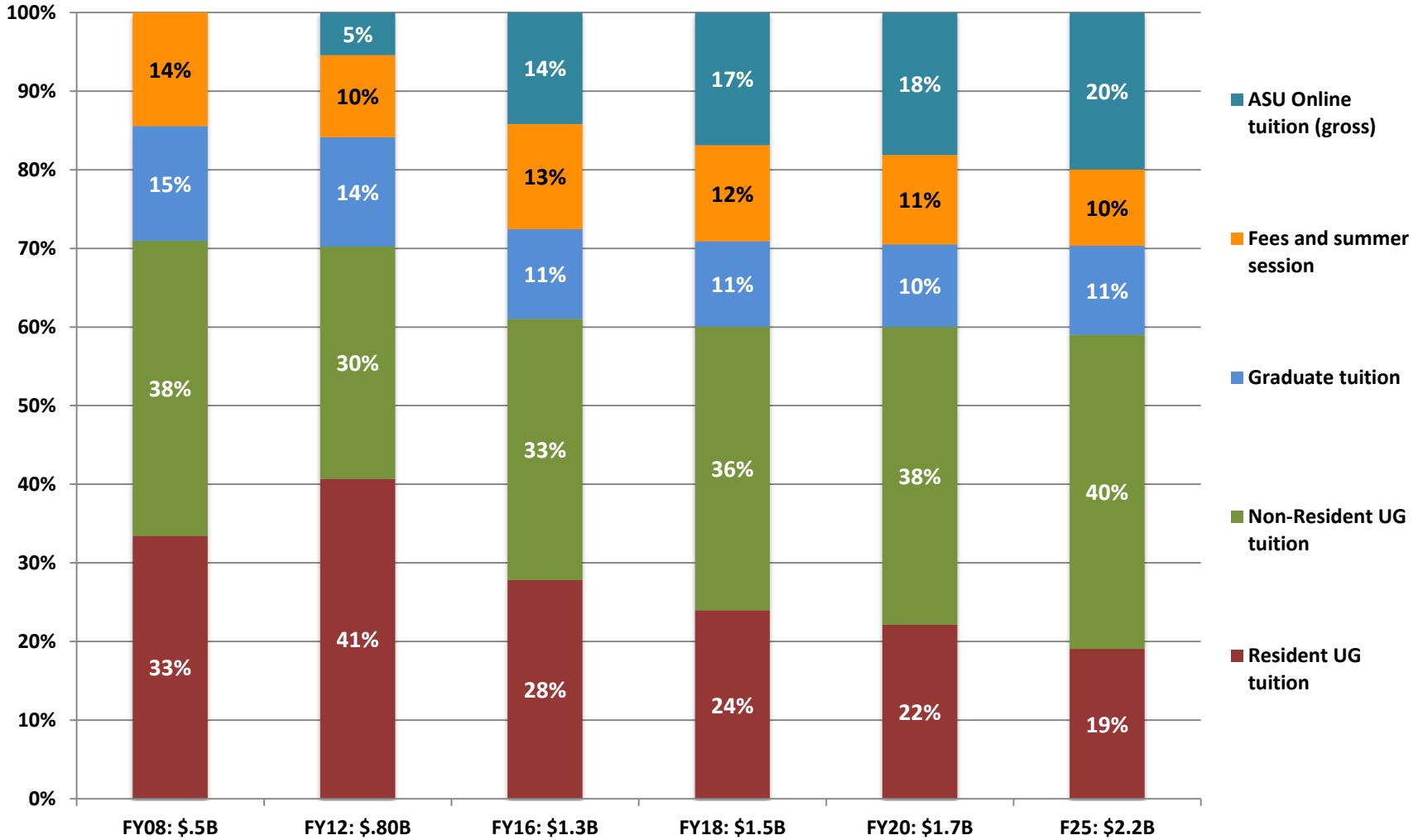
# Tuition, Fees, and State Appropriations per Degree Awarded

## Very High Research Public Universities without Medical Schools

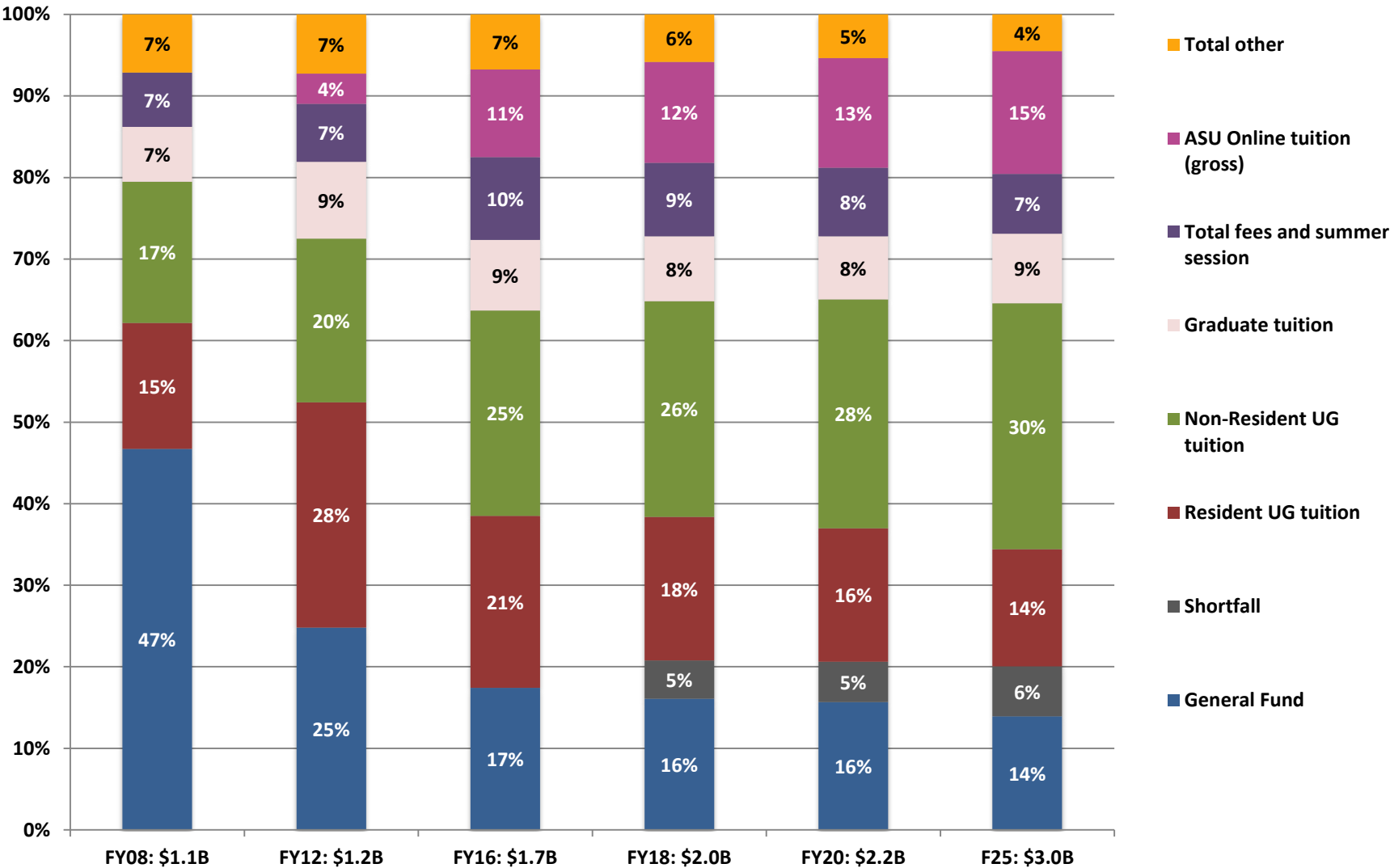
### IPEDS FY2014



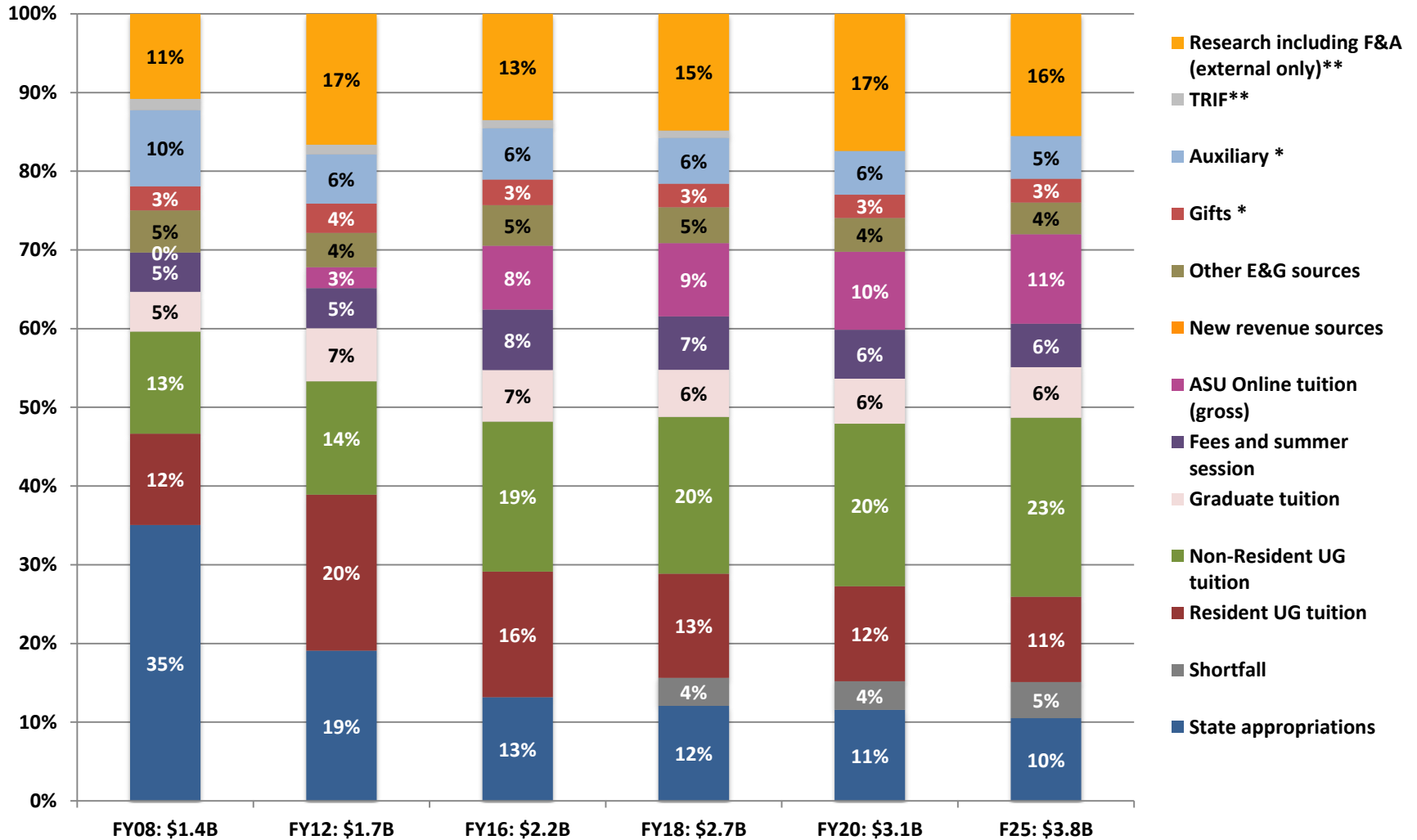
# ASU Enterprise Revenue Sources: Gross Tuition and Fees



# ASU Enterprise Education & General Revenue Sources



# ASU Enterprise Gross Revenue Sources: All Funds



# Enterprise Strategies and Initiatives



# Why is The Enterprise Strategy Important?

A powerful higher education enterprise is needed if Arizona is to succeed and its citizens are to prosper financially and socially.

Continued new investment will be necessary to be that force and to meet or exceed our ABOR metric goals.

State investment at the needed levels is not a safe bet.

Current educational activities must grow at accelerated rates, but overall revenue assumptions are not enough to provide the needed resources without threatening affordability.

New enterprise programs are the only pathway with reliable (but risky) potential for filling the resource gap.

# Moody's recognizes the strength of the ASU enterprise model



## ISSUER IN-DEPTH

16 December 2015

Rate this Research



### RATINGS

#### Arizona State University

System Revenue Bonds	Aa3/Positive
Certificates of Participation	A1/Positive
ACFFC Lease Revenue Bonds	A1/Positive

### KEY METRICS (FALL AND FISCAL YEAR):

	FY 2013	FY 2014	FY 2015
Total FTE Enrollment	76,376	81,254	88,742
Operating Revenue	\$1.7B	\$1.8B	\$2.0B
Total Cash and Investments	\$1.4B	\$1.6B	\$1.7B
Total Pro Forma Debt	\$1.7B	\$1.8B	\$2.1B
Operating Cash Flow Margin (%)	16%	15%	14%
Total Pro Forma Debt to Cash Flow (x)	6.4x	6.8x	7.5x

### Contacts

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 marykay.cooney@moodys.com

## Arizona State University

Excellent Strategic Position Driven by Programming and Partnerships

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 spurs 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 national awareness.
- » **Multi-year strong revenue trends provide funds for ongoing strategic investment.** ASU's extraordinary net tuition revenue growth (60% from fiscal year (FY) 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.



# New Enterprise Programs: Principles

Stay consistent with ASU's educational and research charter.

Expand institutional capacity to achieve ABOR metric goals.

Build institutional capacity to close resource gaps.

Support efforts to improve Arizona's economic performance.

Build global partnerships in support of the mission.

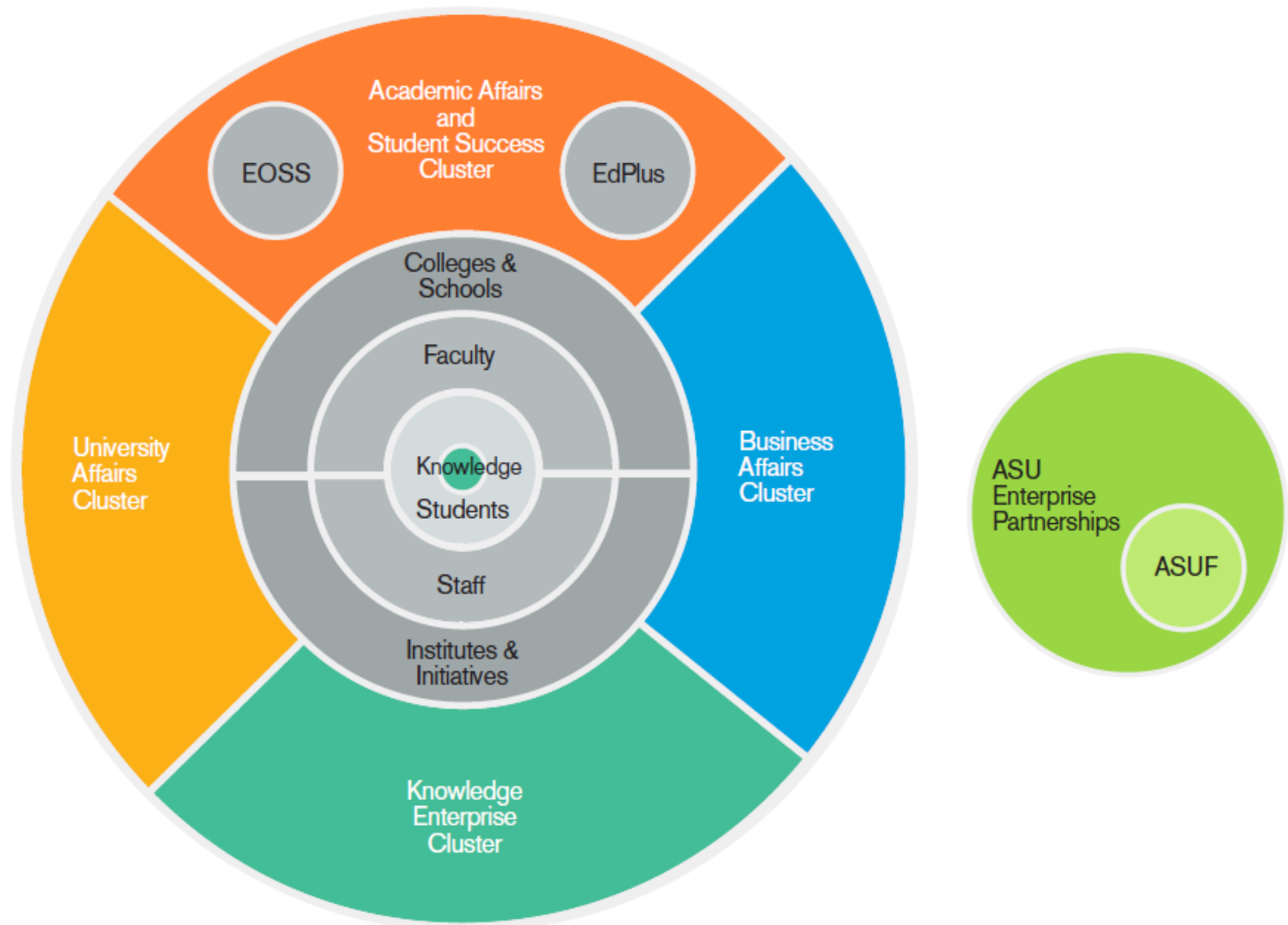
Serve as exemplars of New American University goals to demonstrate ways to expand educational opportunities to underserved groups and to provide new methodologies for higher education.

# Five Forces Are Reshaping Higher Education

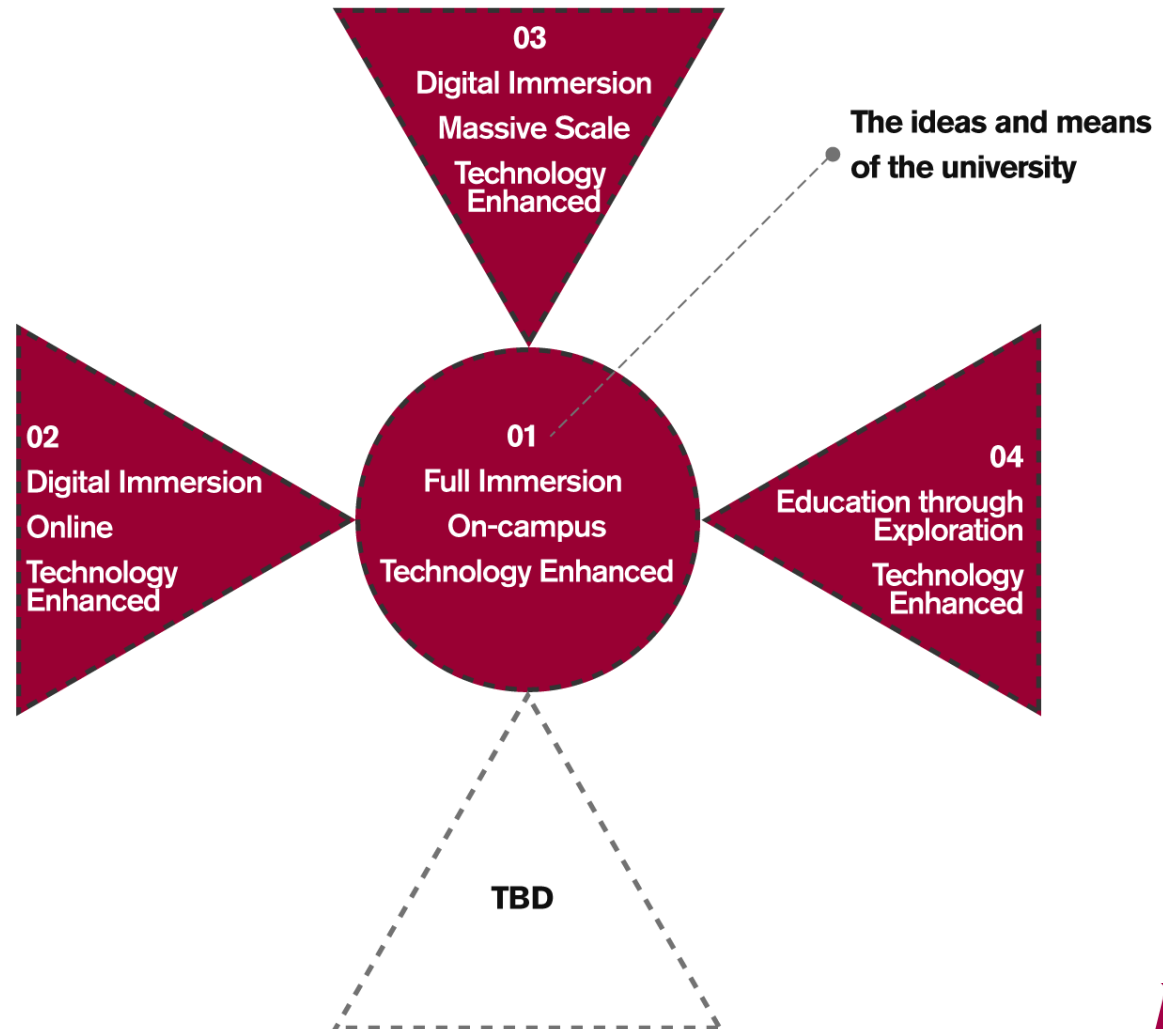
1. Economic and social disruption is continuing to accelerate, which is placing many institutions at risk.
2. The globalization of education is accelerating.
3. New business and delivery models are gaining traction.
4. Greater transparency about student outcomes is becoming the norm.
5. Student and family demands are rising for a greater return on investment in higher education.

# Advancing Learning and Knowledge

## Core Enterprise Structure

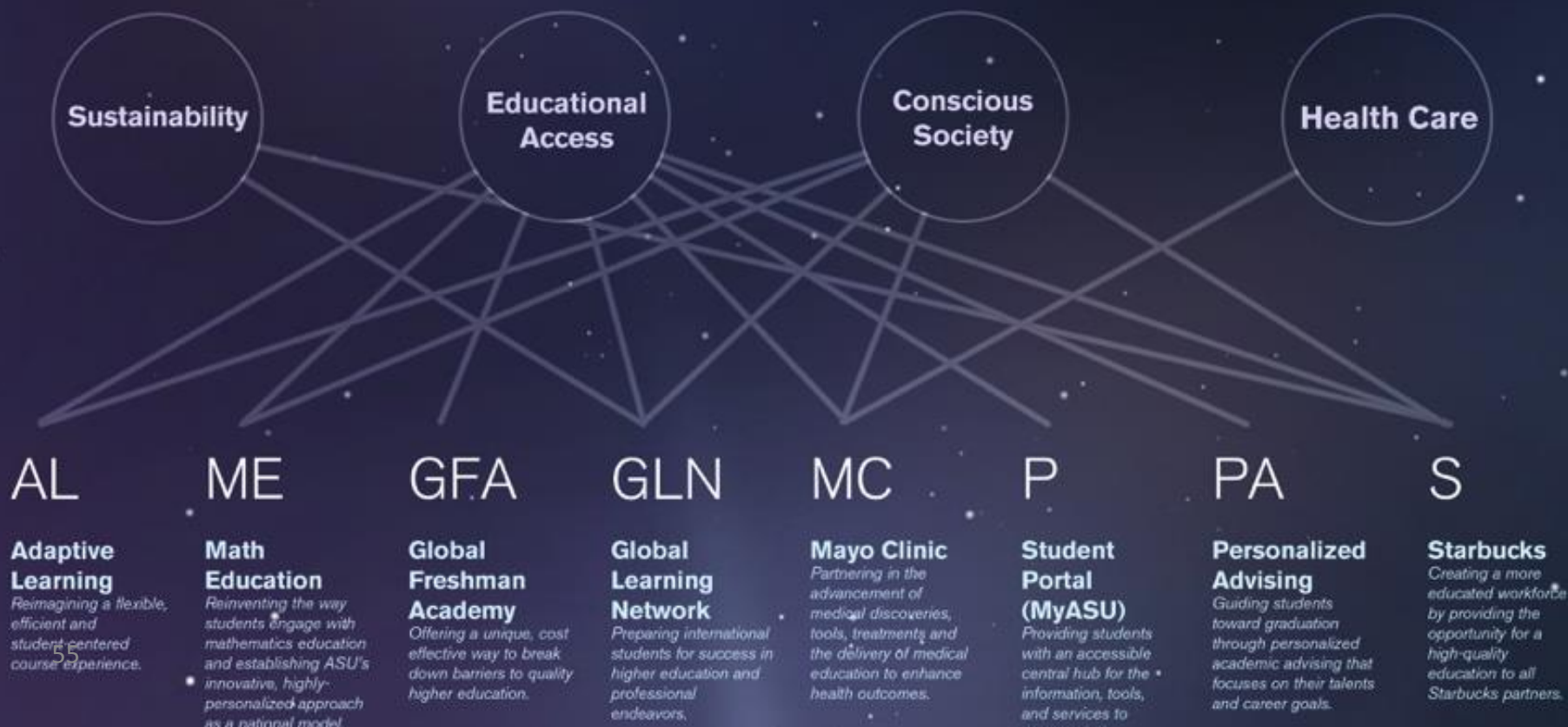


# ASU Teaching and Learning Realms



# Innovations in teaching and learning can be leveraged across the realms to improve outcomes and reduce cost

## Strategic Design and Development Projects



# Teaching and Learning Realm 1

## Full Immersion / On-campus / Technology Enhanced

**Immersion campuses are the home for the faculty which are the heart of all of the current and future activities in all of the four learning realms**

**Immersion campuses are the home of all of the research activities that are crucial to innovative contributions to economic development**

Goals:

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



# Full Immersion - On Campus - Technology Enhanced

## 72,000 students growing to 100,000

Four metropolitan campuses:  
Tempe, West, Polytechnic, and  
Downtown Phoenix

Four regional centers: Lake Havasu,  
Yuma, Safford, and Tucson

Anticipate substantial enrollment  
expansion and limited expansion in  
numbers of locations



# New Programs in Realm 1 Global Launch

Intensive English (non-credit)  
for international students  
seeking admission to American  
universities

Pathway Programs: preparation  
for ASU and other US degree  
programs combining intensive  
English and freshman courses

Specialty short duration non-  
credit programs for global  
cohorts such as STEM training  
for Brazilian teachers



# Teaching and Learning Realm 2

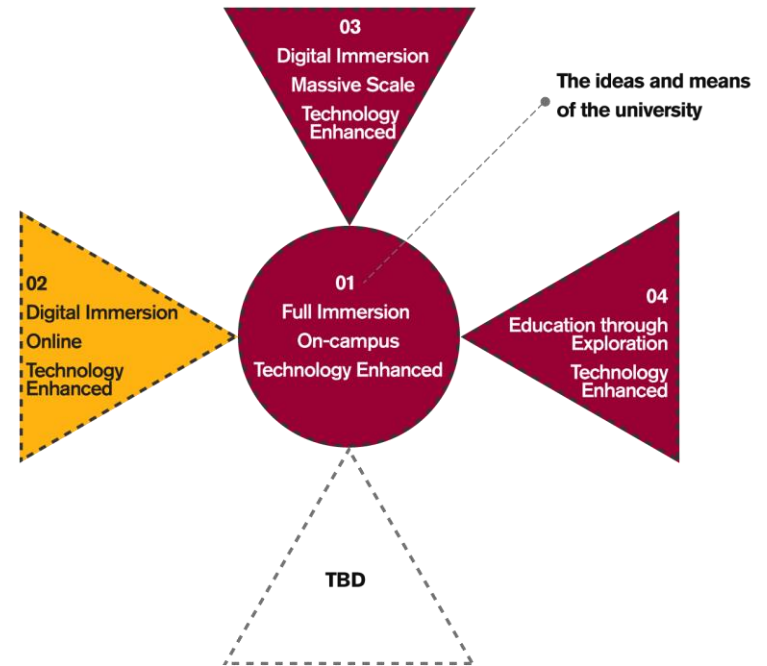
## Digital Immersion - Online - Technology Enhanced

**20,000 students growing to 100,000 +**

Provides the capability to advance degree attainment numbers by reaching potential students not able to reach campus

Goals:

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



# Digital Immersion - Online - Technology Enhanced ASU Online

## ASU Online

- Largely a domestic student body
- Different age and work demographics than on campus
- Requires major marketing efforts
- Anticipate continued rapid and substantial enrollment expansion



## Starbucks College Achievement Plan

- Targets a population that might otherwise be shut out of college educational opportunities
- Serves as an experiment in reaching new populations
- Corporate partnership reduces marketing efforts sharply



Will be taking steps and making investments to refine the operating models to increase internal reinvestment

# New Programs in Realm 2

## PLuS Alliance

Consortium with King's College London  
and University of New South Wales

Expansion of ASU Online into  
international markets

- Under-served populations
- Mix of certificates and degree programs
- Varied delivery modalities are likely
- Working with international partners to expand reach, broaden potential offerings, and to enhance reputation

## PLuS ALLIANCE

ARIZONA STATE  
UNIVERSITY  
PHOENIX

KING'S COLLEGE  
LONDON  
LONDON

UNSW  
AUSTRALIA  
SYDNEY

# Teaching and Learning Realm 3

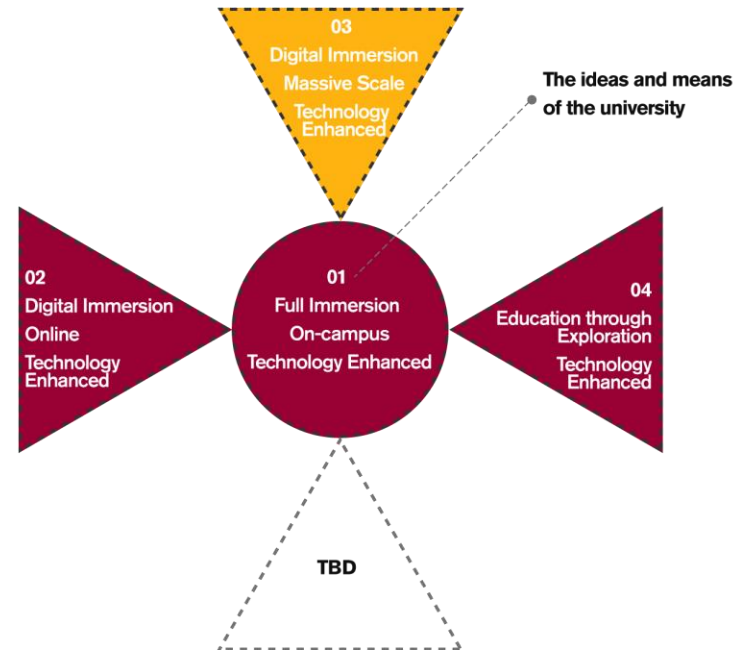
## Digital Immersion – Massive Scale - Technology Enhanced

**In start-up mode at ASU, with a demonstrated capacity to reach a million learners**

Provides the ability to reach learners with limited resources that will benefit from the teaching prowess of a research university

Goals:

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



# New Programs in Realm 3 Global Freshman Academy

Core freshman classes taught by prestigious ASU faculty in an enhanced MOOC format.

Options to purchase ASU credit after completion

Launched in Fall 2015 (Astronomy, Human Origins, Western Civilization)

Partnership with edX for promotion and delivery

Initial enrollment of 50,000 in the first three courses with 30% to 40% in the demographic of potential interest in receiving credit



A screenshot of an edX course page. The top navigation bar includes "edX", "Courses", "How It Works", "Schools &amp; Partners", "About", a search bar with "I want to learn about...", "Sign In", and "Register". The main content area features a green chalkboard image with mathematical formulas on the left. To the right, the course title "College Algebra and Problem Solving" is displayed, followed by the description: "Learn the basics of Algebra while preparing for future courses in Calculus through this credit-eligible college level math course." Below the description is the ASU logo and the text "Starts on March 14, 2016". A prominent green "Enroll Now" button is visible, along with a checkbox for email notifications: "I would like to receive email from Arizona State University and learn about its other programs."

# New Programs in Realm 3

## ASU Digital Academy

To be built upon the ASU Prep Academy successes in making ALL students successful

Will offer high-level coursework to high school students in schools with limited offerings and diplomas to Arizona students unable to attend physical schools

Curriculum design by ASU Prep Academy teachers with EdPlus instructional designers

Currently exploring the market with hopes of deployment within a year



THE ASU BRAND



CURRICULUM AND PEDAGOGICAL APPROACH



REPLICATION OF BRICK AND MORTAR SUCCESS AT SCALE



MODULAR, COMPETENCY-BASED APPROACH



MARKETING AND ONBOARDING



SUCCESS COACHING AND COUNSELING



# Teaching and Learning Realm 4

## Education through Exploration- Technology Enhanced

**Extend educational opportunities for to millions of under-served students globally**

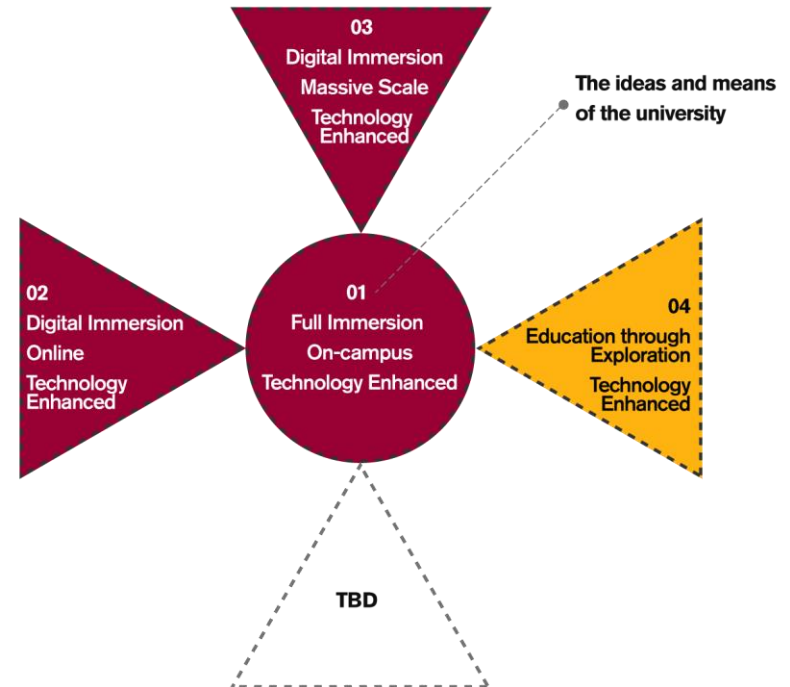
**Provide new ways to learn through interactive short lessons**

**Provide initial contact with potential students for realms one, two, and three**

Global impact

Goals:

- Global scale engagement
- Totally personalized learning



# New Programs in Realm 4

## Center for Education Through Exploration

### New Teaching Philosophy:

- Explore the unknown instead of mastery of the known
- Focus on transdisciplinary questions instead of disciplinary silos
- Design, develop, deploy and research interactive, exploration-based learning using digital platforms and teaching networks
- Explore the unknown instead of mastery of the known
- Focus on transdisciplinary questions instead of disciplinary silos
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# Advancing the ASU Charter's research and community responsibility missions through innovation

- Supporting entrepreneurship
- Accelerating technology transfer
- Encouraging new businesses through the Innovation Zones @ ASU
- Advancing community health and biomedical investments
- Expanding the population of college-ready students in all communities
- Sharing and scaling innovations in student success

# Economic Development: Entrepreneurship

## Technology Transfer (FY15)

- 270 invention disclosures
- 63 U.S. patents
- 12 new start-up companies
- 81 major licensing and option transactions
- \$500M to ASU spin-outs

## Support for Entrepreneurs

- Innovation Challenges, Launch Days, and Start-up Spring Break engaged over 12,000 students last year
- Entrepreneurship Outreach Network, Startup School
- Furnace



**FLUIDICENERGY™**



Entrepreneurship Outreach Network

# Economic Development: The Regional Environment

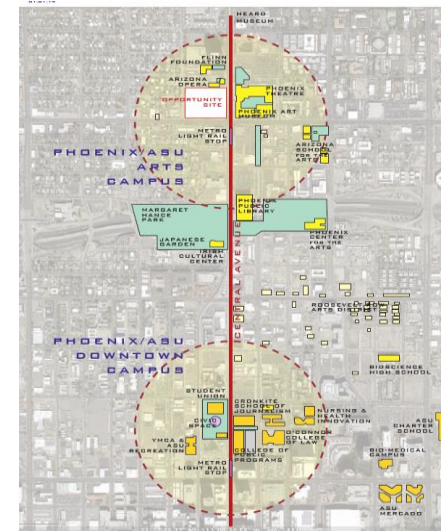
## Innovation Zones @ ASU

- ASU Research Park in south Tempe- 1.8 million SF serving as the home to 48 companies and over 4,500 employees
- SkySong in south Scottsdale- home to a wide range of technology companies and ASU EdPlus
- Chandler Innovation Center- home to TechShop and ASU student innovation programs
- ASU Polytechnic Innovation campus- in the planning stages
- ASU-Mayo Health Solutions Innovation Center- in the planning stage at Desert Ridge adjacent to Mayo Hospital



## Regional Planning Support

- The Central Idea”: a concept plan to spur the Phoenix Arts District
- “Downtown Assembled”: a study to contribute to Mesa’s intensive planning efforts
- “Nexus City”: a schematic proposal for the Polytechnic- Gateway area



# ASU and the Mayo Clinic Innovation in Individual and Community Health

Shared facilities  
Collaborative research  
Shared faculty, appointments and graduate students  
Mayo Medical School in Arizona in collaboration with Arizona State University (2017)  
Joint education programs  
Joint seed-fund program  
Proton-beam therapy program  
School for the Science of Health Care Delivery



# ASU Preparatory Academy

## Demonstrating that Every Student Can Succeed

Two charter schools located in downtown Phoenix and East Mesa on the ASU Polytechnic campus.

Operating principles = “The Four Pillars”:


- Academics
- Partnership
- Leadership
- Innovation

2,000 students in pre-K to grade 12

1,000+ students on the waitlist

76% low income students in Phoenix

330% enrollment increase in 3 years

 improved achievement levels across all grades

**23%**  
in Reading

3.7% overall average growth in state

**24%**  
in Math

3.6% overall average growth in state

**ASU Prep Phoenix Performance**

# me3

## College Planning Needs to Start Early in High School

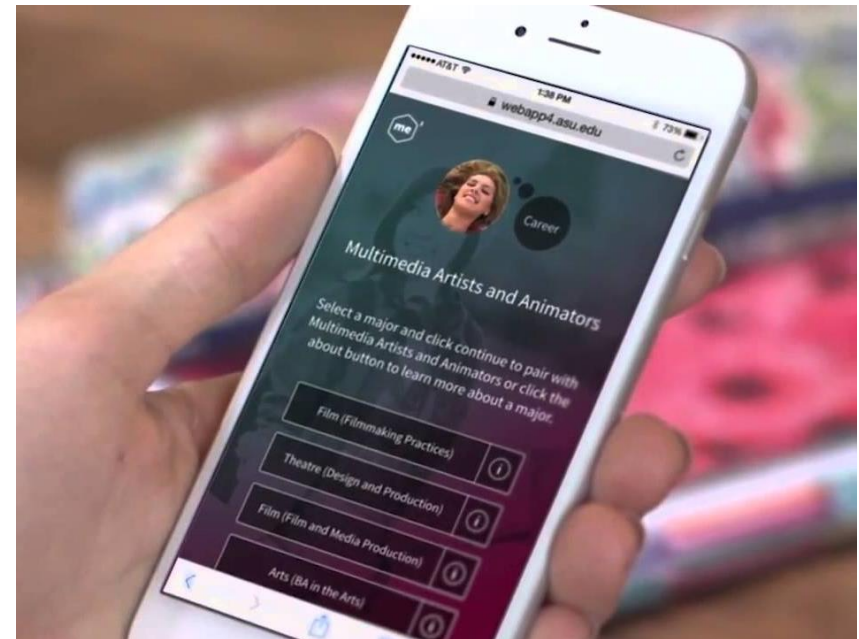
A **mobile-friendly** and visually-oriented tool designed for early year **high school students**

Asks simple questions about student **interests**

Pairs those interests with possible career options and **college majors**

Identifies what **high school classes** are needed to be accepted and **when to apply** to college

Gives insights about **life after college**





# University Innovation Alliance

## Sharing Resources and Best Practices

A unique consortium of public research universities established to help more students from all socioeconomic backgrounds graduate from college.

UIA members share information about innovative practices at their campuses that have been implemented at their campuses in the effort to increase retention and graduation rates.

The UIA members have collectively pledged to increase the number of graduates from lower income backgrounds by 68,000 by 2025.



