

Leaning Into the Future

Innovation, Quality and Value

Making Higher Education Attainable Interim Study Committee September 17, 2019



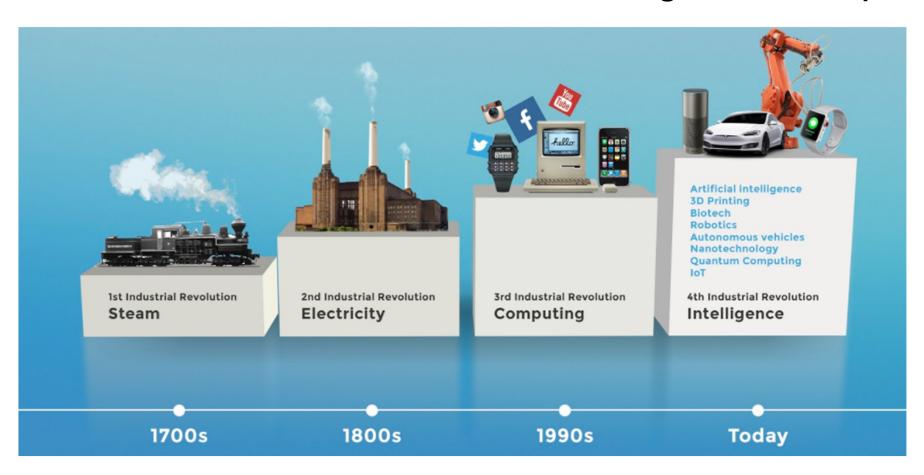
FOUR CAMPUSES UNITED ALL FOUR: ONE

University of Colorado

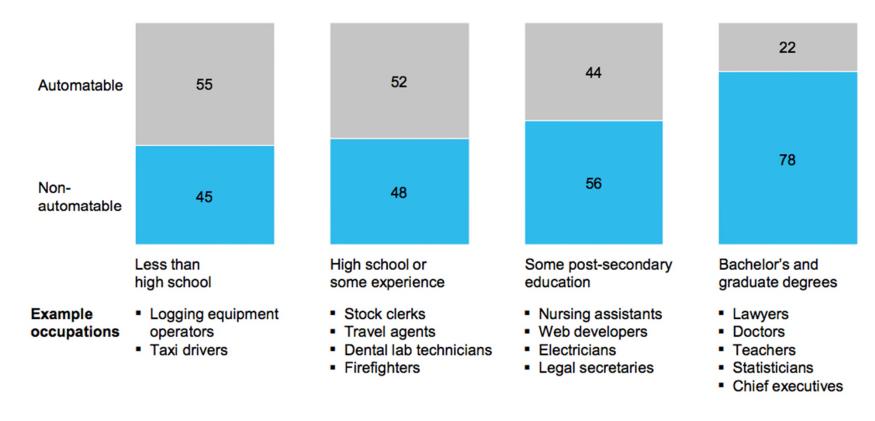
Boulder | Colorado Springs | Denver | Anschutz Medical Campus

4IR Drives Need for More Bachelors Degrees

Fourth Industrial Revolution accelerating tech disruption



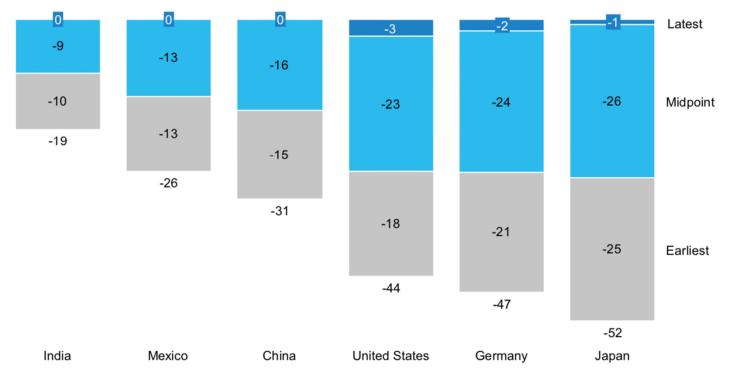
Automation will hit jobs not requiring bachelor's hardest



Automation could replace 44% of U.S. jobs by 2030

Projected impact on total employment in midpoint automation scenario, 2016-30

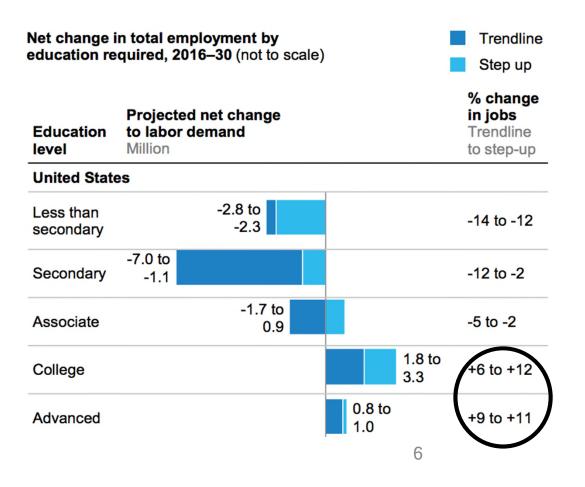
% of FTE hours with potential to be automated, midpoint scenario (range of automation scenarios, latest to earliest)



NOTE: Numbers may not sum due to rounding.

Source: Jobs Lost, Jobs Gained: Workforce Transitions in a Time of Automation — McKinsey, December 2017

Requirements of new jobs and skill upgrades drives demand for 4 vs. 2-Year degrees

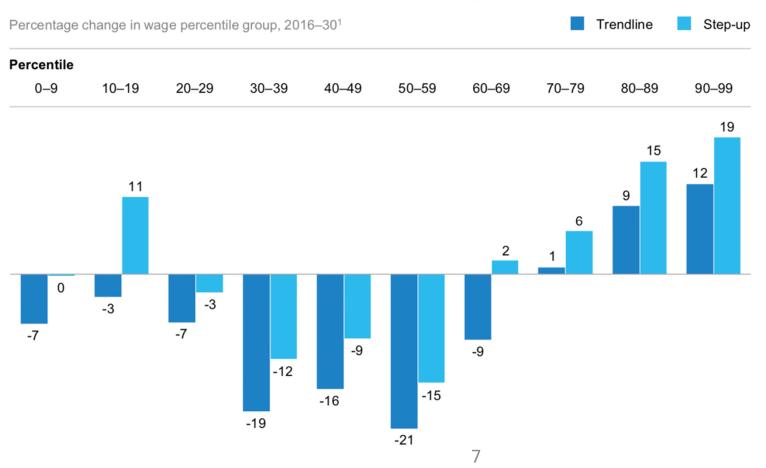


Community colleges are critical part of affordability pipeline

Source: Jobs Lost, Jobs Gained: Workforce Transitions in a Time of Automation — McKinsey, December 2017

Predicted wider gap suggests need for more bachelors

In the United States, high wage jobs see the most growth and middle wage jobs decline the most

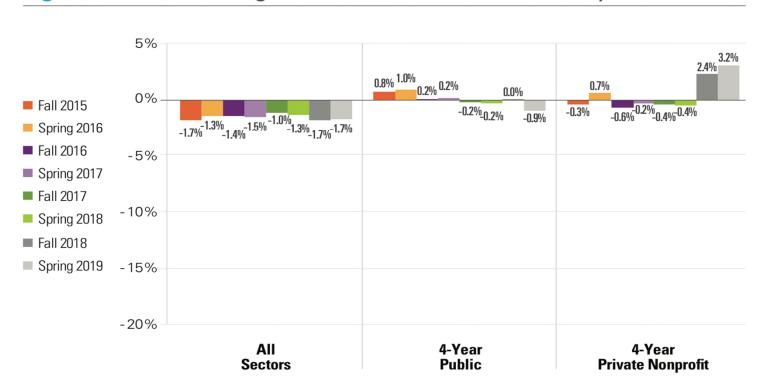


Source: Jobs Lost, Jobs Gained: Workforce Transitions in a Time of Automation — McKinsey, December 2017

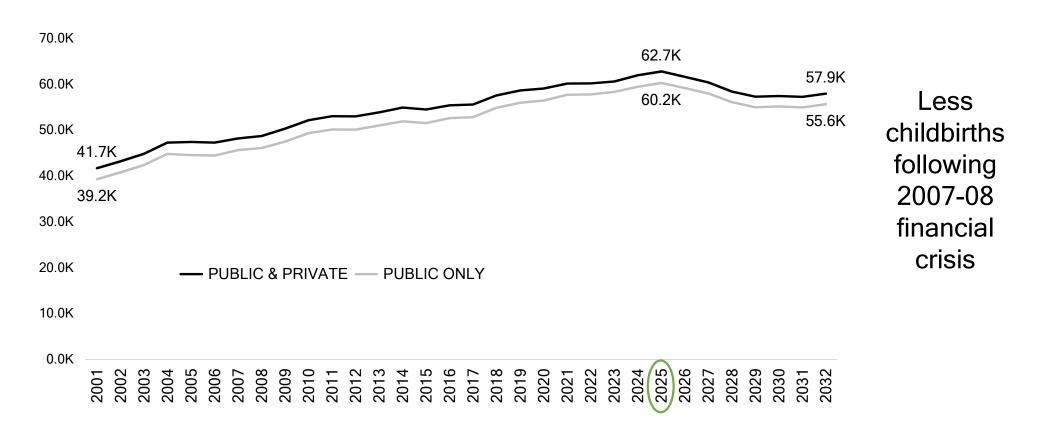
On-Campus Will Not Fully Meet Need for Bachelor's

Seventh year of decline in national on-campus enrollment

Figure 1: Percent Change from Previous Year, Enrollment by Sector

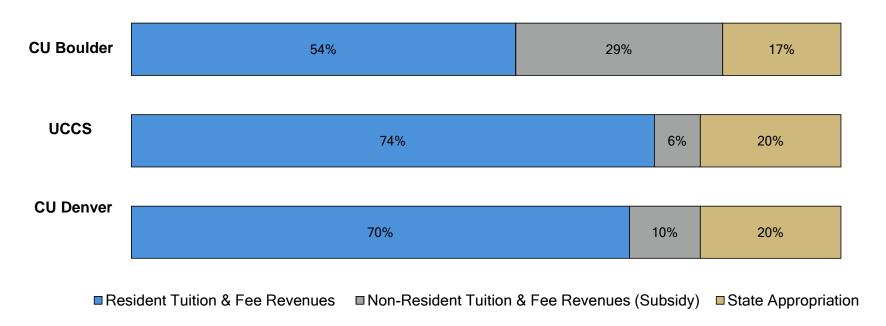


Colorado high school graduates peak in 2025 impacting college enrollment



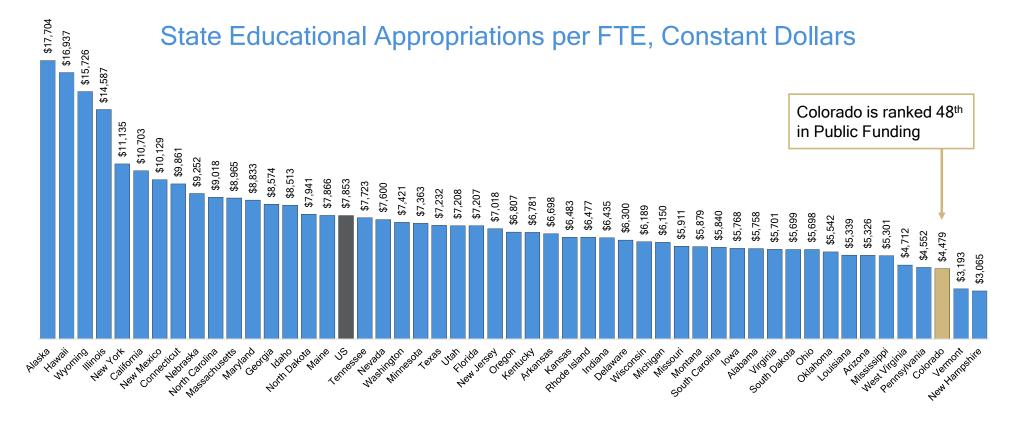
Demographic trends makes reliance on OOS students to subsidize in-state students and preserve quality risky

Funding the Cost of Resident Education at CU Undergraduate and Graduate Cost per Student FTE, FY 2018



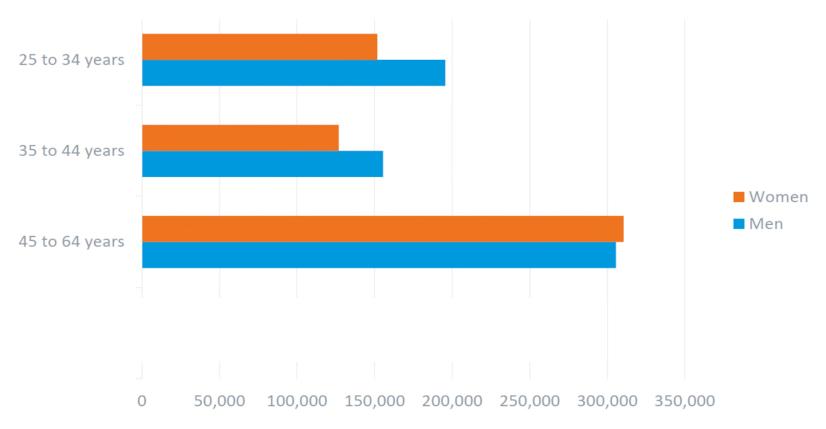
If future students are more expensive to graduate this challenge will be amplified

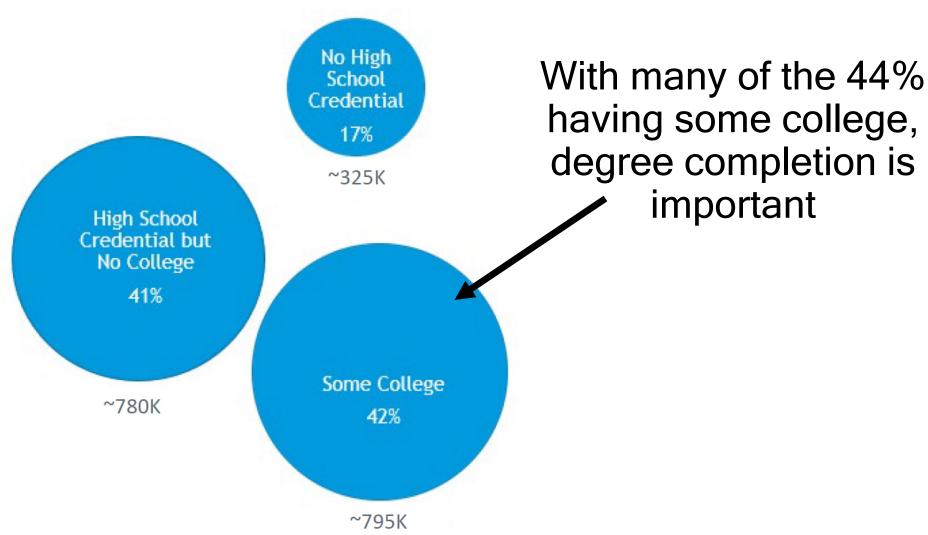
States working hard to keep their graduates so relying on other states to educate CO workforce is risky



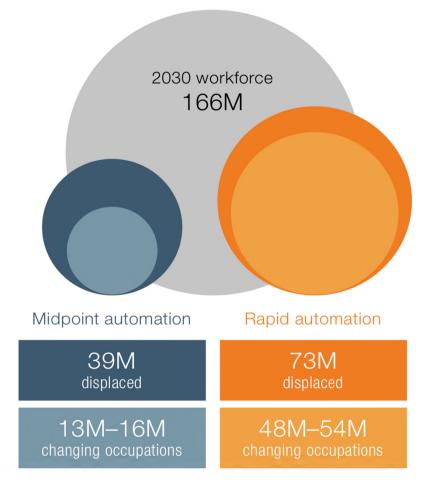
Must Meet Needs of Non-Traditional Students

Many of 44% without post secondary credentials in CO, over 25 years old making online essential to meeting state needs





Up to 33% of workforce may need to switch occupations

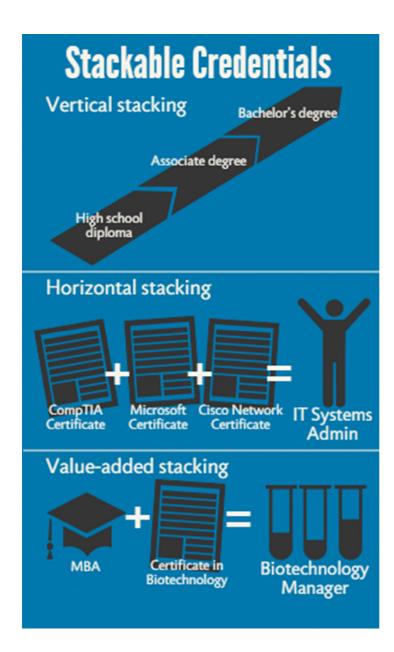


Lifelong learning becoming the norm.

No longer will higher education be one (degree earned) and done.

From degrees to credentials From students to learners

- Credentials, badges, micro-masters
- Stackable, perhaps to degree
- Support nontraditional students and lifelong learners
- Building on credentials from others



Investment Necessary to Meet Life Long Learner Needs

Leverage Technology

Digital natives (your children and grandchildren) will press for academic innovation

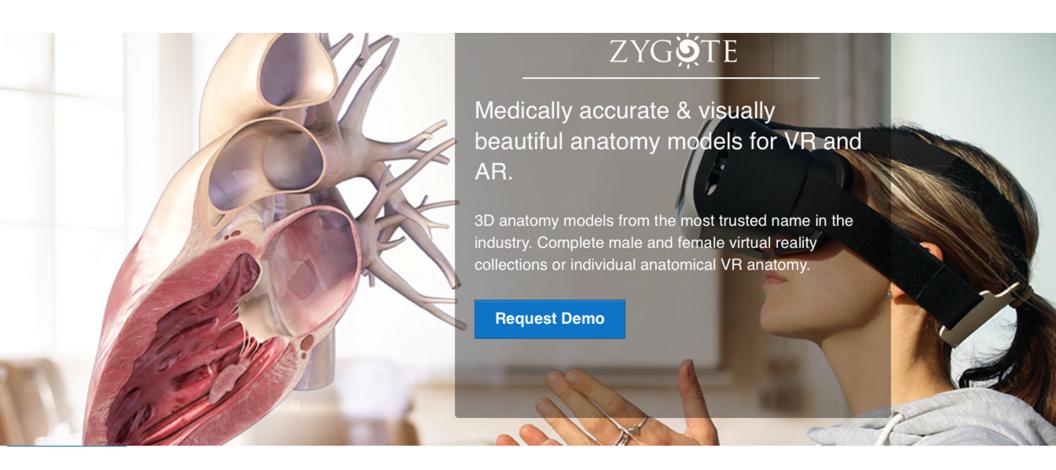
Moving from:

- Same place
- Same time
- Same pace
- Same way

Moving to:

- Classroom dialogue preceded by at least the minimum threshold of understanding (advanced learners can go further and faster) for the subject as delivered by and confirmed by a digital adaptive learning platform that knows:
 - What each student knows
 - What they don't know
 - What learning style best suits them
 - What incentives encourage them to learn more

Virtual and Augmented Reality offer possibilities



Data Driven Innovation



Need rapid testing cycle for new teaching methods and credentials

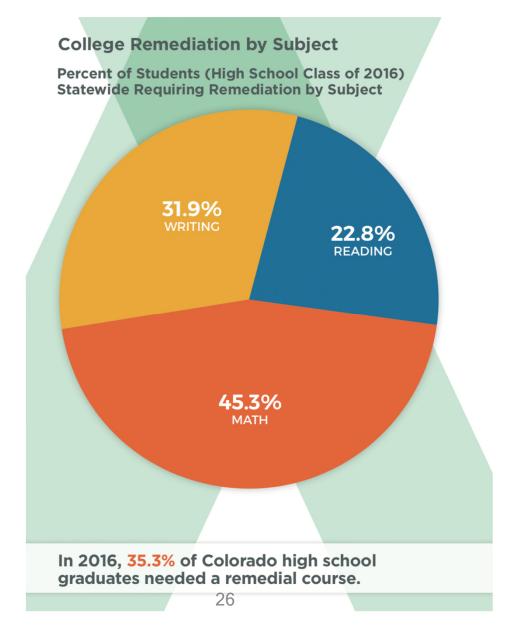


Investment Necessary to Meet Technology Needs

Enrollment Trends Increasing Costs

Many
high school
graduates are
not prepared for
current CU
campus and
online offerings.

How can we help bridge the gap?



Colorado Succeeds - 2019 Field Guide

CU's undergraduate enrollment growth driven by URM and Pell students since 2009

+109%
Student of Color

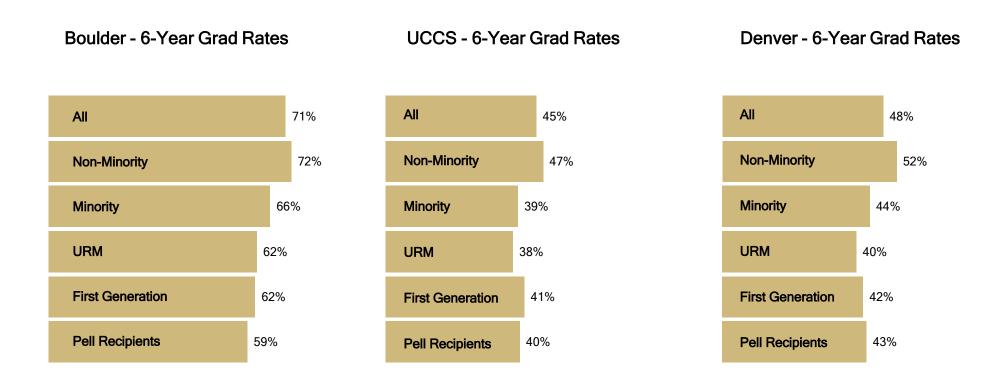
7,958 to 16,597 Fall 2009 to Fall 2018 +102%
URM

5,000 to 10,093 Fall 2009 to Fall 2018 +41%
Pell Recipients

8,731 to 12,270 Fall 2009 to Fall 2018 -1% White

33,027 to 32,764 Fall 2009 to Fall 2018

Student success likely requires more support services to close graduation rate gaps





Addressing student needs, like food insecurity is a growing requirement

CU Students Enrolling in More Expensive Programs

CU System CU Majors, by Discipline

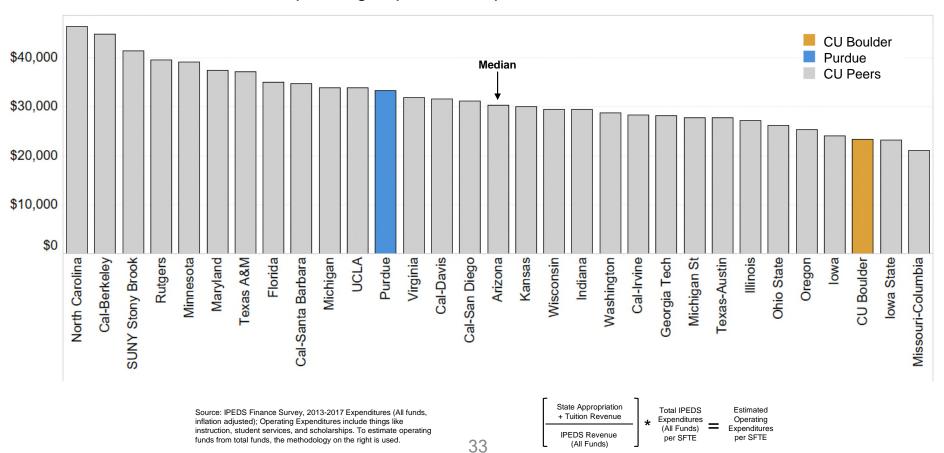


Investment Necessary to Address Enrollment Trends

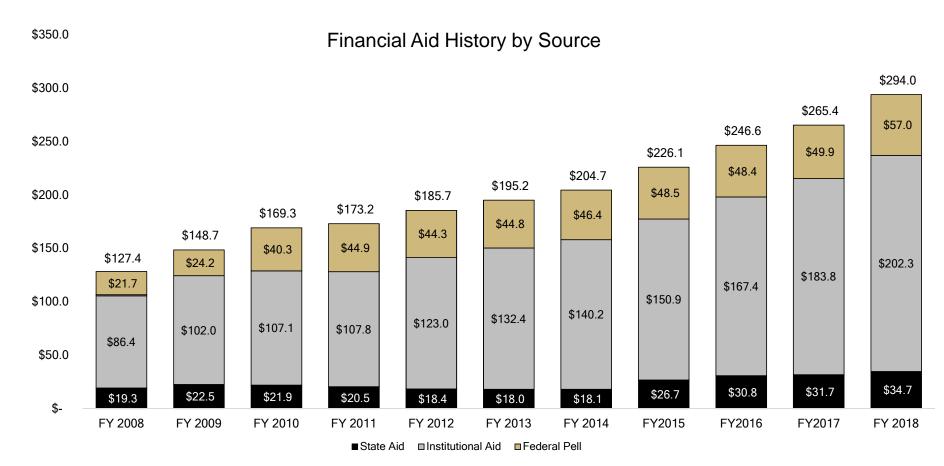
Controlling Cost to Keep CU Attainable

CU amongst most efficient in nation

Estimated Operating Expenditures per Student FTE – CU Boulder

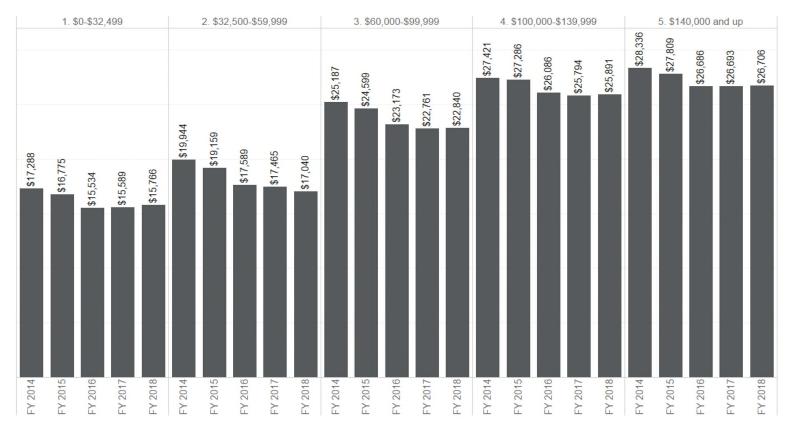


Constraining tuition and investing in financial aid to keep CU attainable



Result: Reduced out-of-pocket costs over time

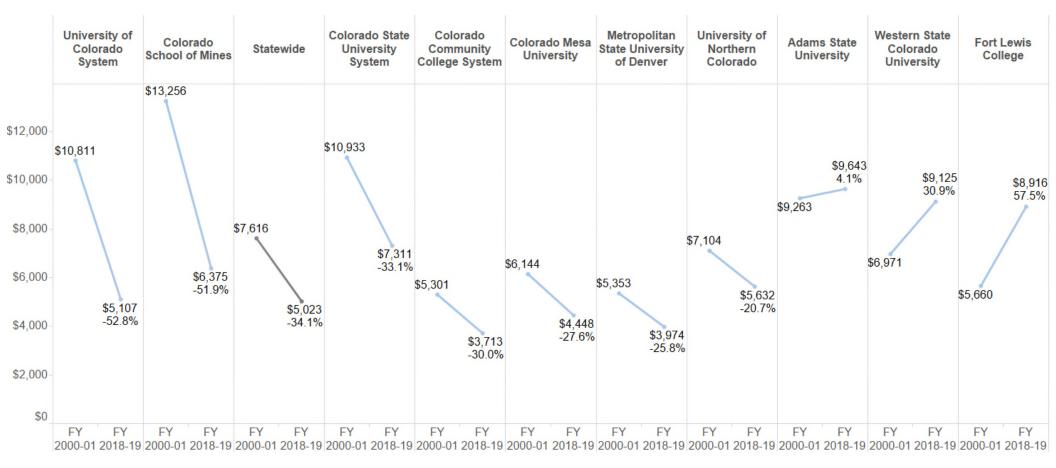
Out-of-Pocket Costs by Income - CU Boulder (Adjusted for Inflation, Average Cost of Attendance minus Average Grant Aid)



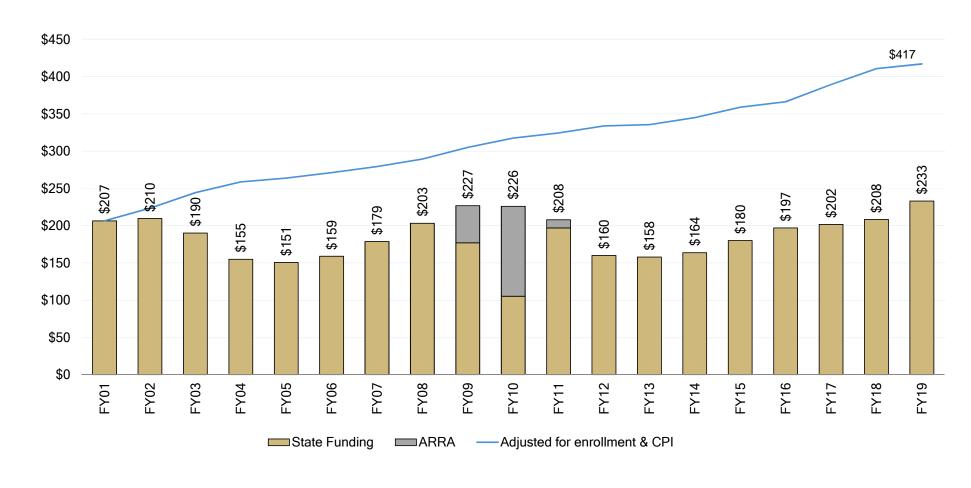
State's Investment in Higher Education Critical

State Funding per Full-Time Resident Student

FY 2000-01 to FY 2018-19, Adjusted for Inflation



History of State Funding



Over a lifetime, bachelor's degree holders contribute \$381,000 more in taxes than they receive in benefits



Trostel, Lumina Foundation, "It's Not Just the Money," 2015.

Net Gain for bachelor's degree holders is \$355,000 more than high school graduates

Partnerships



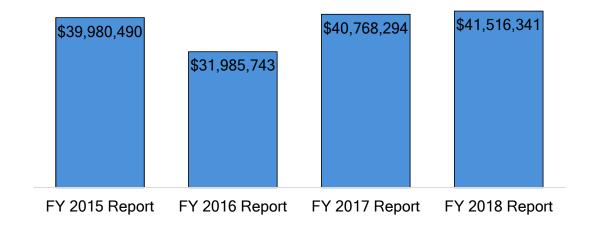
- CU Boulder partnership with CMU and WCU so students can earn a CU Boulder mechanical engineering degree in its entirety at the CMU campus in Grand Junction and the WCU campus in Gunnison.
- UCCS and PCC transfer partnership to provide clear pathways for PCC students to continue their academic education and pursue a Bachelor's degree at UCCS.
- CU System procurement contracts with Dell, Xerox, and Konica Minolta shared with ASU, CSU, CSU-Pueblo, Mines, UNC, and Colorado College.

Ongoing Efficiency Efforts

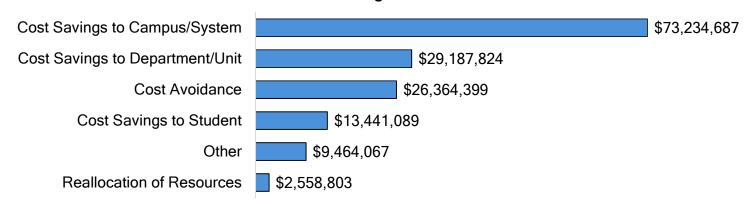
\$154 million

FY 2015 to FY 2018

The university reports annually on its ongoing efforts to increase efficiency and delivery greater value. These efforts result in savings to students, departments, campuses and employees.



FY 2015 through FY 2018



Preparing for the future, informed by the past

Future Investments Needed

- 4IR
- Technology Needs
- Enrollment Trends

Past State Funding Cuts Had Impact

- Tuition Increased
- Financial Aid Couldn't Keep Up
- Deferred Maintenance Grew
- Graduation Rates

Preparing for Future

- Containing Costs
- Innovation
- Revenue Diversification

