State of Higher Education in Nevada

John Valery White
December 5, 2016

The attached slide presentation paints a picture of the state of Nevada higher education in 2016. In addition to the presentation, the following paragraphs provide a guide by which to understand higher education in Nevada in the areas of capacity, performance, and hurdles toward achieving success.

Comparing Nevada to the four states within 1% of Nevada's population shows how we fare among states for whom the challenges of providing public services is most likely to be of similar scope and scale. This comparison also helps add context to data locating Nevada higher education in relation to national averages. In both comparisons Nevada does not fare well though there are some signs of improvement. For a more complete presentation, please refer to the Chancellor's speech to the Board of Regents from September 9, 2016 (www.nevada.edu/sos2016/).

Capacity

Since the creation of the Nevada System of Higher Education (NSHE) in 1969, higher education enrollment in the United States has exploded from 8.58 million students in 1970 to 21.01 million students in 2010 when enrollment peaked and began a slow decrease that continues today. As **Slide 2** shows, Nevada enrollment was just 2700 per 100,000 citizens in 1970, well below the national average of 4,200 students per 100,000. Between 1970 and 1980, higher education enrollment in Nevada rose, peaking at 5,100 students per 100,000 and nearly closing the gap between Nevada enrollment and the national average. However, as population growth accelerated, Nevada lost ground. By 2000, there were only 4,400 Nevada higher education students per 100,000 residents. And, as higher education enrollment accelerated throughout the country, jumping to 6,800 students per 100,000 residents nationally in 2010, Nevada did not keep pace. **Slide 3** shows that Nevada lost ground, especially at its public four-year institutions. Despite some growth from 1980 to 1990, there is a precipitous drop in four-year enrollment per 100,000 in the next decade. Accompanied by a steady decline in enrollment per 100,000 at Nevada two-year institutions since 1980, it is apparent that Nevada has too few students in higher education.

It is not news to anyone that Nevada has a low attainment level (the percentage of its citizens with a higher education degree). **Slide 4** shows Nevada well behind the national average and basically tied with two of the four comparator states for last in degree attainment. More troubling, Nevada has the smallest population age 18 and under (**Slide 5**) and both the smallest population of traditional college age residents with the lowest percentage of those college-aged residents enrolled in higher education (**Slide 6**). While several of our comparator states meet or slightly exceed the national average with two fifths of their college-aged residents enrolled, only a quarter of Nevada's college-aged residents are students. These low levels of enrollment also mean that Nevada institutions have a very high percentage of students older than 25 (**Slides 7-9**), making the job of Nevada institutions more difficult and expensive.

If low levels of higher education enrollment bode poorly for developing an educated workforce for Nevada, the State's investment in higher education, which has traditionally been linked to enrollment levels, suggests challenges in increasing enrollment. Nevada is 45th in the country in its per capita support of higher education (**Slide 10**), 44th in its support of higher education per $1,000 of personal income (**Slide 11**), and 39th in the percentage of the state budget going to higher education (**Slide 12**).

Unsurprisingly, Nevada is last among the comparator states, most of which have much lower household incomes than Nevada. Obviously, these low levels of investment in higher education are linked to the low levels of student enrollment in higher education. Moreover, a closer look at Nevada higher education spending shows that Nevada relies heavily on non-state sources to fund higher education, despite relatively low levels of research expenditure at its research institutions and therefore low research overhead revenue.

Though it is fourth in the five-state comparator group in state support, Nevada is third in revenues coming from tuition (**Slide 13**). More stark, Nevada and Utah rely very heavily on investment income and gifts to support higher education (**Slide 14**), with 10% of higher education revenue coming from gifts and endowment income (**Slide 15**). Thus, even with many fewer students enrolled in higher education, Nevada's per FTE appropriations for higher education remain low in comparison with similarly sized states (**Slides 16 and 17**, two and four year appropriations per FTE).

More of Nevada's higher education expenditures per FTE go to instruction than in the comparator states (**Slide 18**). Attractive though this statistic might seem, it highlights the limited spending in Nevada on student support and student services. And while comparable data is hard to come by, it is clear that Nevada has less space per student for instruction, research, or support (**Slide 19**).

Associated with the space deficit is a significant gap in higher education R&D expenditures at Nevada's research institutions (**Slide 20**). Total research expenditures in Nevada are only slightly more than half of the next nearest state (54.5% of Arkansas), and only 22% of the best performer (Utah). Nevada research expenditures are only 36.8% of the average of the group and Nevada gets only 7% of the more than $2 billion of research grants tracked by the NSF in the five states. Nevada's per-capita research expenditure of $55 is only ¼ of the U.S. average. For detail on individual research institution performance in the comparator states, see **Slides 21-25**.

These capacity issues are all the more troubling because Nevada's enrollment is so much more diverse than other states. Consider two-year enrollments in the comparator states (**Slide 26**). While Mississippi leads the group in African American enrollment, and Arkansas and Kansas also have larger African American enrollments, no state is close to Nevada in overall diversity of its students. In Nevada, 51 percent of students come from a minority group (Mississippi is next with 44%). And Nevada has larger Hispanic, Asian, and Native Hawaiian or Pacific Islander populations than the comparator states (**Slide 27**). In this context, our goal of closing the equity gaps in enrollment, retention, and completion (on which we have been making progress), is an urgent matter and our limited state investment a potentially troubling implication about our commitment to all our citizens.

Performance

Graduation rates at Nevada two-year institutions lag behind the national average of 19.5% and behind the levels of the comparator states (**Slide 28**). Nevada also lags behind the comparator states in the percentage of graduates and transfer students from two-year institutions. Graduation rates at the four-year institutions are better against comparator states but still significantly (12 points) behind the national average (**Slide 29**). Both two- and four-year Nevada institutions perform poorly on degree efficiency relative to the comparator states, with only 26.7 and 18.5 degree awards per 100 UG FTE (**Slides 31-32)**. On the other hand, Nevada two-year institutions exceed the national average and comparator states in student retention (**Slide 33**) and four-year institutions meet the national average for student retention (**Slide 34**).

There is some indication that Nevada's performance funding formula is driving improvement at all of the state's institutions. While 3-4 years of data is hardly definitive and the trends are not yet significant enough to have faith in the direction of Nevada institutions, in most cases the trends are positive. Four-year institutions have shown increases in FTE enrollment (**Slide 36**), weighted student credit hours (**Slide 37**), bachelor's degrees awarded (**Slide 38**), STEM and Allied Health awards (**Slide 39**), and at-risk graduates (**Slide 40**). The only negative data is in the number of master's and doctoral awards (**Slide 41**), though it is unclear whether this is the result of the formula focusing institutions on undergraduate success or, more likely, the lingering effects of deep cuts during the Great Recession and the loss of highly productive, senior faculty whom one would expect to mentor and guide graduate students. In any case, one can draw a troubling link between this performance and the low levels of R&D expenditure in the state.

Two-year institutions' success under the formula has not been as definitive but there is success nonetheless. Although enrollment and weighted student credit hours have been down, driven by decreases at the largest institution (CSN) (**Slides 42-43**), degrees awarded are up at all two-year schools (**Slide 44**), as are the award of certificates (**Slide 45**), STEM awards (**Slide 46**), and at-risk graduates (**Slide 47**). Overall, the performance under the funding formula suggests progress that can help the state increase its attainment levels in years to come. However, it would take truly extraordinary performance to overcome the low enrollment levels overall and limited capacity in higher education in Nevada more generally.

Similar challenges exist in workforce development, though the performance of the Dental and Law Schools suggest that the state can make up for deficits in professionals that emanate from the state's rapid growth. Nevada is now rated nicely with the comparator group in the numbers of dentists and attorneys per 100,000 (**Slide 48**). This trend bodes well for Nevada's ability to make up for the substantial deficit in doctors and deficit in medical school enrollments (**Slide 49**) with the launch of Nevada's two medical school approach.

Making up the gap in professionally active nurses (**Slide 50**) will take targeted efforts, as will NSHE's efforts to address the teacher shortage in the state. Our current targeted proposal to increase career and technical training for the many companies relocating to Nevada will prove a similar challenge, one that we have asked the state for support and targeted assistance.

Hurdles to Success

In the highly competitive and critical environment that characterizes higher education today, Nevada higher education faces pressing additional hurdles to success. Nevada institutions are insufficiently staffed relative to the comparison group. Nevada two-year institutions have the second worst student faculty ratio and its four-year institutions the worst (**Slide 51**). Such sparse staffing not only makes it difficult for Nevada faculty to do their jobs, it makes it hard for them to take on the additional tasks related to improving enrollment, persistence, completion, and research levels. In such a circumstance it is also difficult to recruit the highest performing faculty to our institutions. This is all the more challenging after years of stagnant pay, benefit cuts, and inadequate space. Add to this the apparent lack of investment in student support and our institutions are seeking to improve enrollment, persistence, and graduation rates without the staffing to do so.

Most substantial among our challenges is the well-known pipeline problem. Despite the well-worn, but unsubstantiated, notion that large numbers of Nevada high school graduates leave the state for higher education (**Slide 52**), only 12.5 percent of Nevada high school graduates do so. And a recent NY Times analysis suggests that Nevada is a slight net importer of college students. (Strayer, Nick. "How Cuts to Public Universities Have Driven Students Out of State." The New York Times, 26 Aug. 2016, http://www.nytimes.com/interactive/2016/08/26/us/college-student-migration.html)

What is more troublesome is the leakage of students out of the education system from 9th grade though graduation from college. In Nevada only 10% of 9th graders graduate with a higher education degree in 150% of program time (**Slide 53**). This is less than half of the national average and significantly below the comparator group. Part of the problem is the large percentage of Nevada secondary students who do not become seniors or otherwise don't graduate when they should.

For higher education, though, a related, significant problem is the lack of preparation for college among those who do graduate, more than half of whom enroll in NSHE institutions. Most of you are likely aware of the recent ACT report on the lack of preparation of test takers in Nevada. Perhaps more telling evidence is 2014 data that shows that among the 70% of Nevada high school graduates who receive the standard high school diploma, the average ACT scores are about 18, well below the College Readiness benchmarks (**Slide 54**). The average for students receiving the advanced diploma is above those benchmarks but not substantially so. Even the recipients of the advanced diploma (39%) require some remedial instruction (**Slide 55**).

Ultimately, we don't have enough high school graduates and not enough of them are college ready to permit Nevada higher education institutions to make a difference in helping Nevada meet its attainment goals. Though the state has recently invested in improving secondary education outcomes, it will take some years for those results to be felt. NSHE institutions will need to go well beyond their traditional missions to make up for the deficits in Nevada student preparation. Since they will need to do this while still pursuing their mission to educate students, develop the Nevada workforce, and engage in significant research, Nevada institutions will eventually need targeted funding to support their extraordinary efforts.

Going Forward

Given these grim facts, how does Nevada avoid fatalism, especially when the state's resources are expected to be limited? The NSHE is already working on a new strategic framework that aligns its goals with the state's attainment ambitions. And our institutions are experimenting with creative ways to help increase high school completion and college enrollment. The Legislature needs to be prepared to fund those which prove successful.

The NSHE budget request is targeted at addressing these challenges: progress under the formula is rewarded per its terms; an adjustment to the formula will incentivize career and technical training; the Silver State Opportunity Grant is expanded to address affordability at our community colleges; and we propose taking steps to address wage stagnation among our faculty and staff (**Slide 56**).

A longer term approach will require more detailed understanding of the gap between Nevada institutions and their peers. **Therefore, the NSHE encourages the Legislature to revisit and redo the 2004 capacity study authorized by AB 203, adding to it a specific focus on workforce development** (*https://www.leg.state.nv.us/Division/Research/Publications/InterimReports/2005/Bulletin05-03.pdf*).

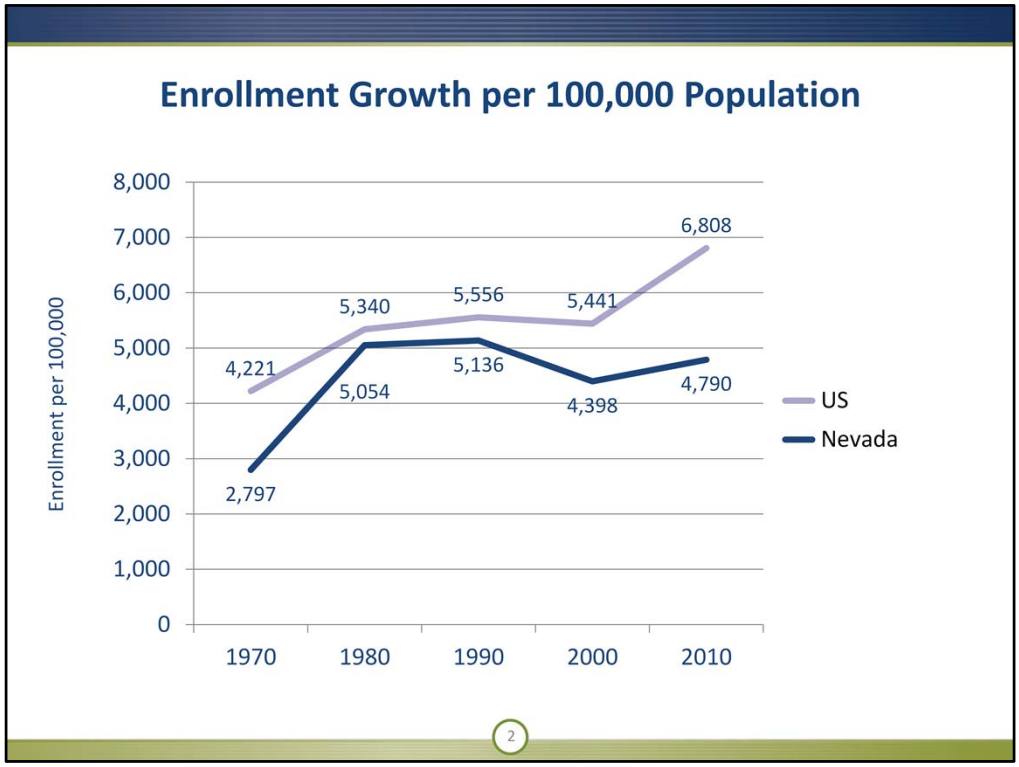
In recent months much attention has been given to different structures of higher education, some of which might prove helpful. Underlying such discussion is an unstated assumption that the state's investment in higher education is adequate. It is not, but remedying the underinvestment is not as simple as just spending more.

John Valery White
Acting Chancellor

Nevada
System of Higher Education

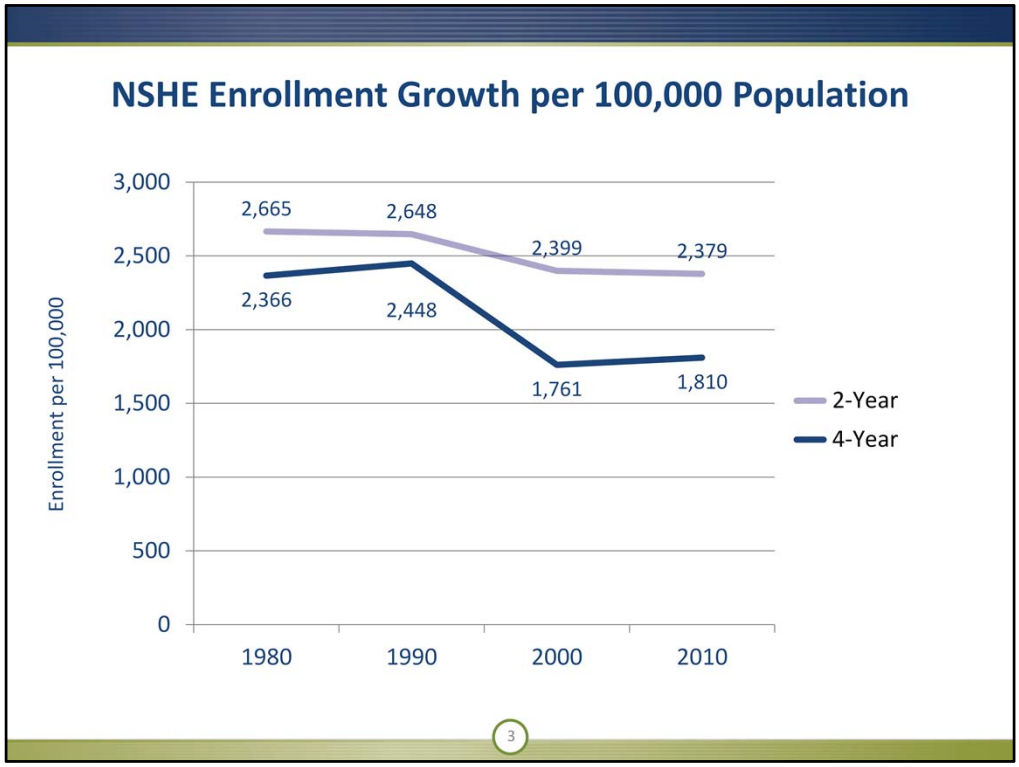
State of Higher Education

December 5, 2016

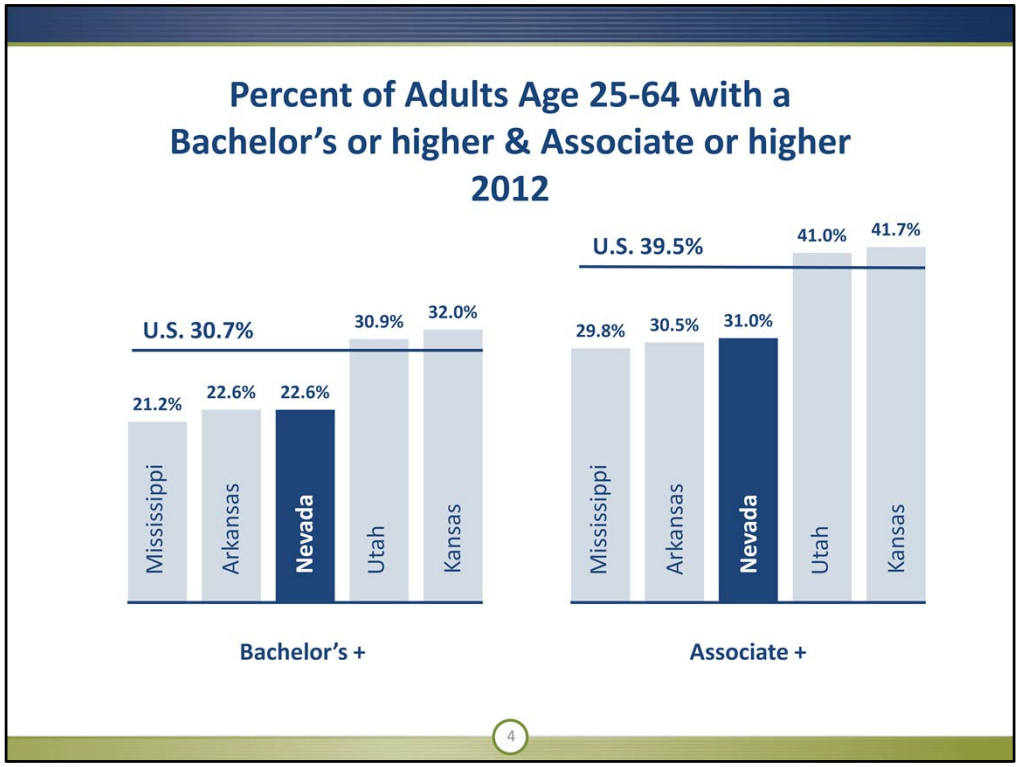


NCES Table 304.10; U.S. Census Bureau

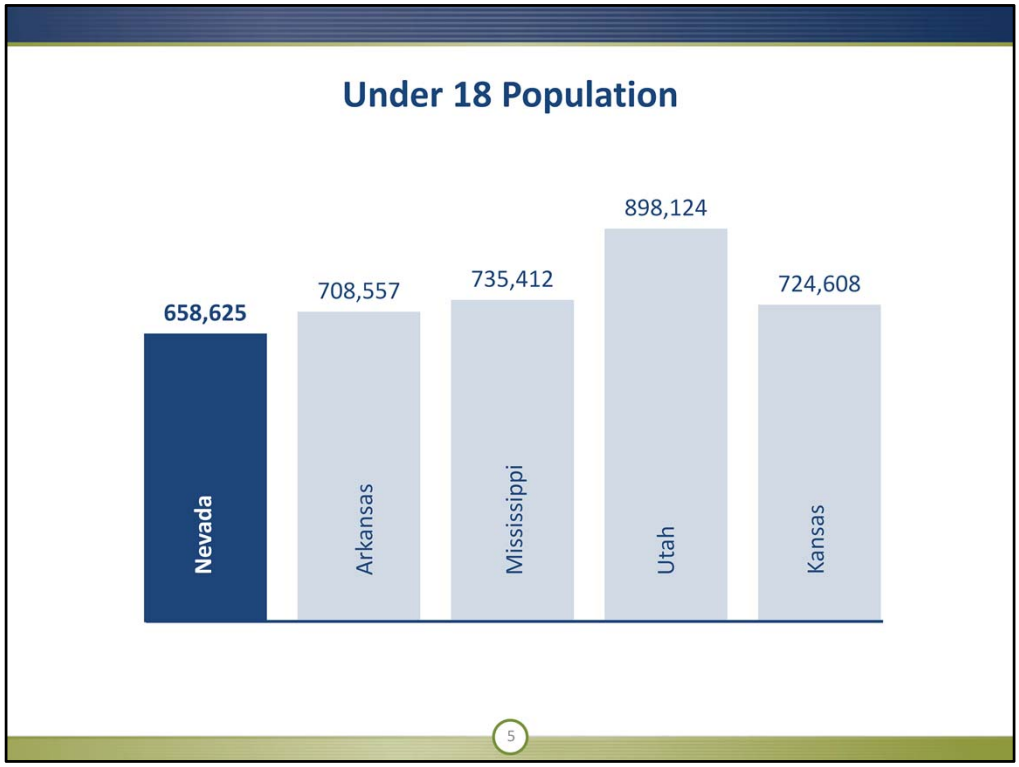
Note, post secondary enrollment is from NCES and is for all degree-granting institutions



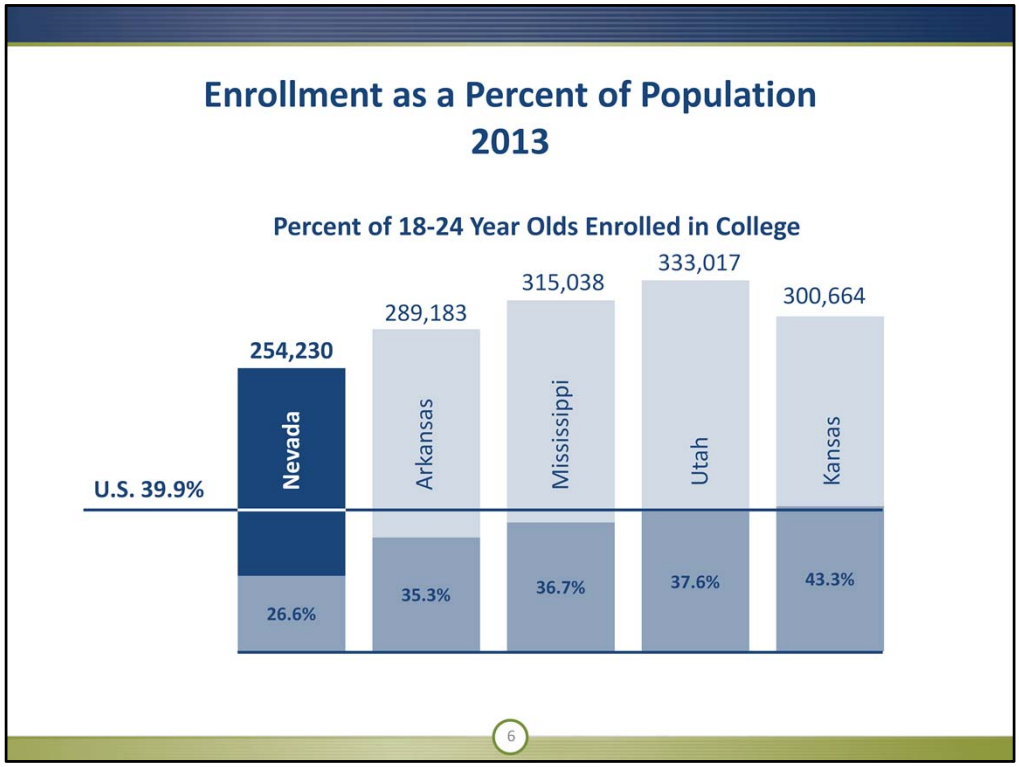
Source: IPEDS, U.S. Census Bureau



Source: NCHEMS: U.S. Census Bureau, 2012 American Community Survey (higheredinfo.org)

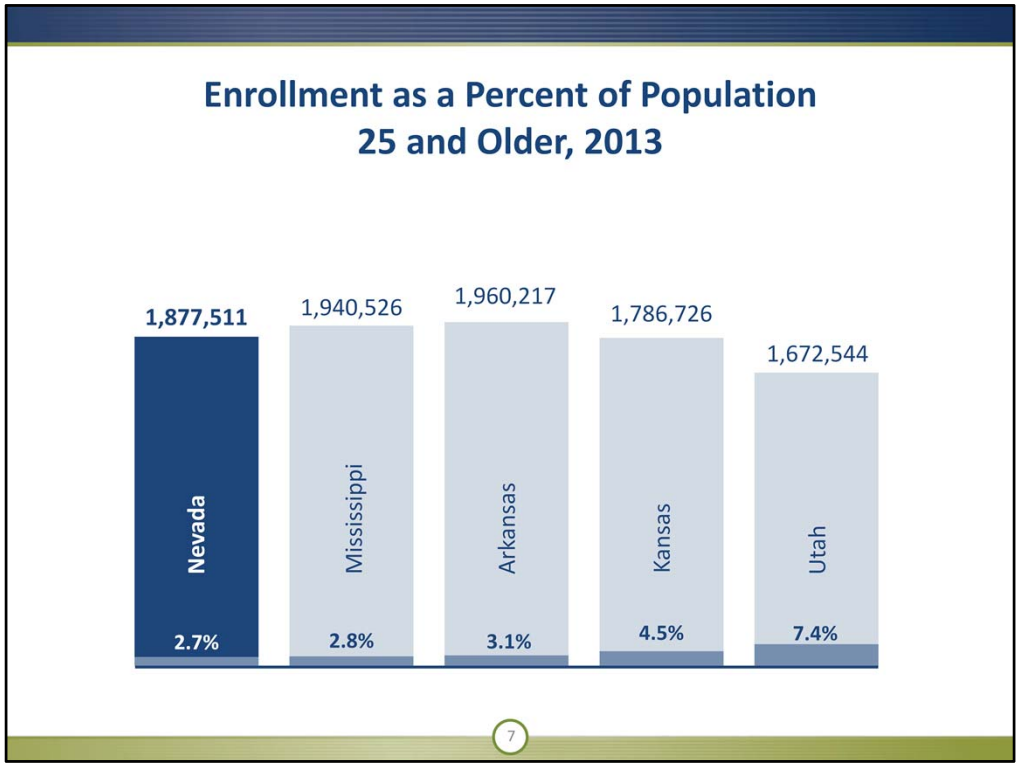


Source: U.S. Census Bureau Population Estimates



Source: IPEDS; U.S. Census Bureau Population Estimates; NCHEMS (higheredinfo.org)

Note: Enrollment includes any postsecondary institution.



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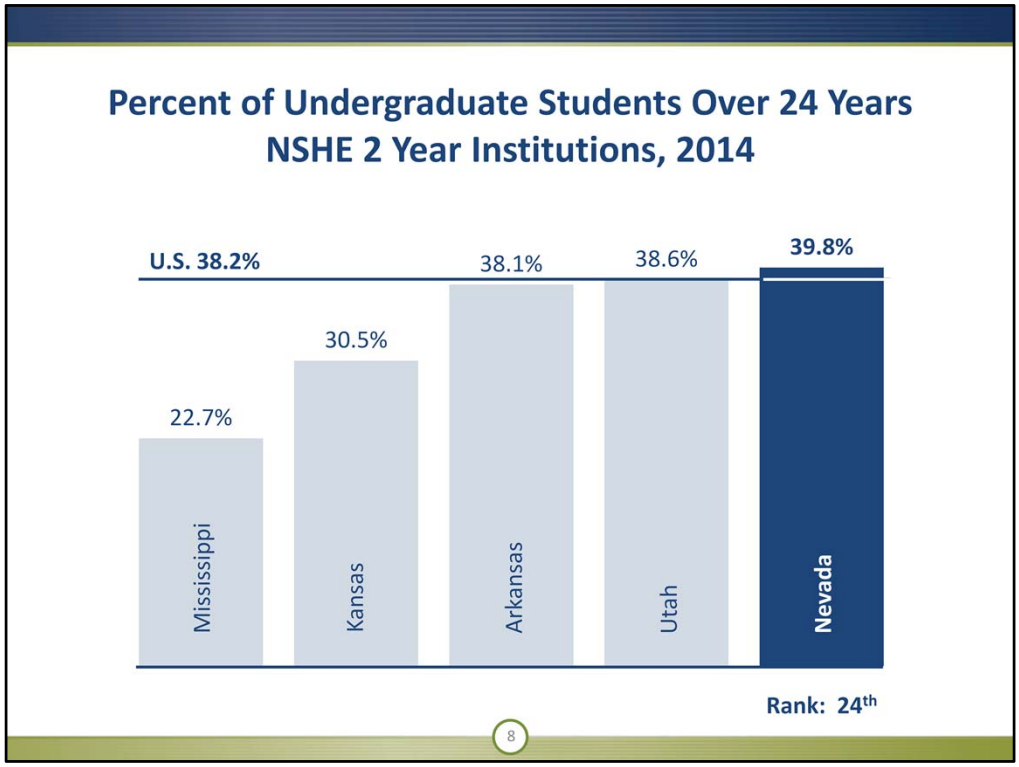

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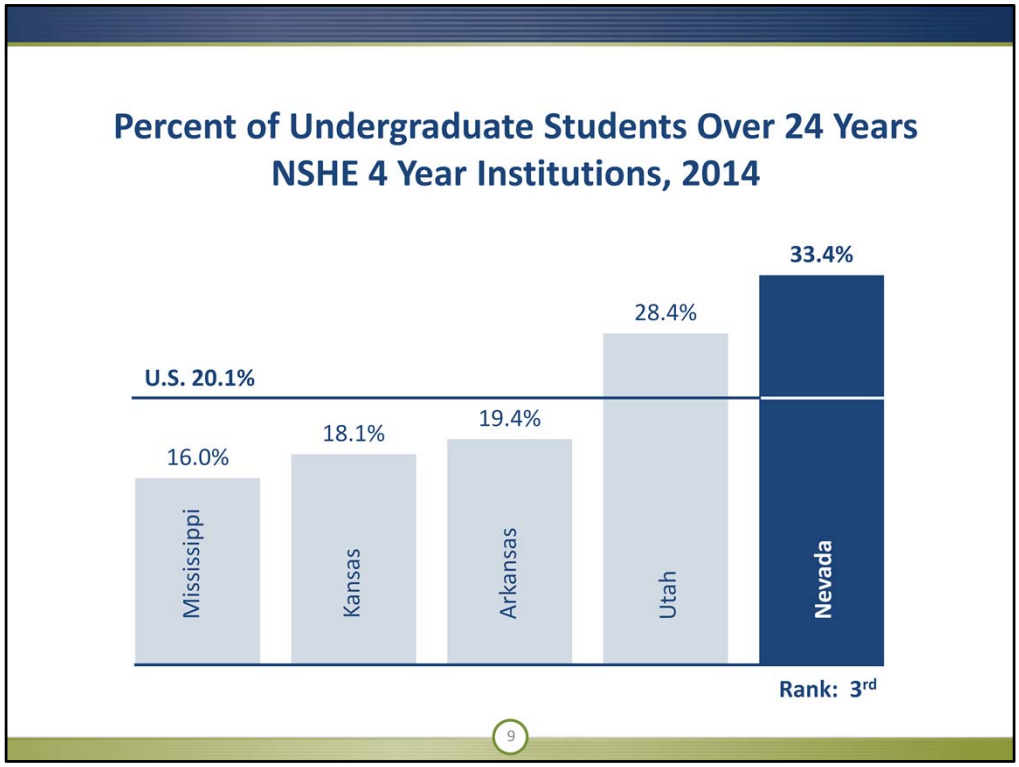

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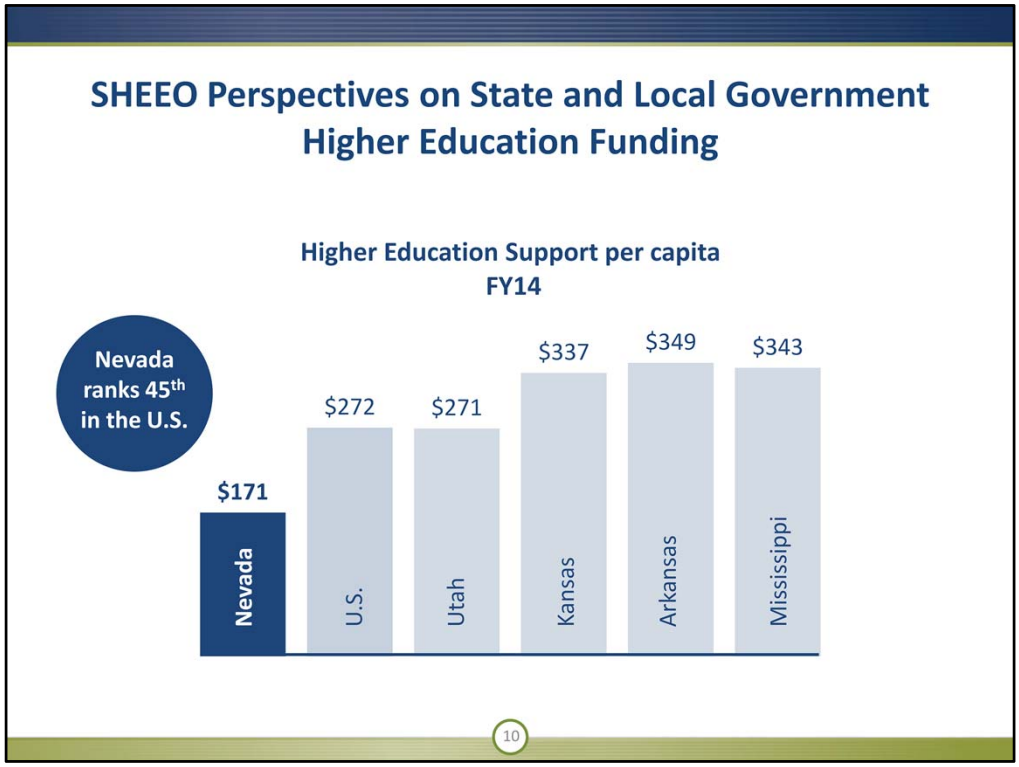

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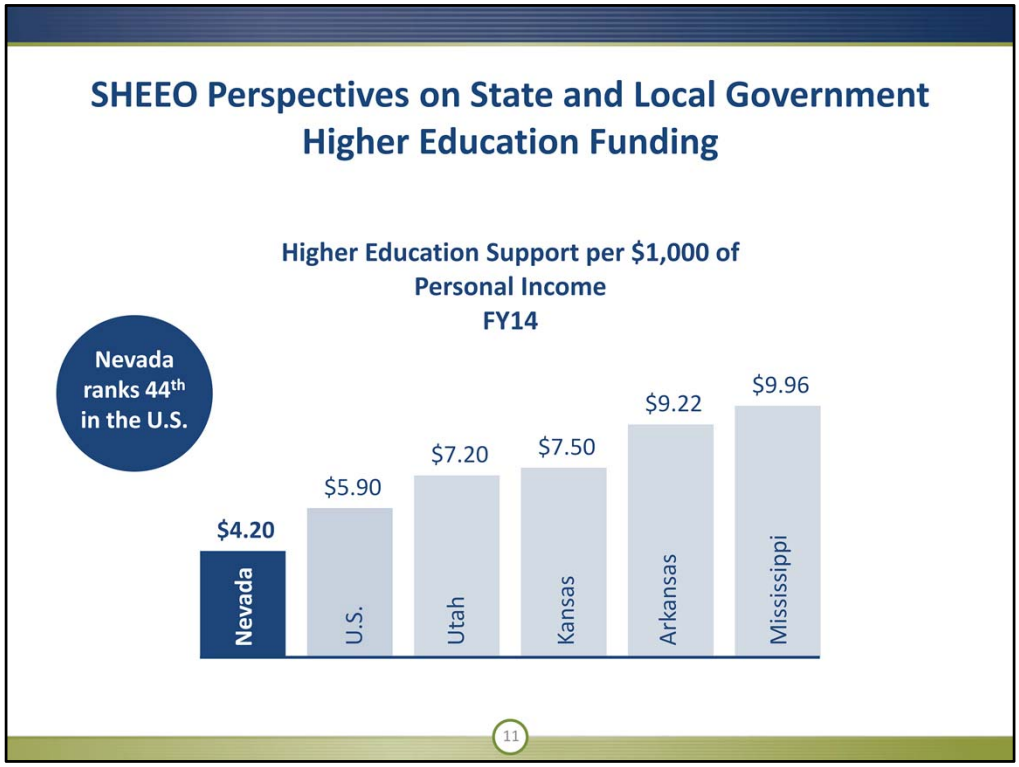

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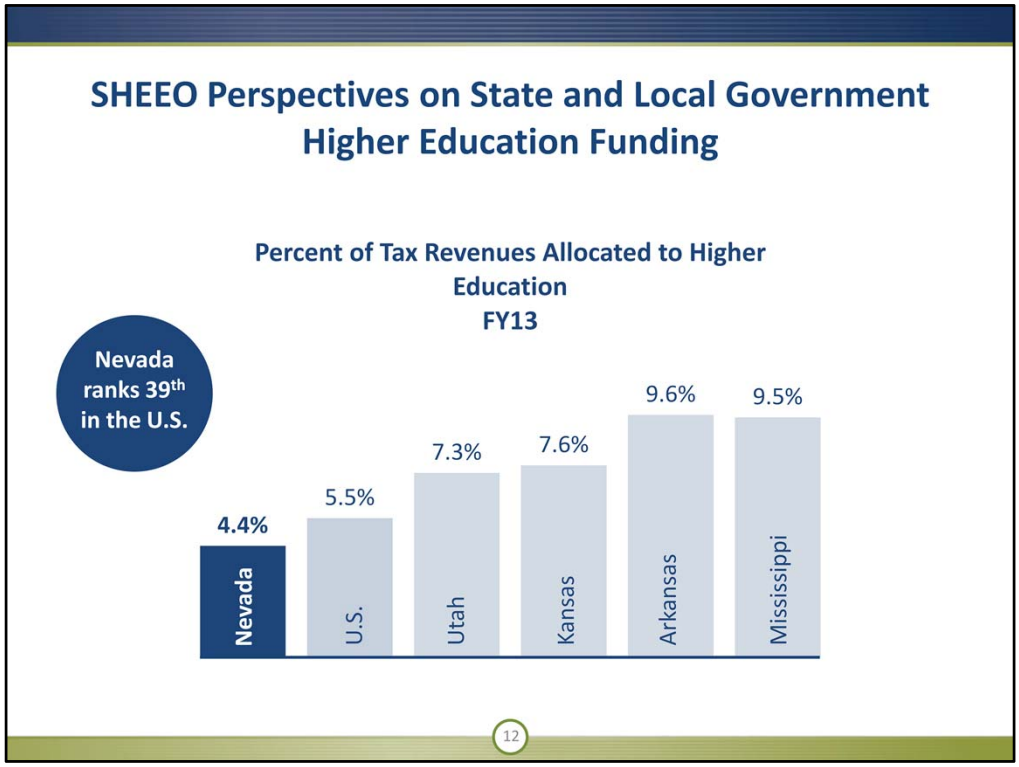

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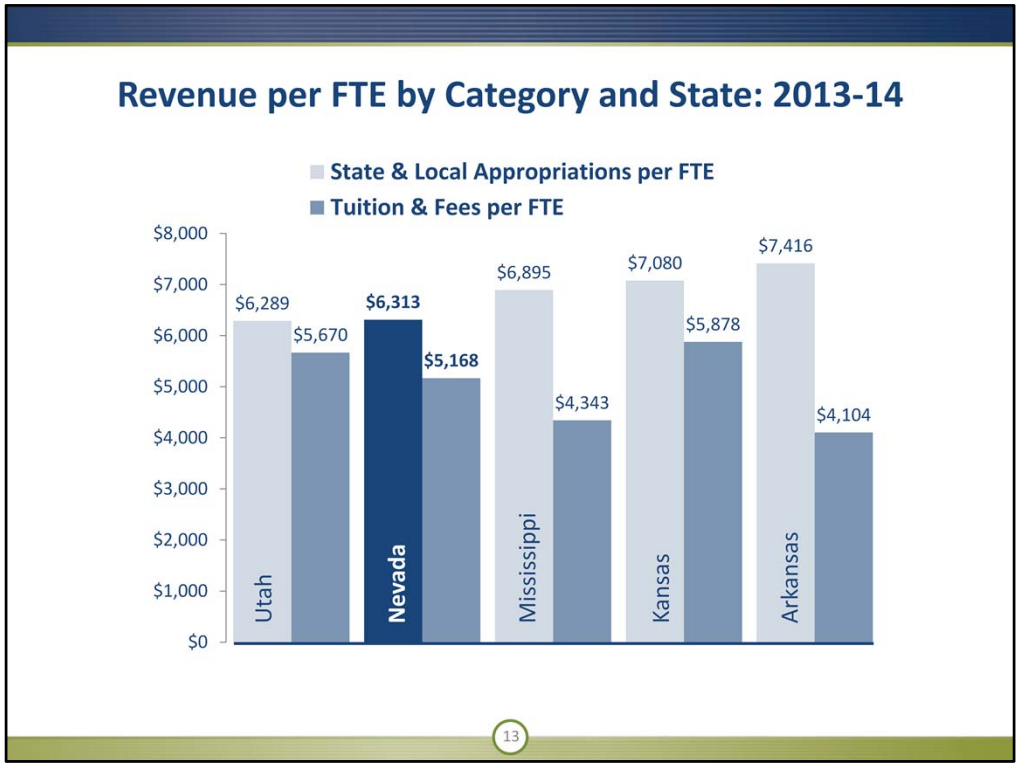

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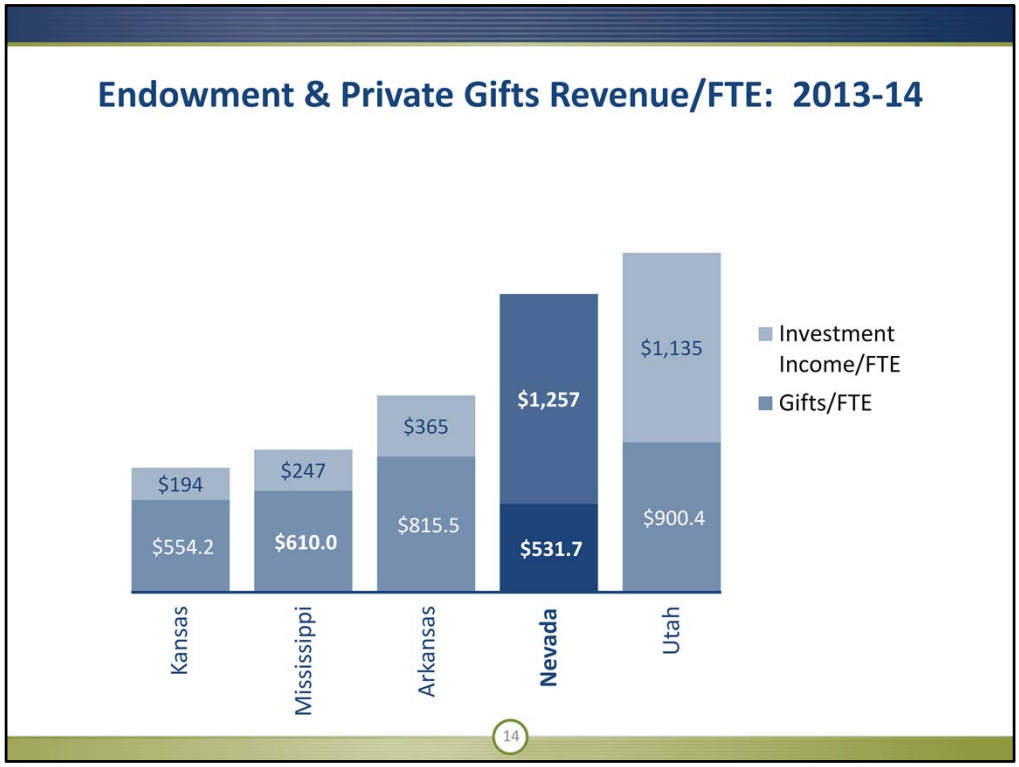
State & Local Appropriations Include: State Appropriations, Local Appropriations, State Nonoperating Grants, Local Nonoperating Grants



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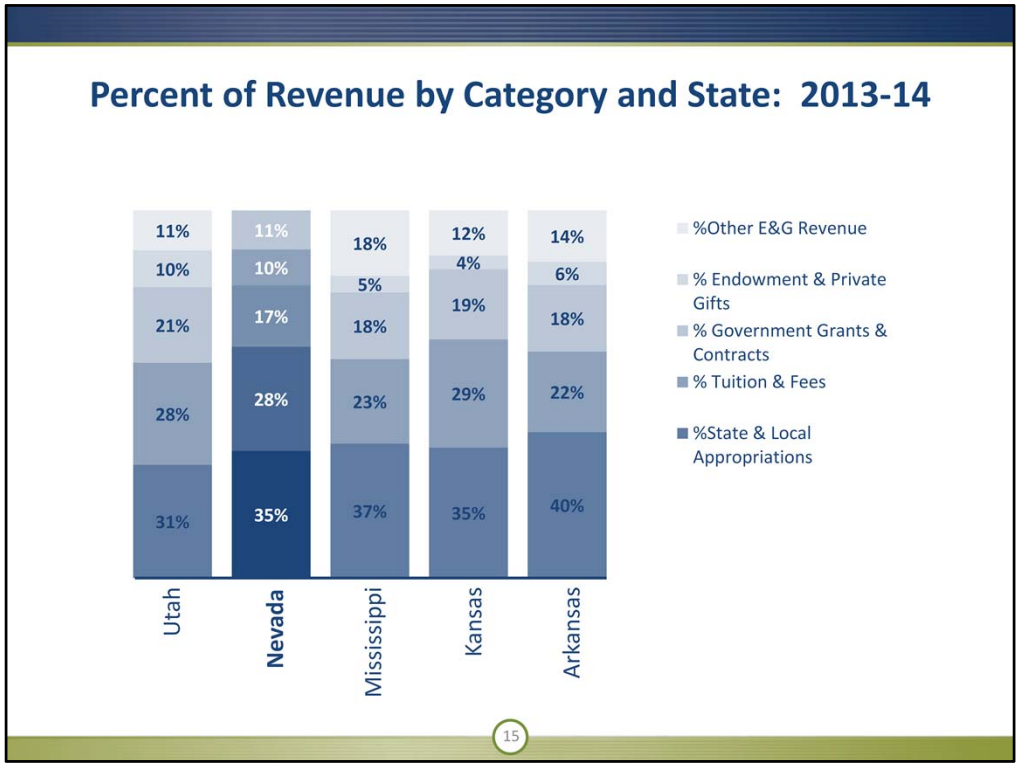

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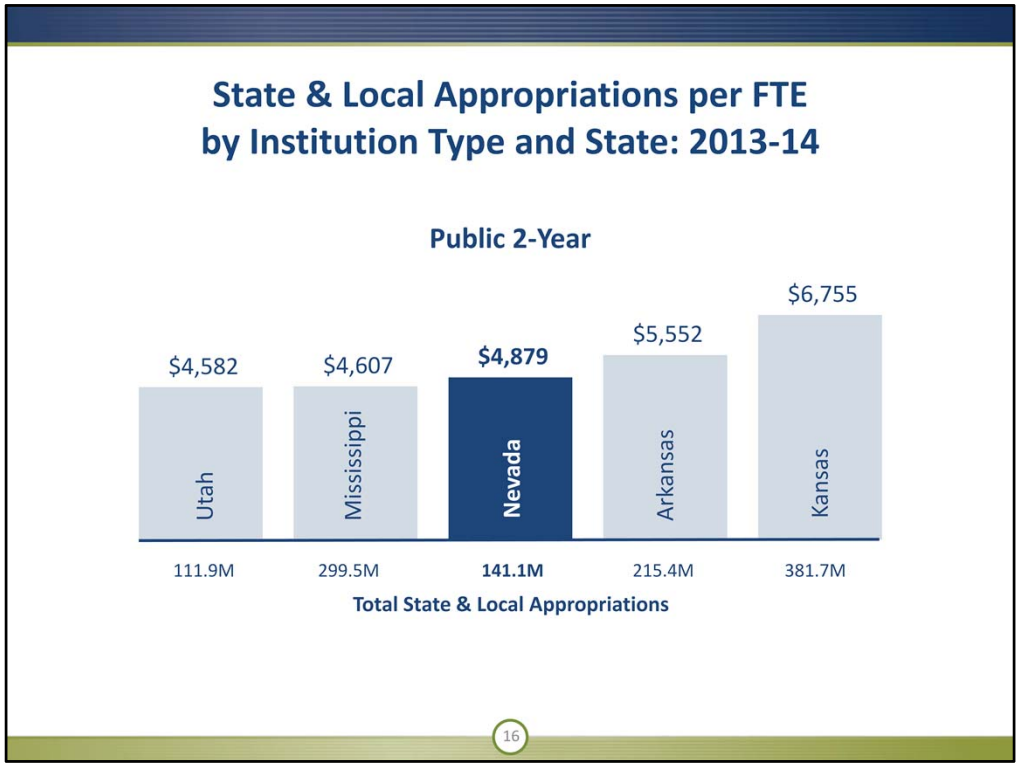
State & Local Appropriations Include: State Appropriations, Local Appropriations, State Nonoperating Grants, Local Nonoperating Grants

Government Grants & Contracts Include: Federal/state/local/private Operating Grants and Contracts

Other E&G Revenue Includes: Other Sources – Operating, Federal Nonoperating Grants, Federal Appropriations



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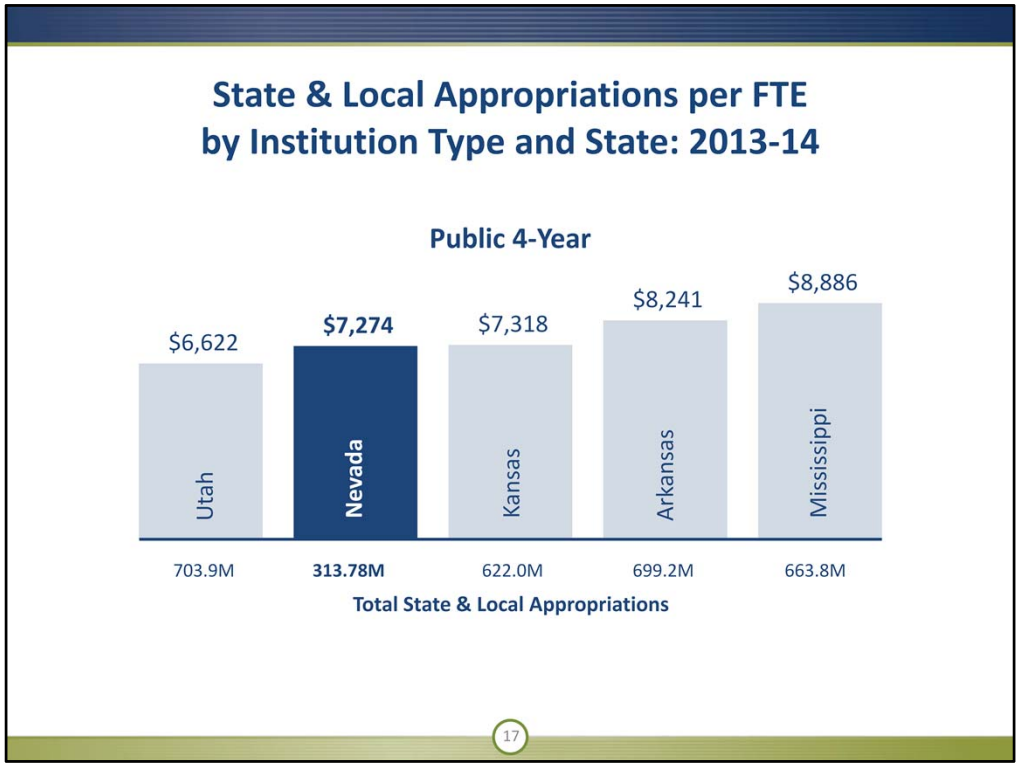

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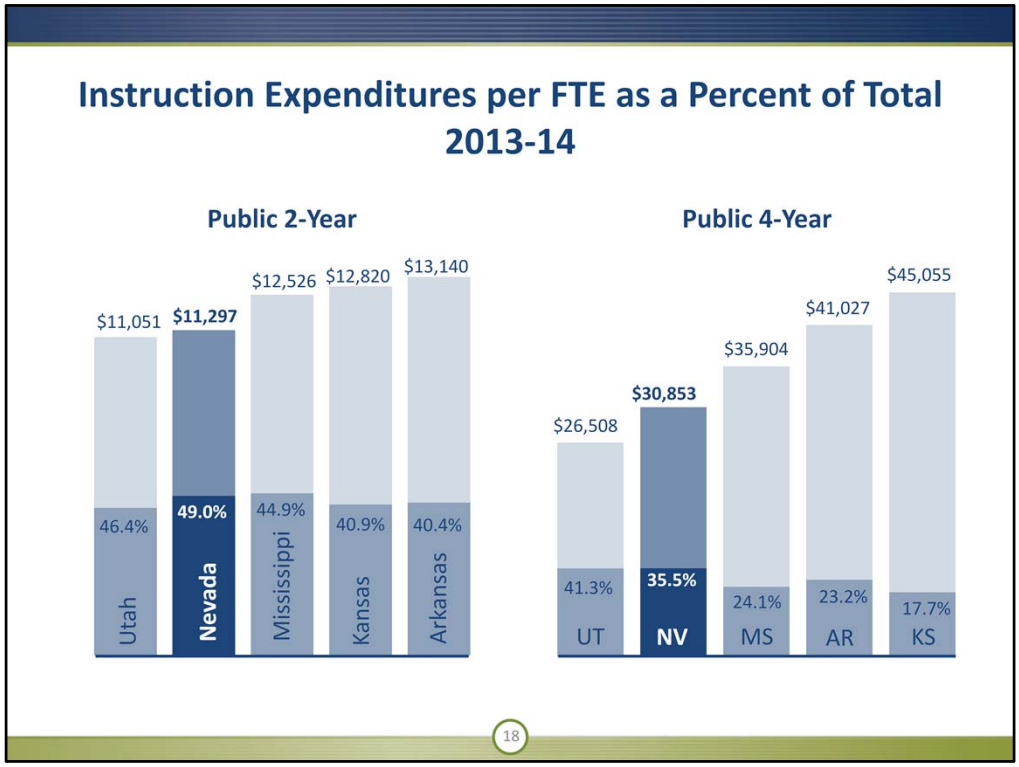

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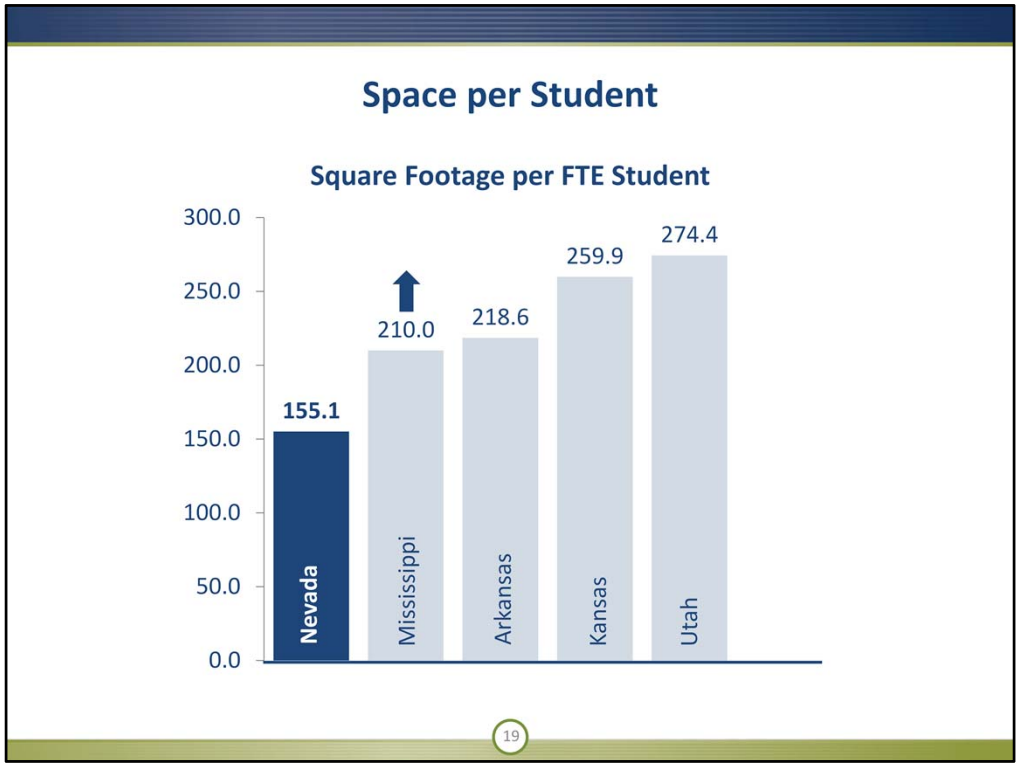


Kansas Board of Regents
FTE and Facility data (both) available for the 6 state universities
total gross area per FTE (Fall 2014) = 259.9/FTE student
raw data: total gross area = 20,815,911; FTE students = 80,099

Utah System of Higher Education
Total gross square footage per FTE student (32,922,819 sq feet; 120,000 FTE students) = 274.4 sq ft/FTE student.

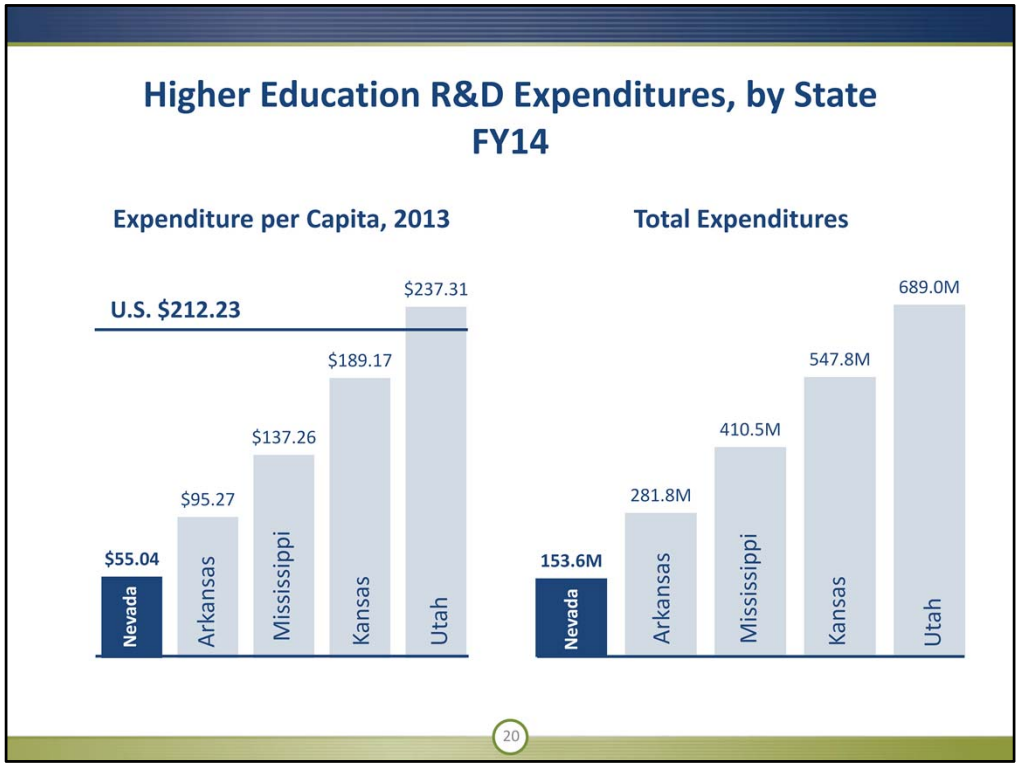
Mississippi Public Universities
According to "Return on Physical Asset" report prepared by "Sightlines"
Table of Education Space per Student (2014) appears to show 210 gsf/student
* Note: per student, not FTE
raw data not available; square footage per student estimated based on bar graph included in noted presentation

Arkansas Department of Higher Education
E &G (education and general programs) sq feet per annual FTE (AY 2014) = 218.6 sq ft/FTE
raw data: E&G square footage = 26,697,761; annual FTE students at 4 year university = 83,114 plus 2 year colleges = 39,033

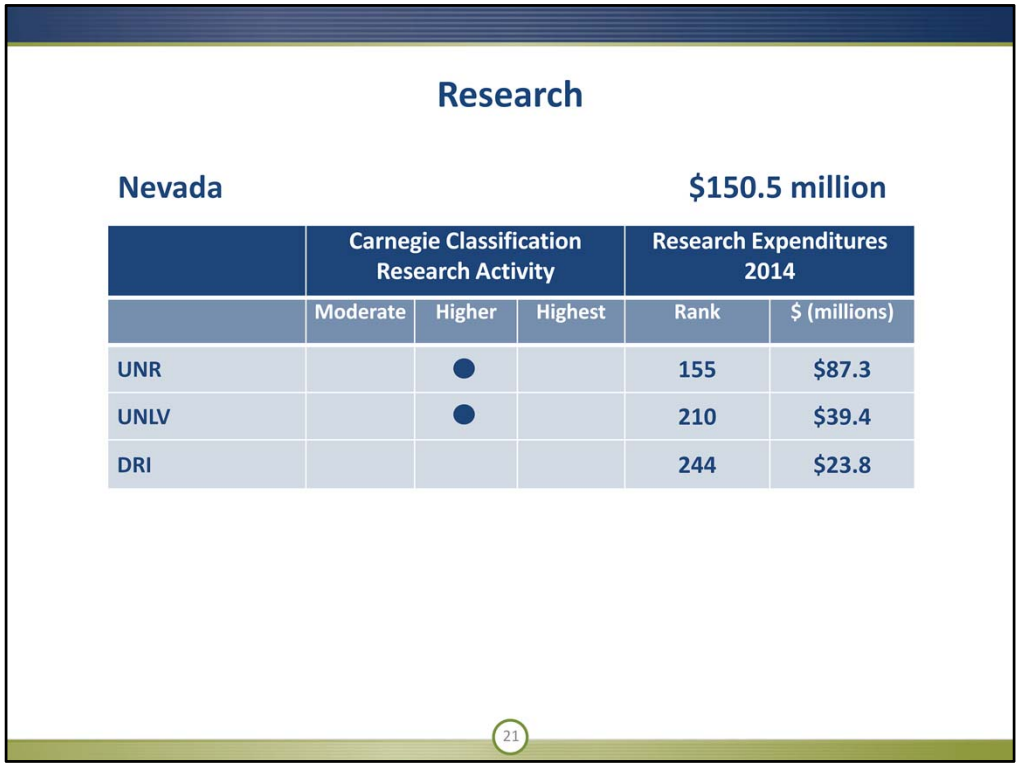
Nevada
According to the 2015/2016 Space Study:Classroom, lab, research space per FTE student =

47.6. Total owned and leased square footage is **10,966,615**
Total Square footage per FTE student = 155.1

Data from 2015-2016 Space Study:
Total owned and leased space for Classroom, lab, research, and study facilities = 3,367,114 square feet
Total owned and leased space for Office, conference room, athletics, general use, support facilities, health care, residential, all other = 7,599,502 square feet



Source: NSF; U.S. Census Bureau Population Estimates



Sources: https://ncsesdata.nsf.gov/profiles/site?method=rankingBySource&ds=herd
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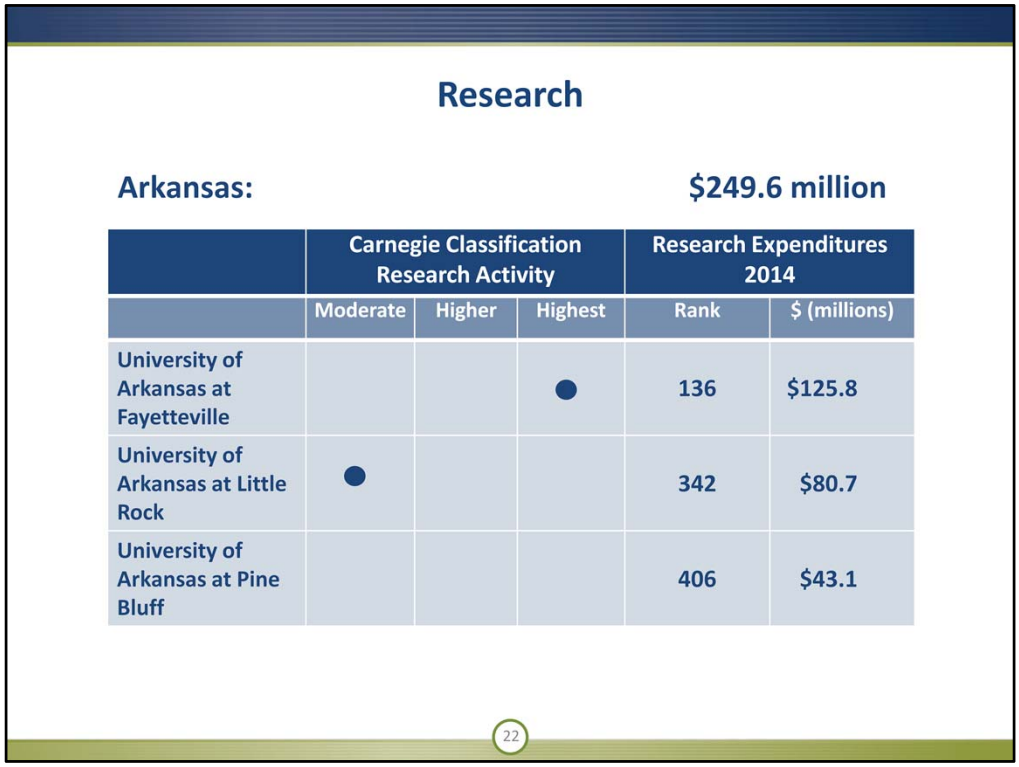

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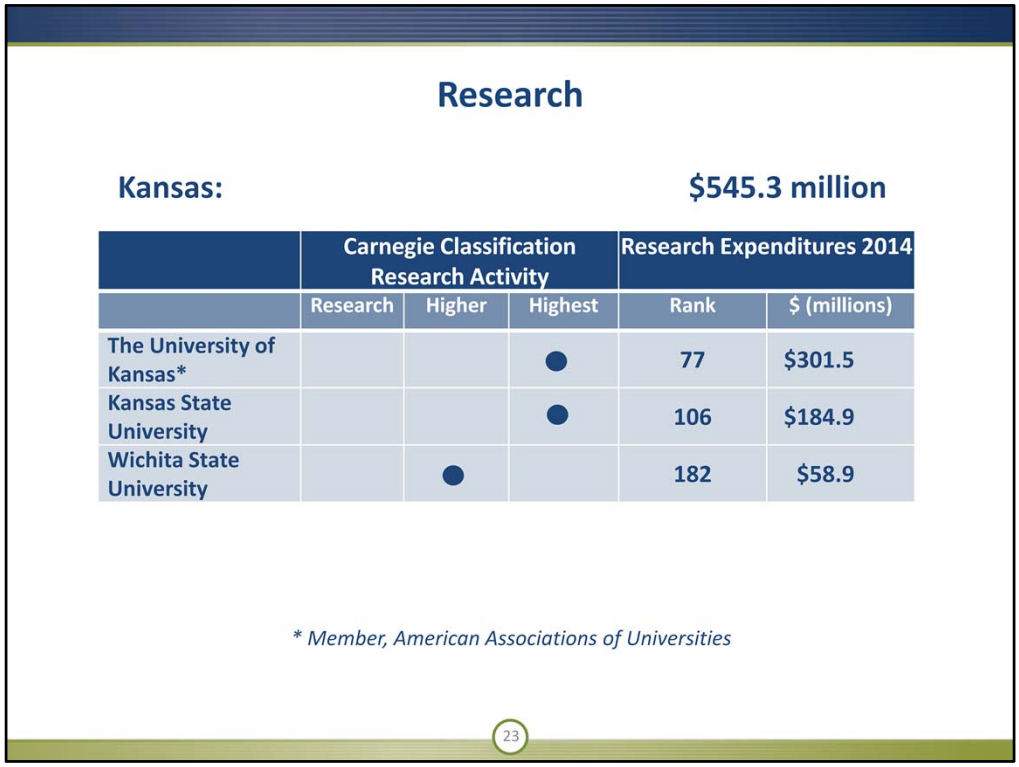

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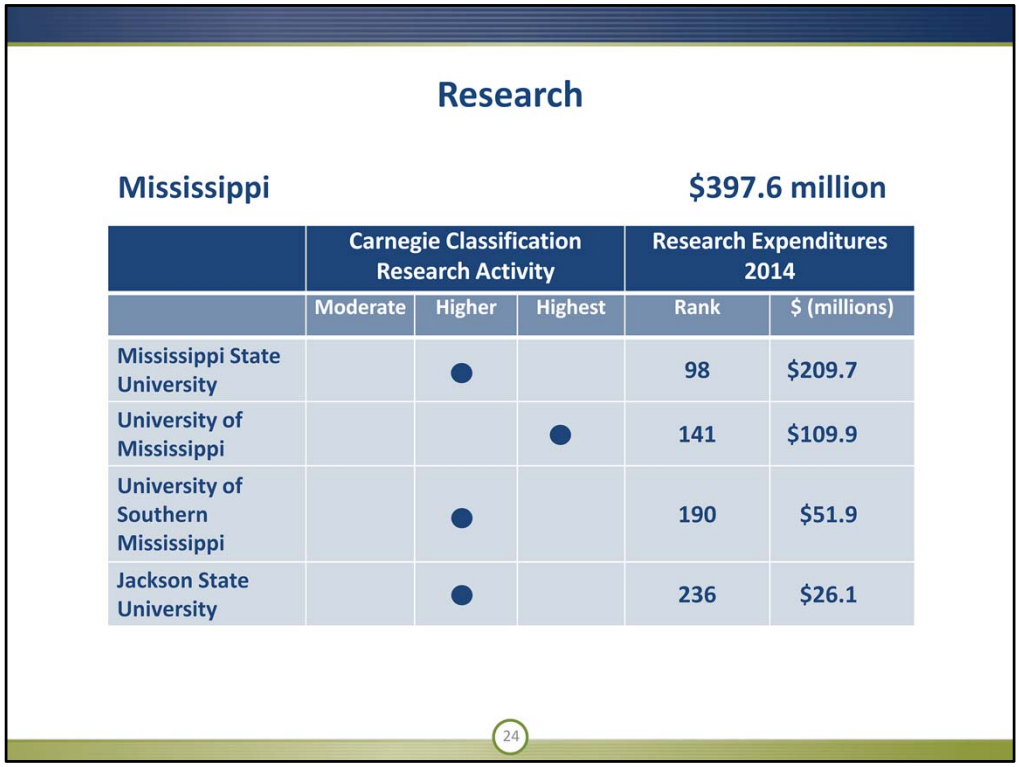

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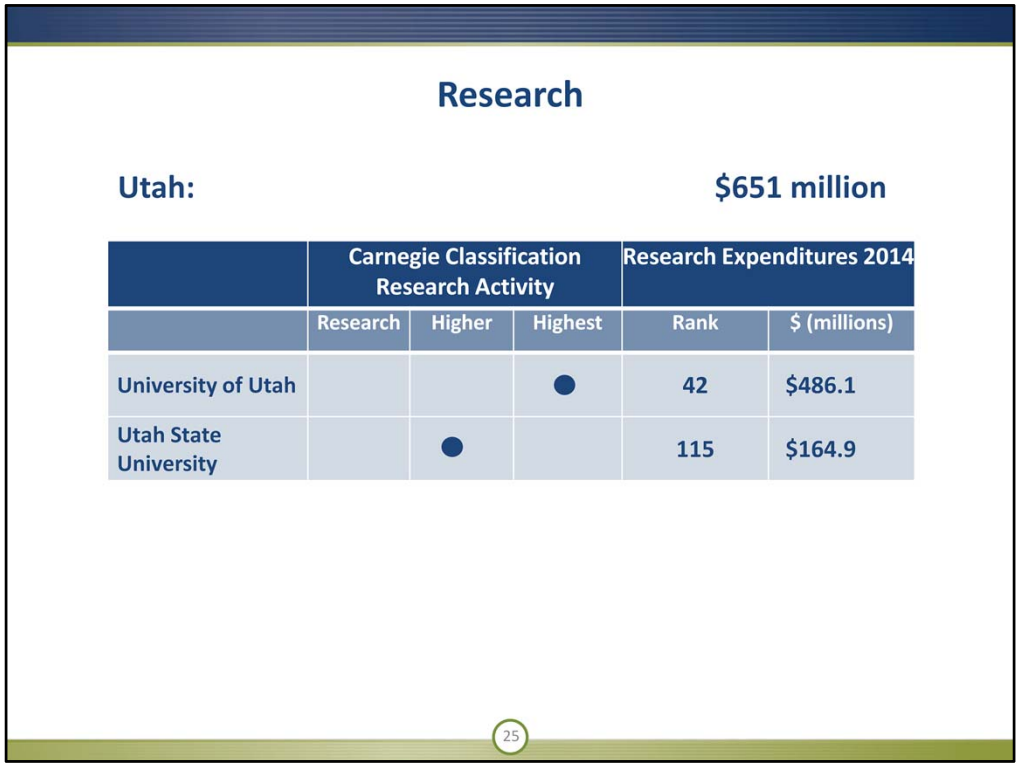

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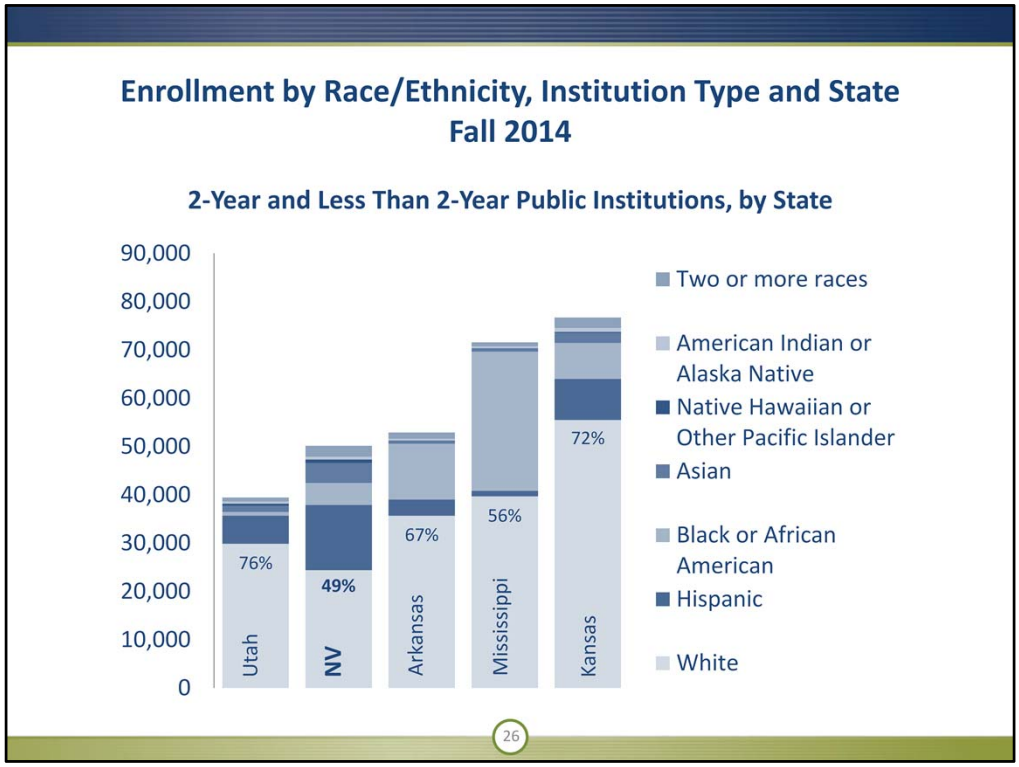

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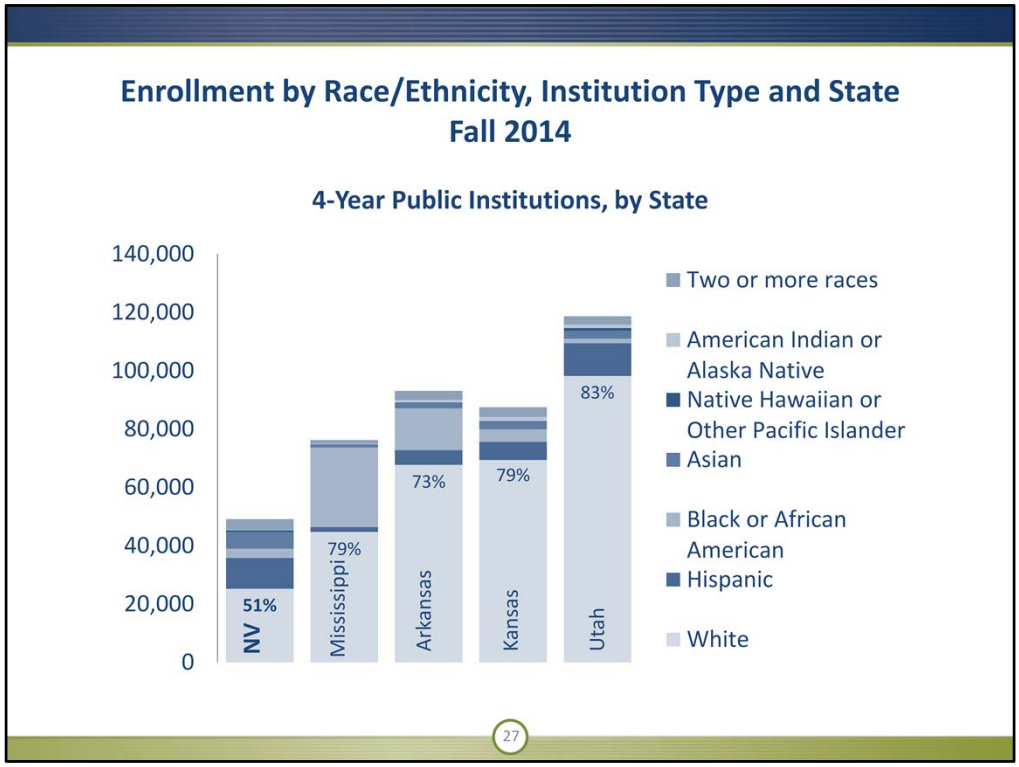

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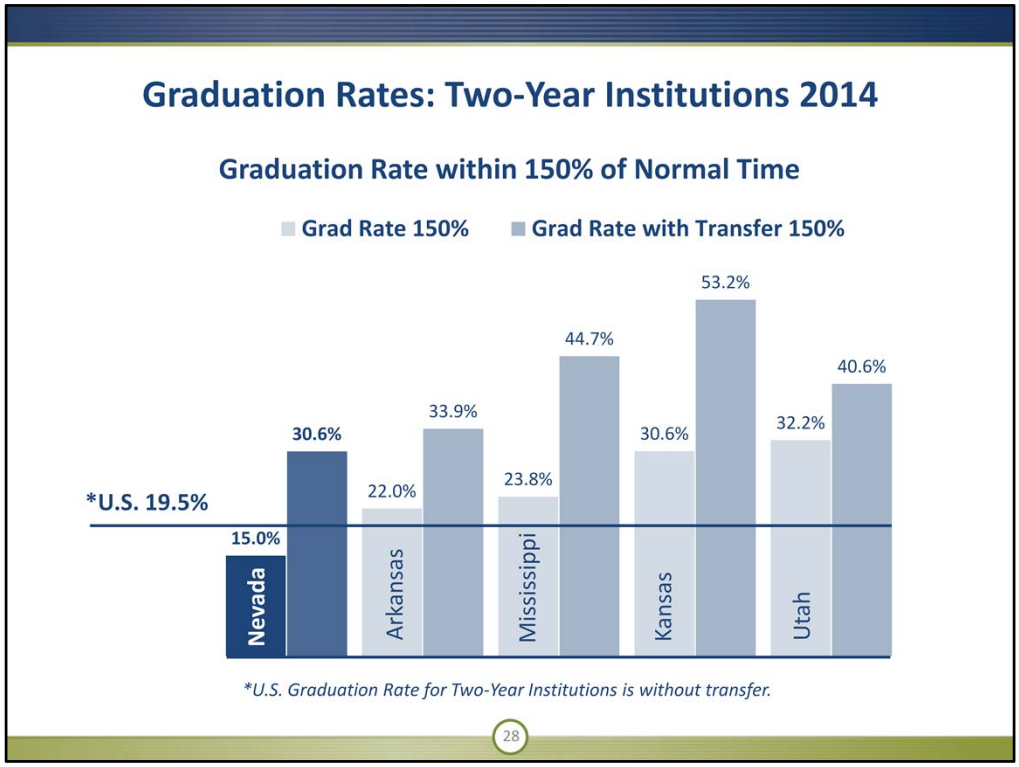
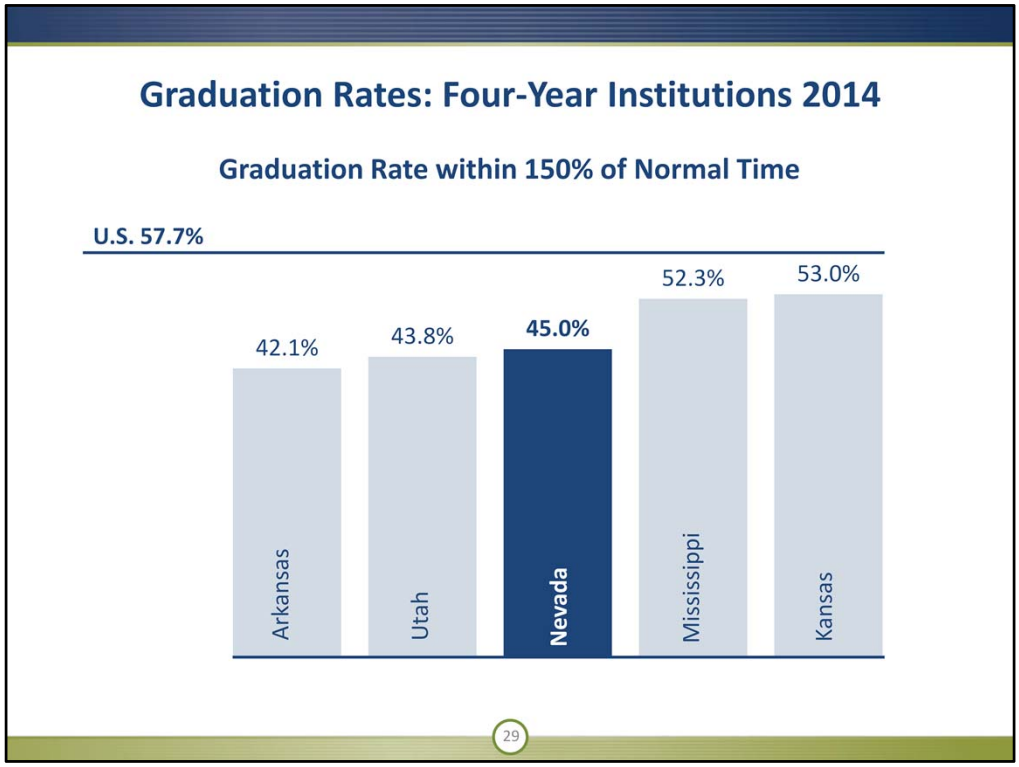


Source: IPEDS

Graduation rate is the percentage of students entering the institutions as first-time, full-time, degree-seeking freshmen who complete their program within 150% of normal time (6 years for bachelor's degrees, 3 years for associate's degrees, 1.5 years for certificates). Graduation rates with transfer includes the standard graduation rate plus student who transferred to any other postsecondary institution nationwide.



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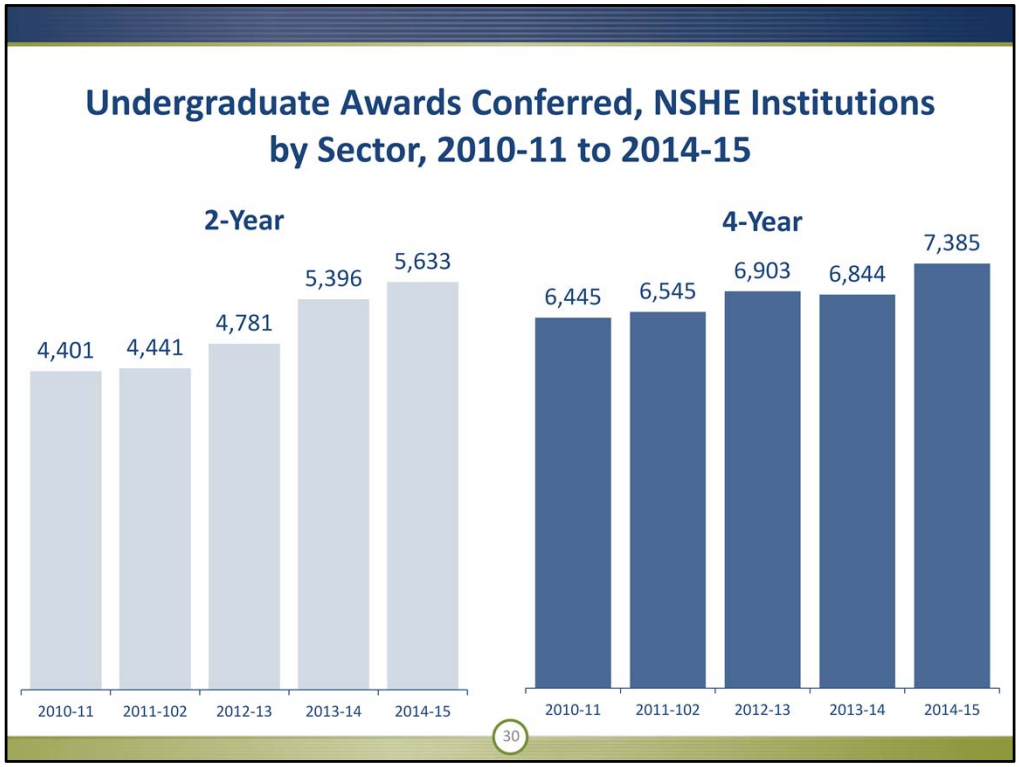
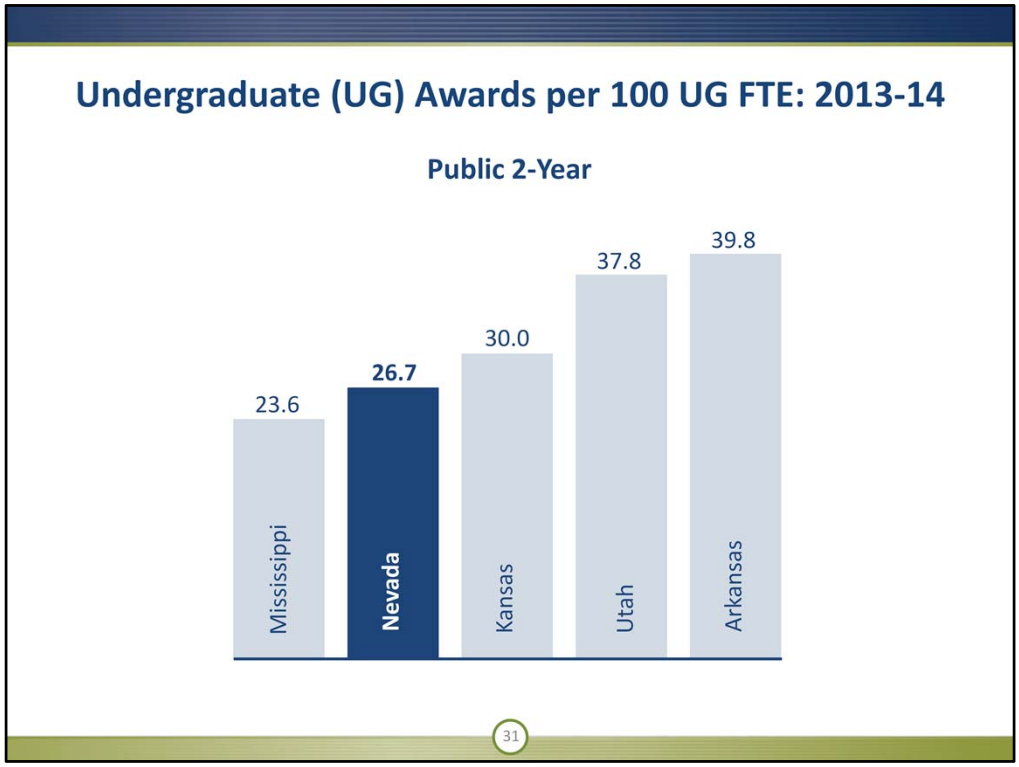
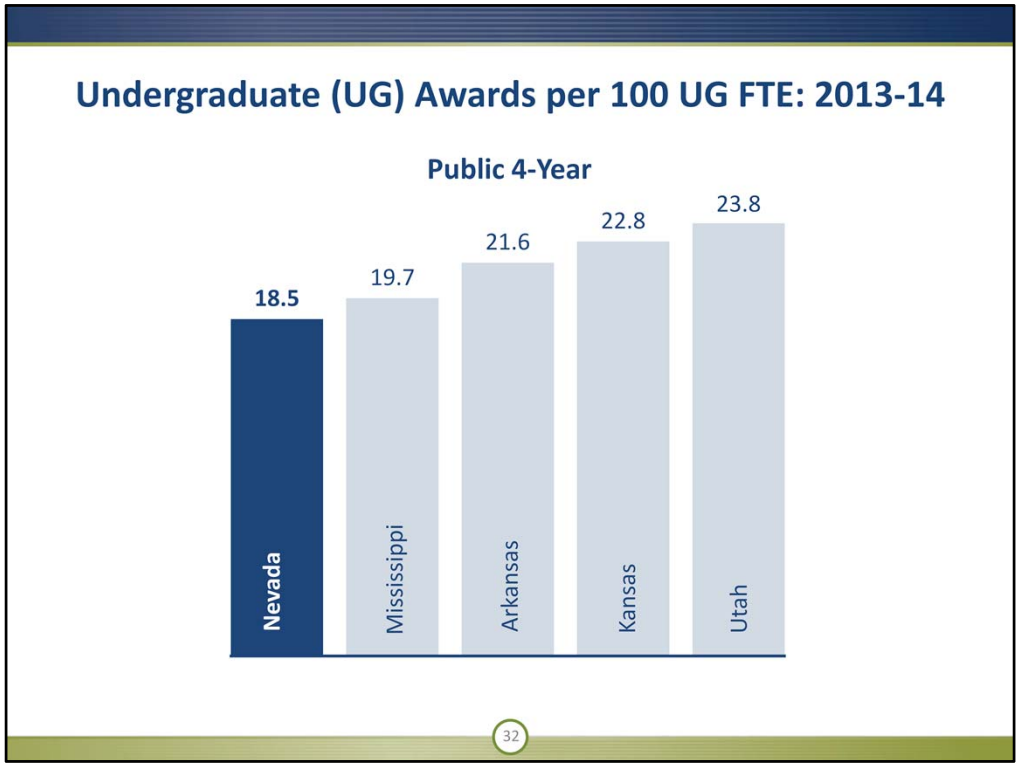


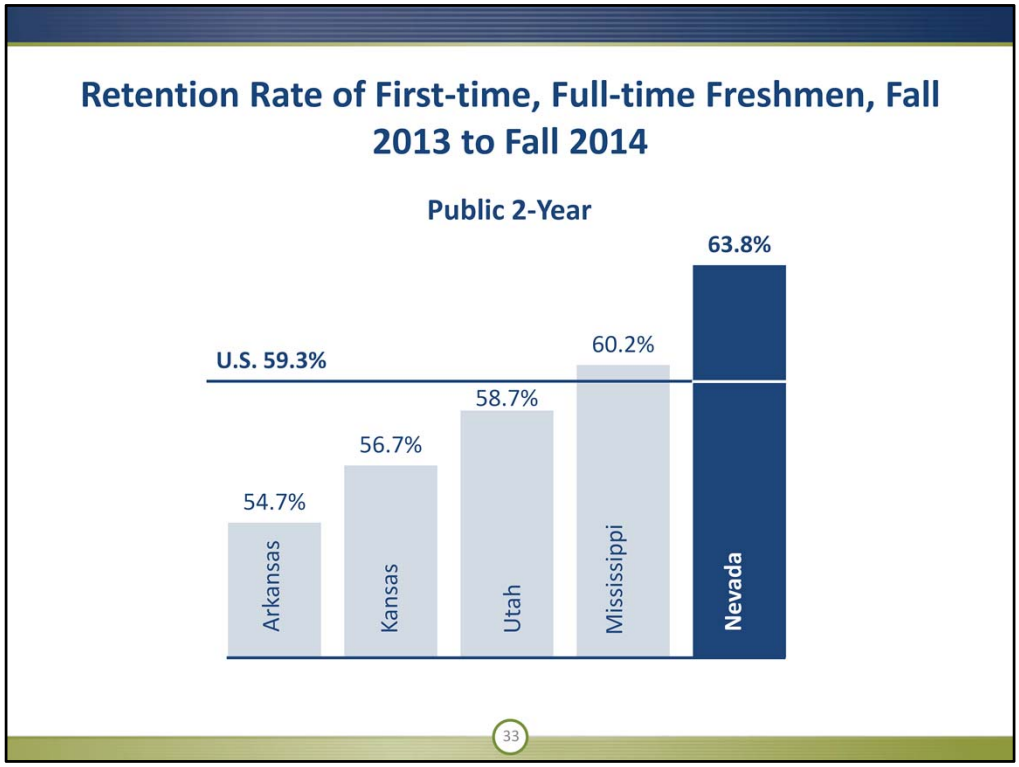
Source: IPEDS
Excludes certificates of less than one year.



Source: IPEDS



Source: IPEDS



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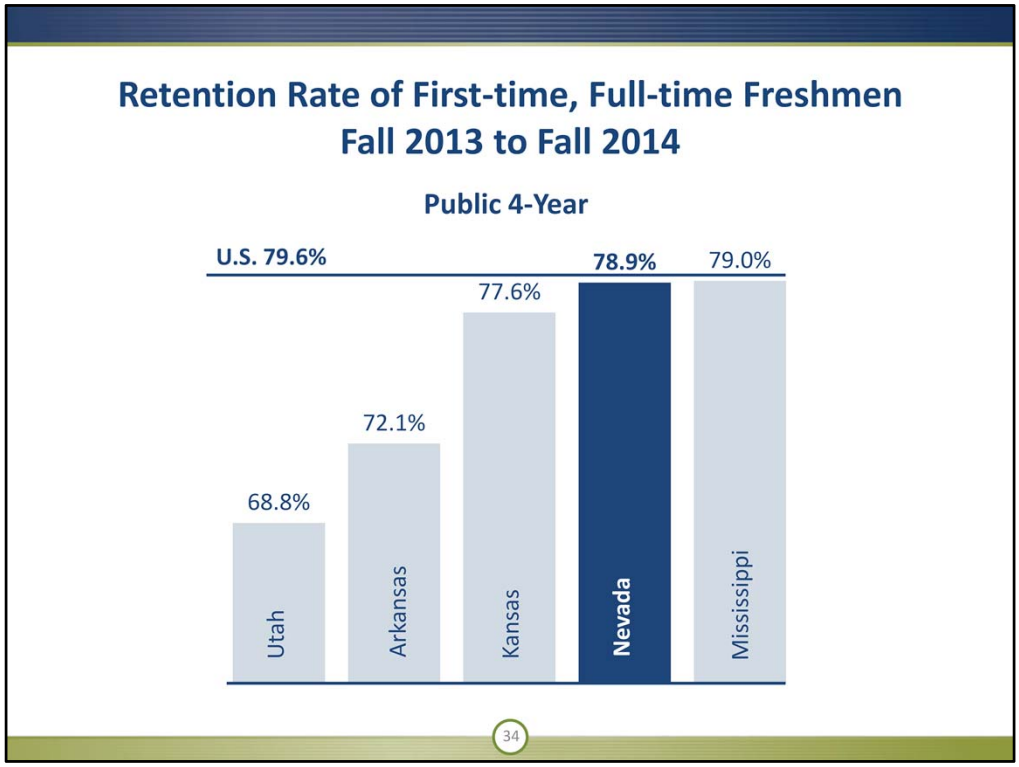
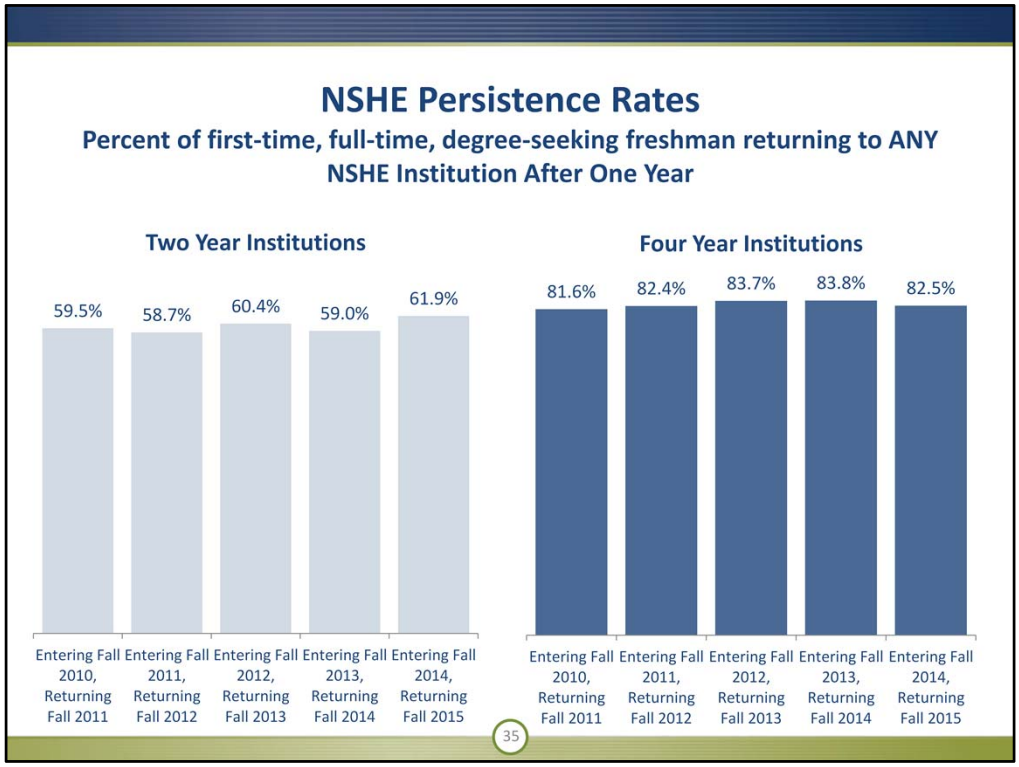
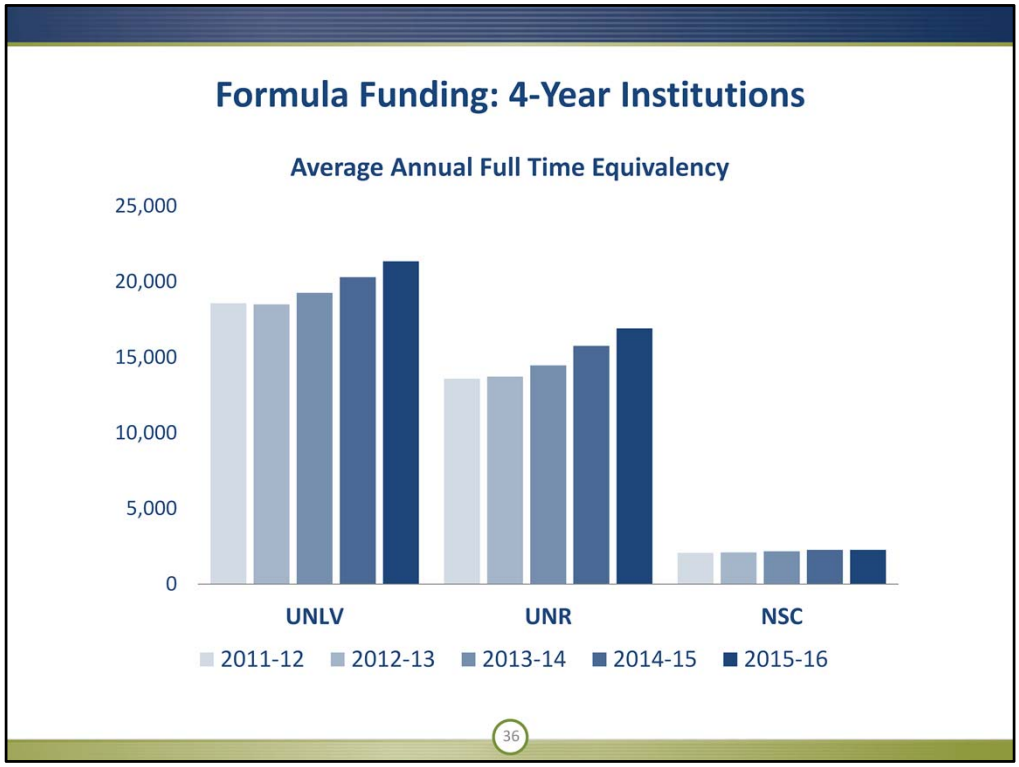


Source: IPEDS

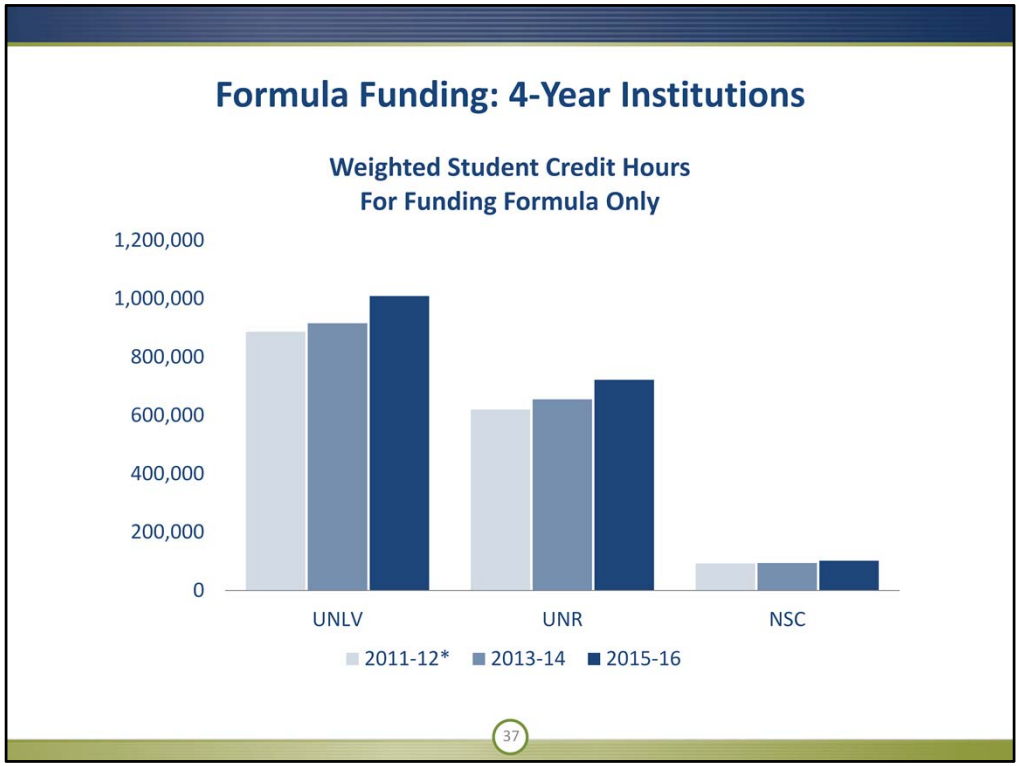


Source: NSHE Data Warehouse



Source: NSHE

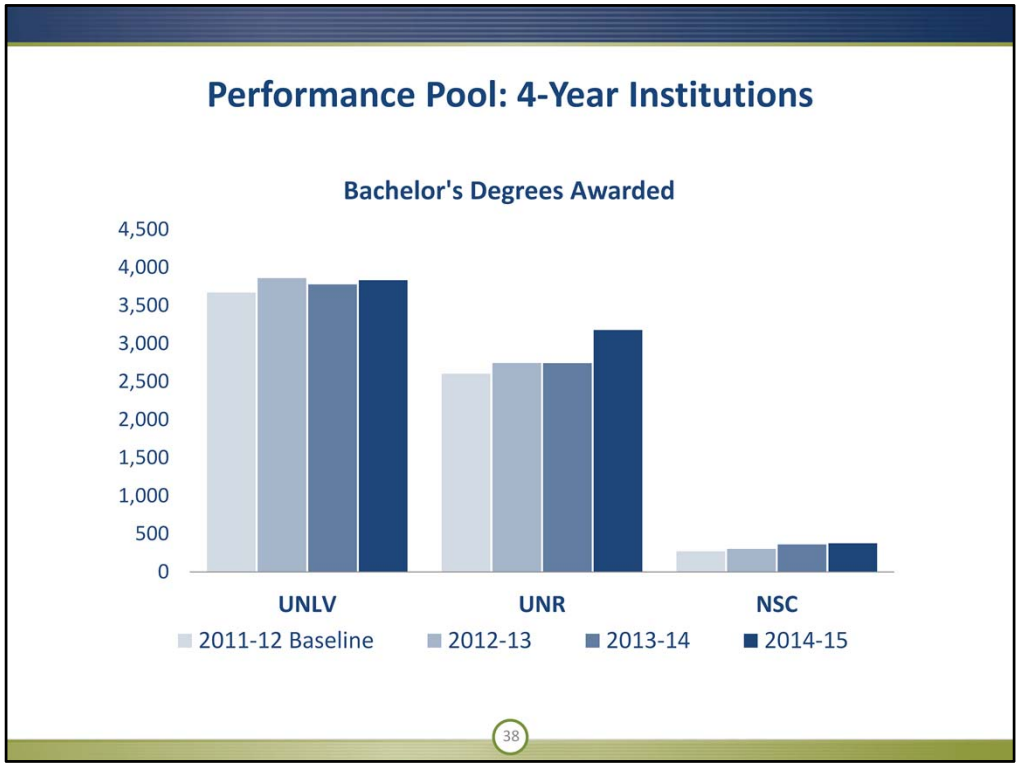
Student credit hours (SCH) generated from student enrollments in courses qualified for state funding are used to calculate the weighted student credit hours (WSCH) for the funding formula. The AAFTE includes enrollments in ALL courses that qualify for state funding.



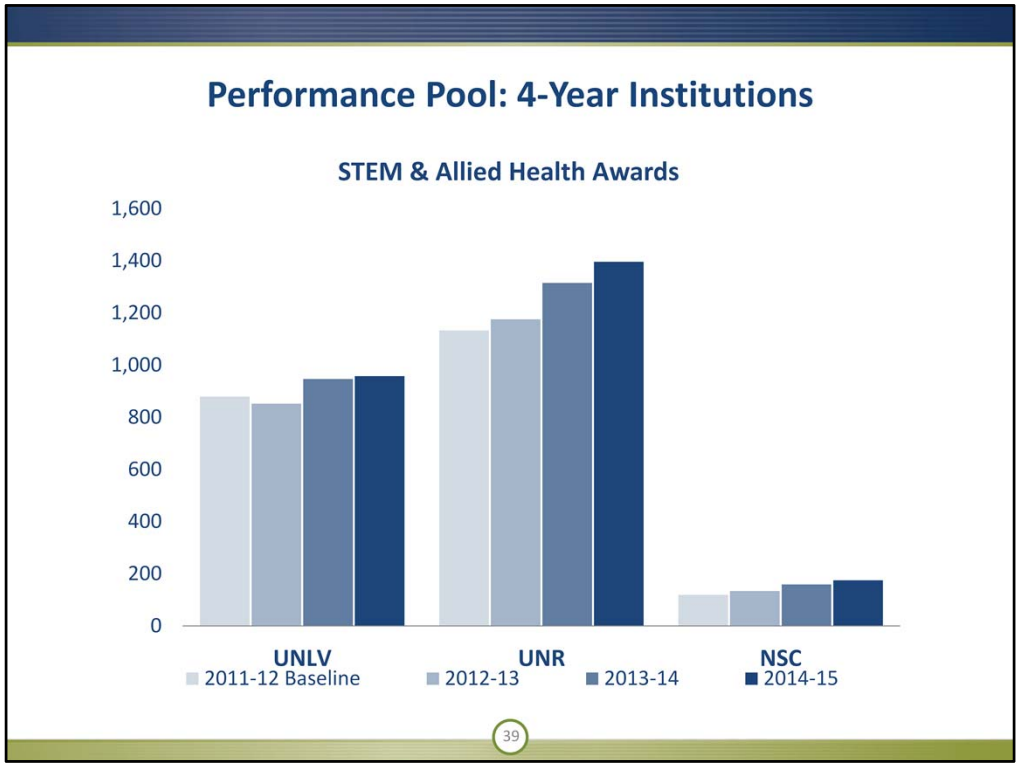
Source: NSHE

Weighted student credit hours (WSCH) are derived from the SCH generated by enrollments in courses qualified for state funding. WSCH excludes non-resident student enrollments, enrollments that resulted in a grade of "W" or no assigned grade, and "F" grades for non-attendance.

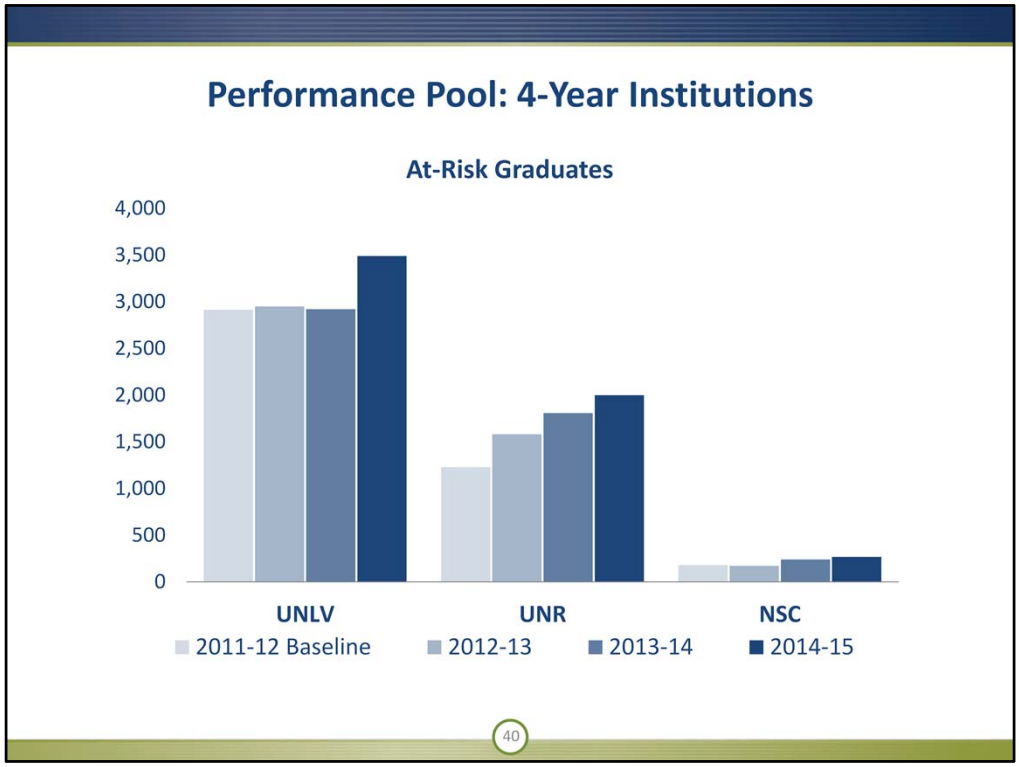
*In 2011-12, "F" grades for non-attendance were not excluded.



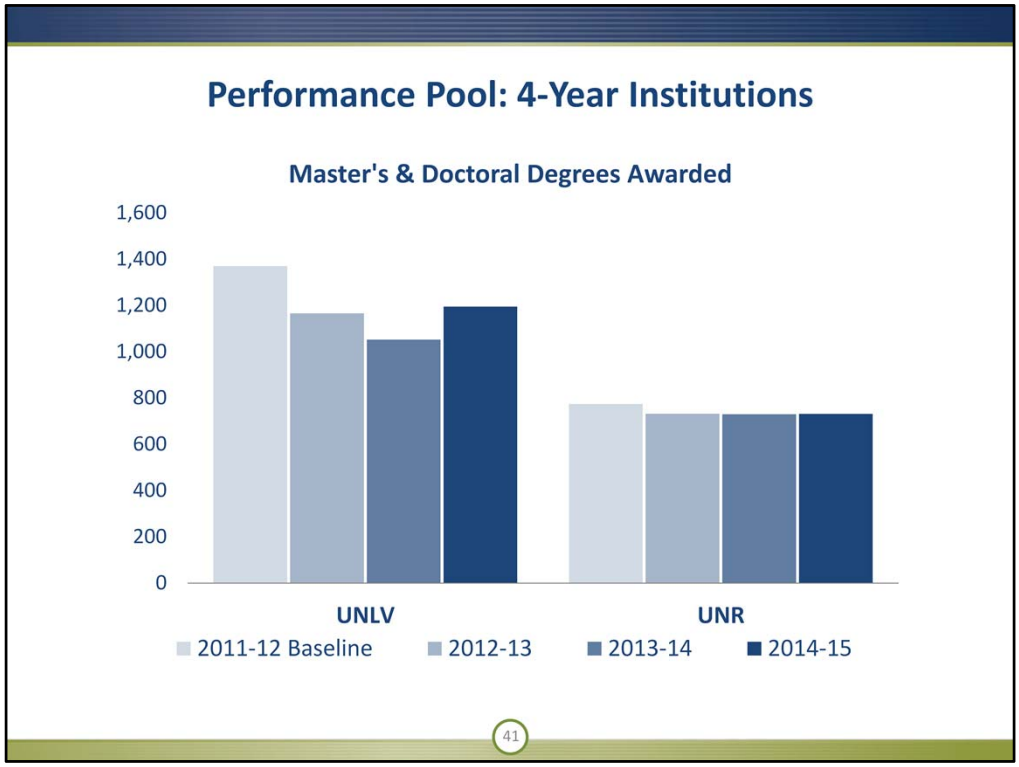
Source: IPEDS



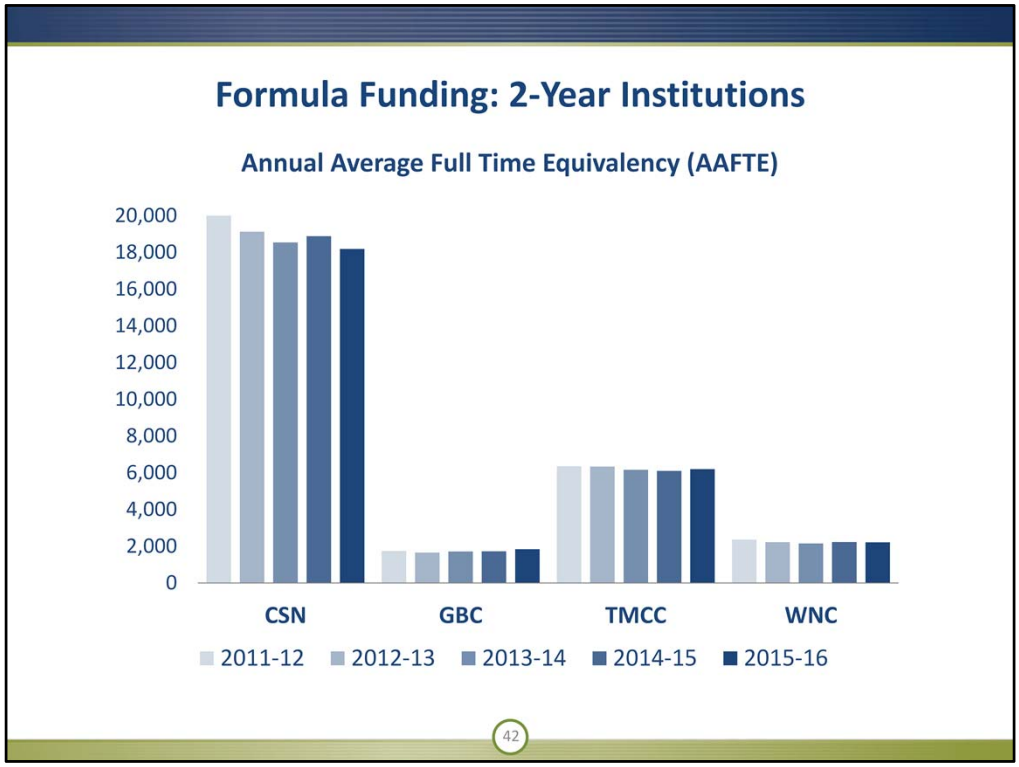
Source: IPEDS



Source: IPEDS and institutionally identified Pell recipients



Source: IPEDS



Source: NSHE

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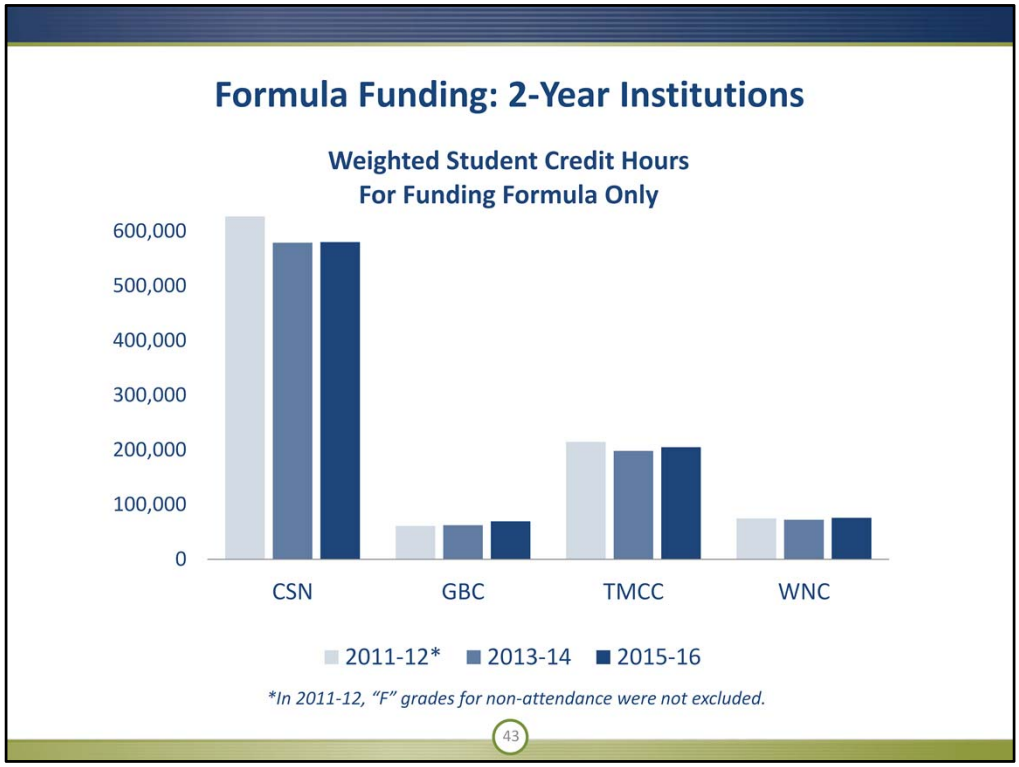

Source: NSHE

Weighted student credit hours (WSCH) are derived from the SCH generated by enrollments in courses qualified for state funding. WSCH excludes non-resident student enrollments, enrollments that resulted in a grade of "W" or no assigned grade, and "F" grades for non-attendance.

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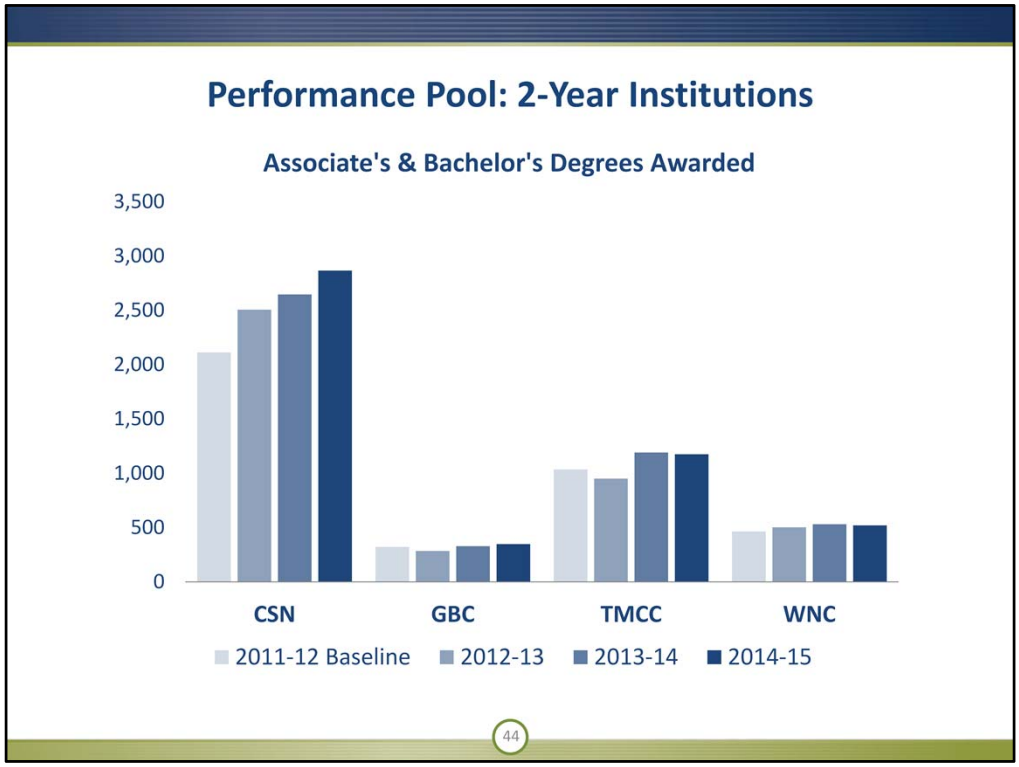
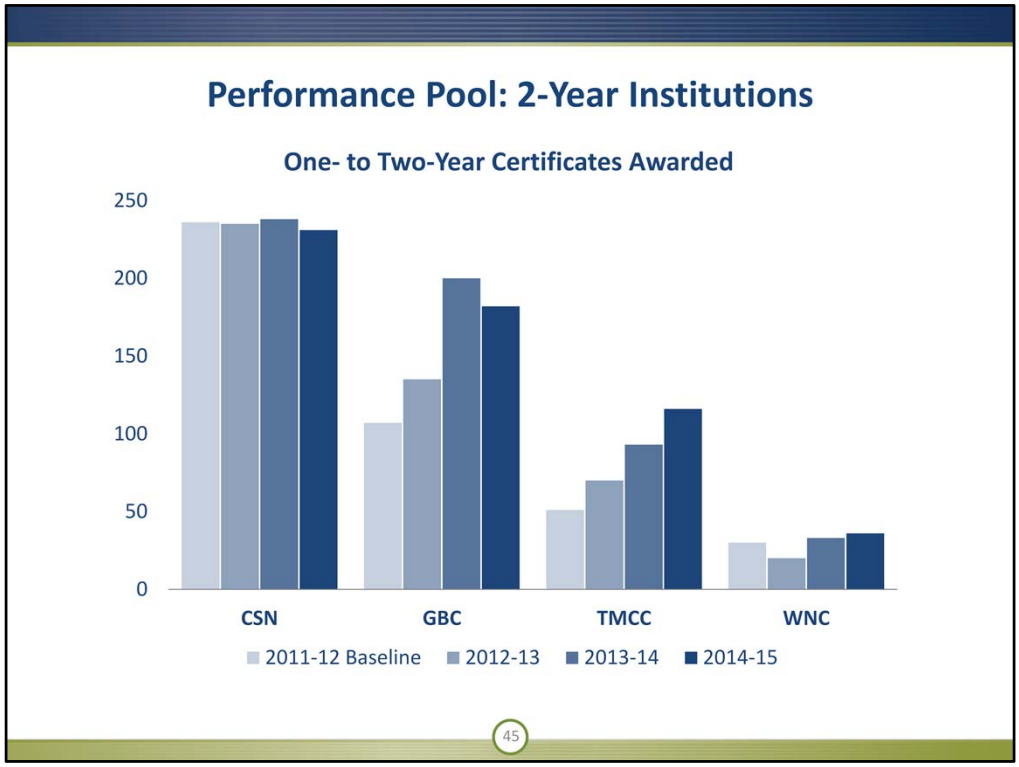
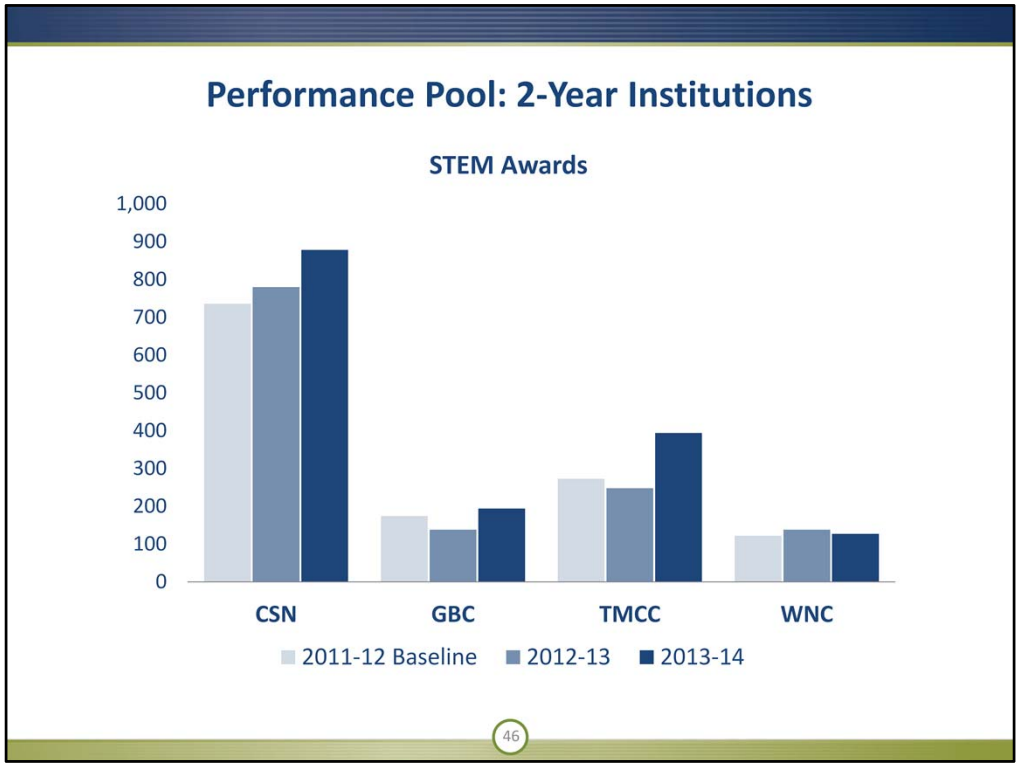


Source: IPEDS

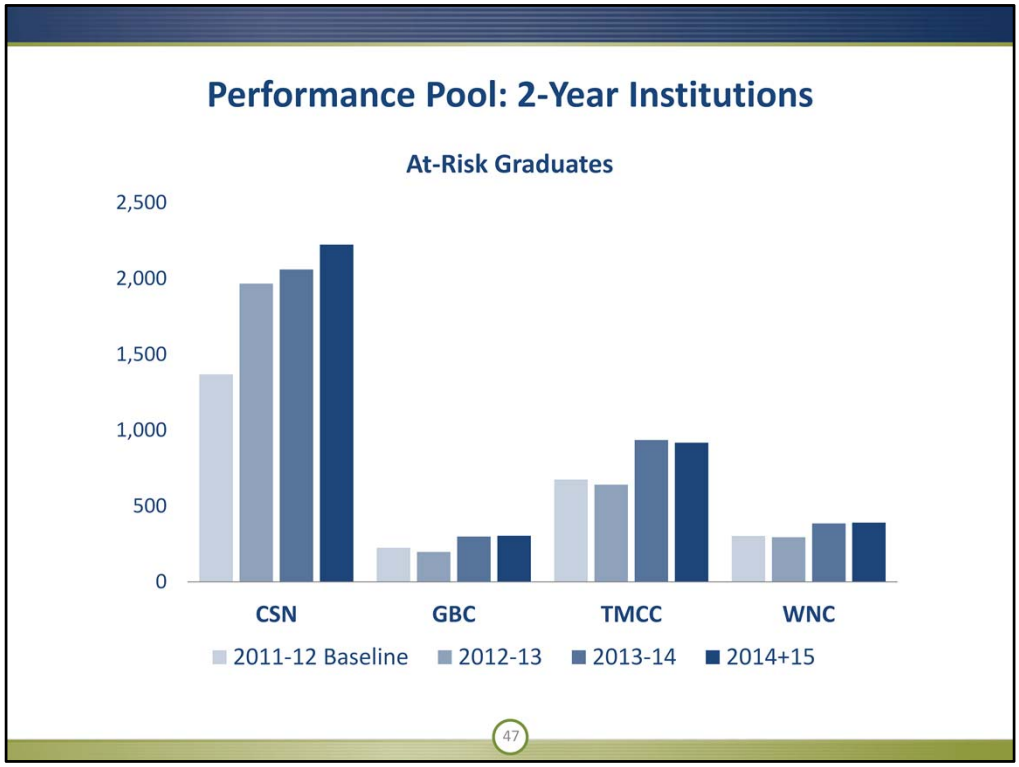


Source: IPEDS

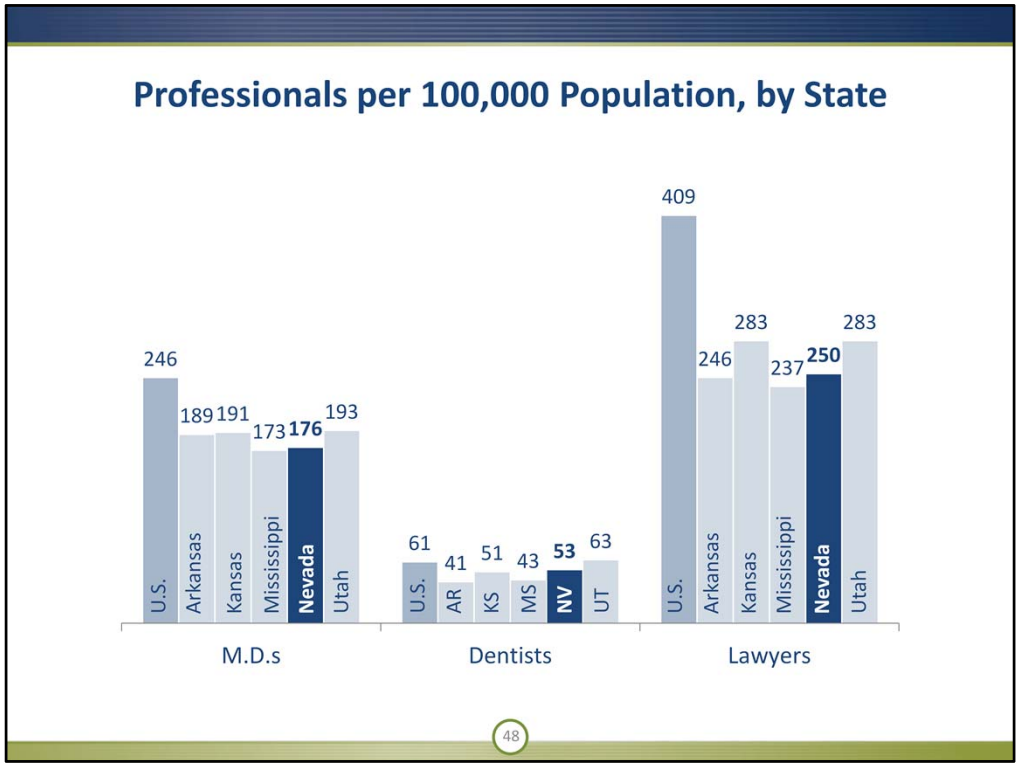
Skills certificates (less than one year) are not included. They are counted in a separate category beginning 2014-15.



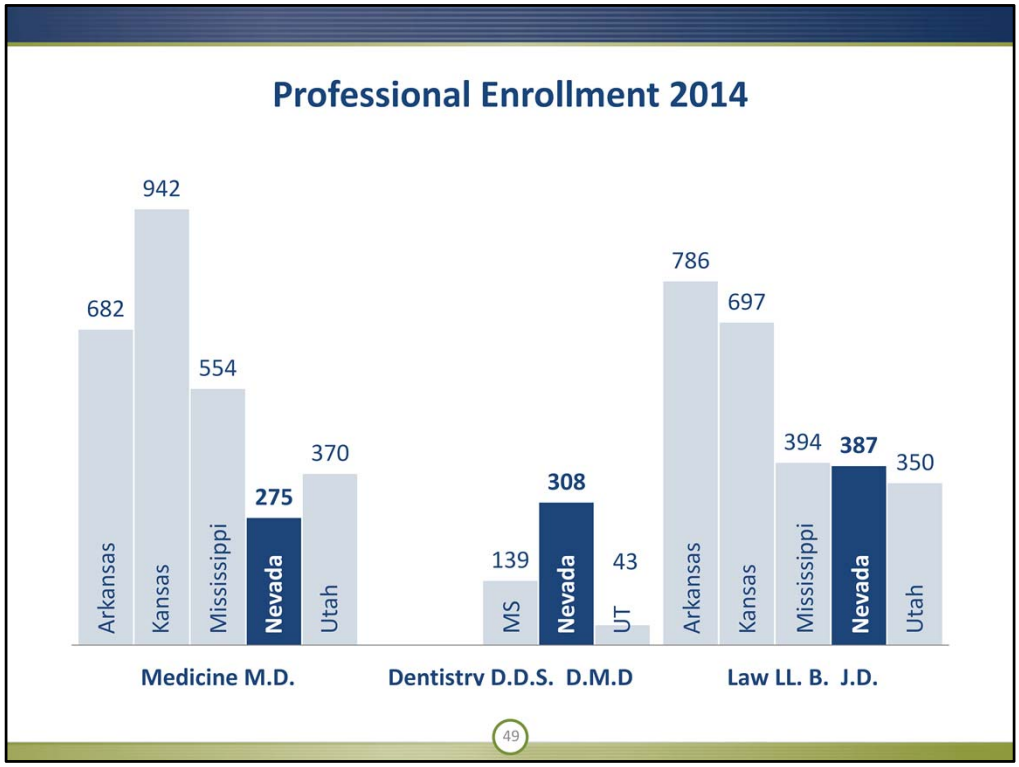
Source: IPEDS



Source: IPEDS and institutionally identified Pell recipients

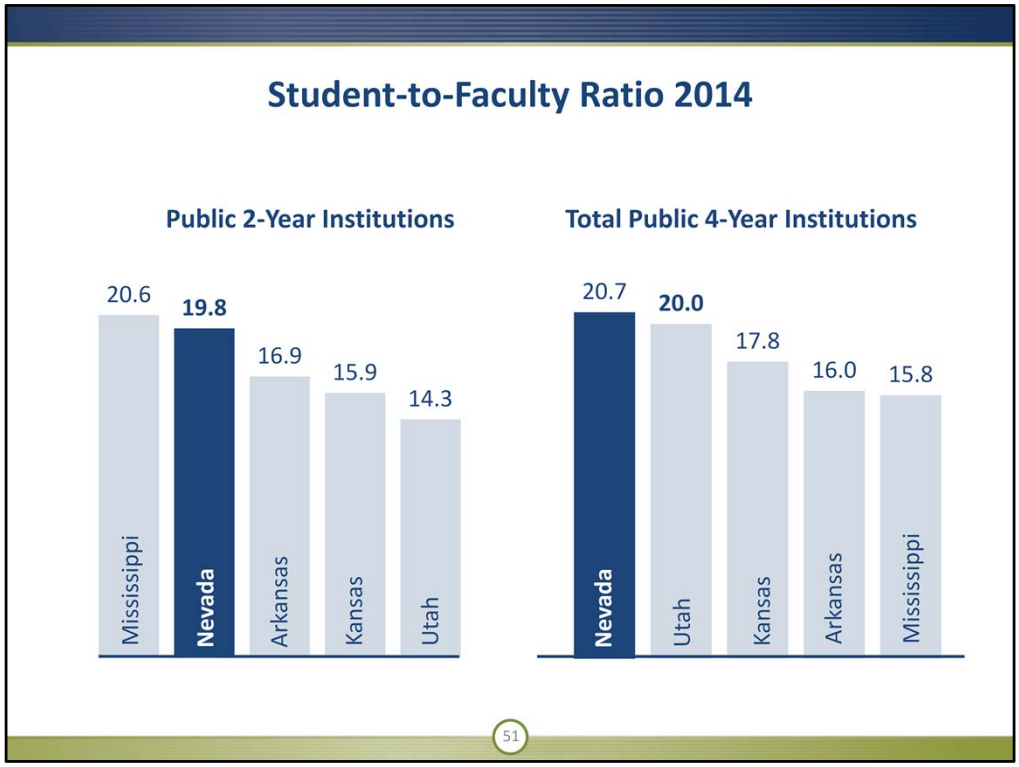


Sources:
MDs: State Physician Workforce Data Book (2014)
Attorneys: ABA National Lawyer Population Suvery (2016)
Nurses: Kaiser Family Foundation (2016)
Dentists: American Dental Association
U.S. Census Bureau Population Estimates



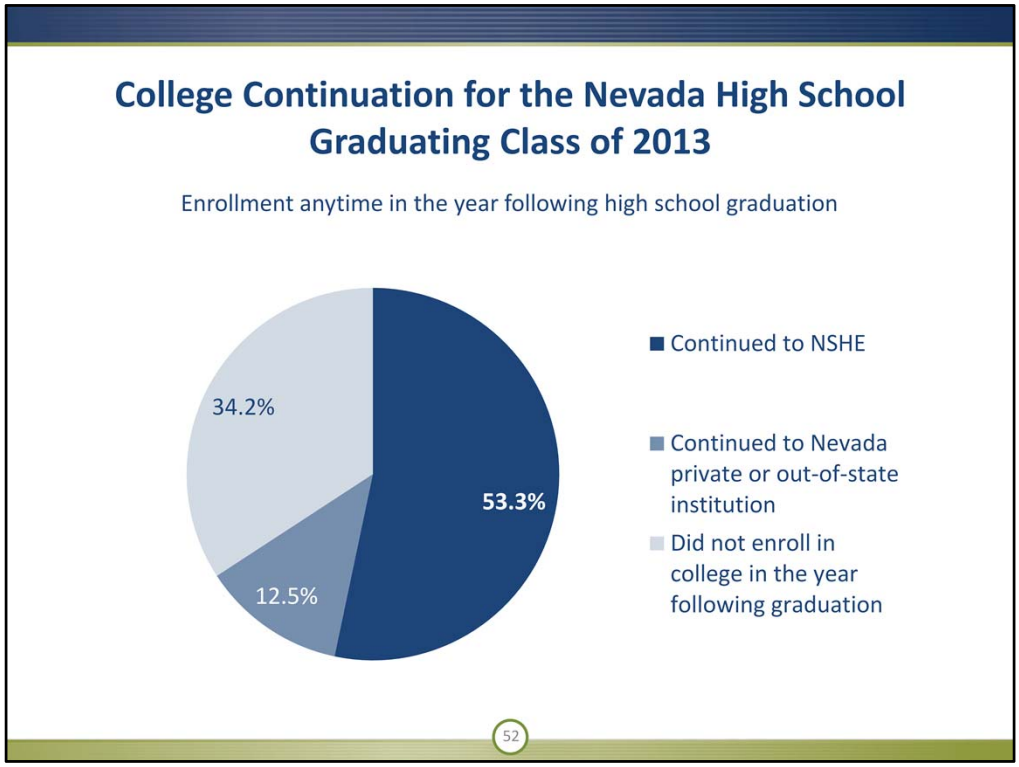
Source: IPEDS

Sources:
Nurses: Kaiser Family Foundation (2016)
U.S. Census Bureau Population Estimates

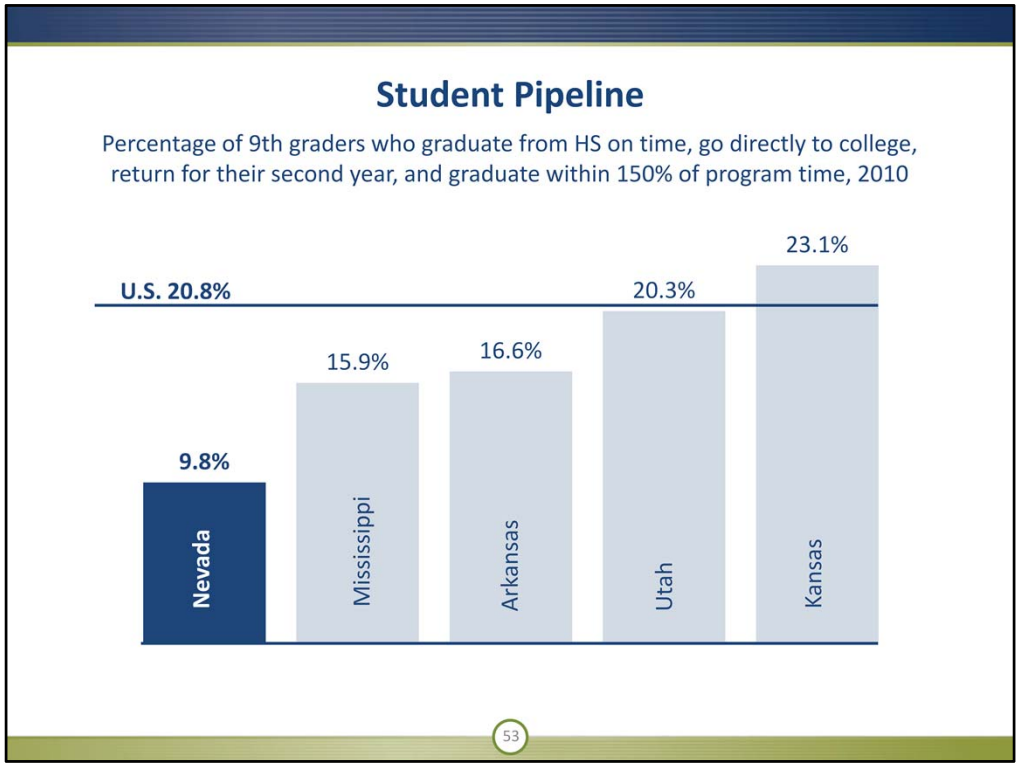


Source: IPEDS

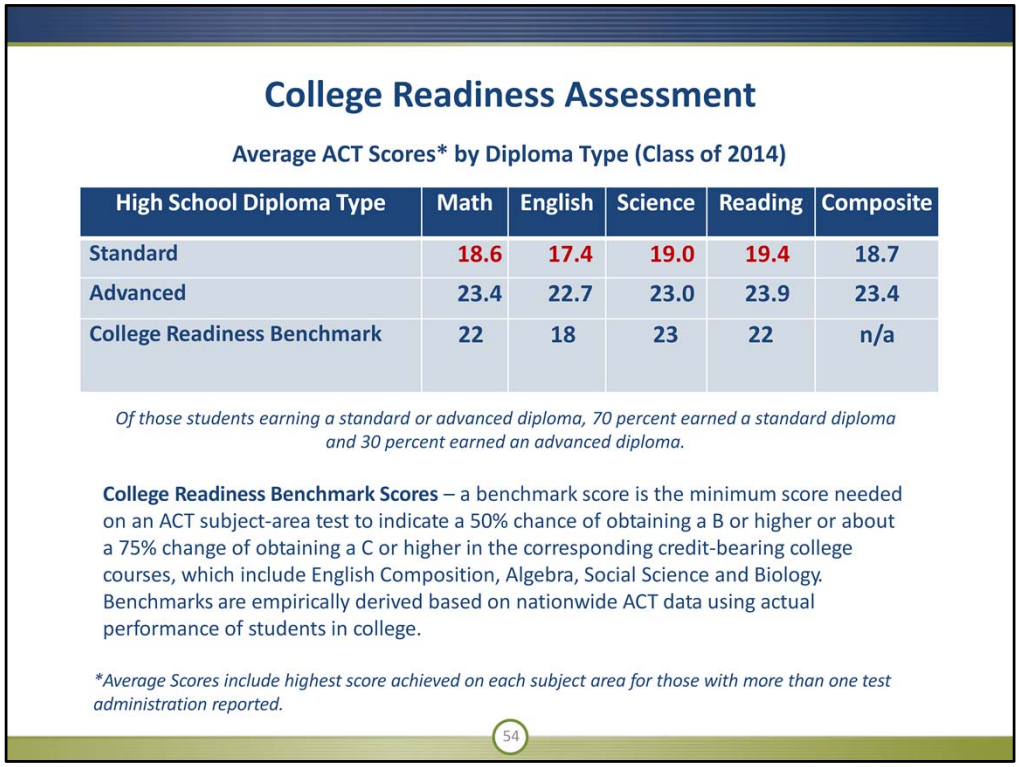
Institutions strive for a lower student-to-faculty ratios.



Source: Nevada P-20 to Workforce Research Data System (NPWR): NSHE Data Warehouse; National Student Clearinghouse



Source: NCHEMS



College Readiness Assessment

Average ACT Scores* by Diploma Type (Class of 2014)

High School Diploma Type	Math	English	Science	Reading	Composite
Standard	18.6	17.4	19.0	19.4	18.7
Advanced	23.4	22.7	23.0	23.9	23.4
College Readiness Benchmark	22	18	23	22	n/a

Of those students earning a standard or advanced diploma, 70 percent earned a standard diploma and 30 percent earned an advanced diploma.

College Readiness Benchmark Scores – a benchmark score is the minimum score needed on an ACT subject-area test to indicate a 50% chance of obtaining a B or higher or about a 75% change of obtaining a C or higher in the corresponding credit-bearing college courses, which include English Composition, Algebra, Social Science and Biology. Benchmarks are empirically derived based on nationwide ACT data using actual performance of students in college.

**Average Scores include highest score achieved on each subject area for those with more than one test administration reported.*

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Source: ACT; NDE; NSHE; NPWR

College Readiness Assessment

Students Needing Remedial Courses* by Diploma Type (Class of 2014)

High School Diploma Type	Remedial Total	Placed into Both Remedial Math & English	Placed into Remedial Math ONLY	Placed into Remedial English ONLY
Advanced	39.0%	11.1%	15.5%	12.5%
Standard	70.4%	34.4%	20.9%	15.1%

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Source: ACT; NDE; NSHE; NPWR

Biennial Budget Summary

2017-18 and 2018-19 Budget Request Major Initiatives
(in millions)

	FY 18	FY 19
Base Budget/Maintenance Items		
Professional Merit & Benefits	$10.80	$21.86
Classified Step & Benefits	$2.93	$3.92
Formula Caseload Growth (FY 16 WSCH over FY 14)	$29.51	$29.51
Formula Caseload Adjustment – DRI	$(0.29)	$(0.29)
UNLV School of Medicine Buildout	$2.27	$10.74
Enhancement Requests		
Formula Enhancement – CTE Weights (Community Colleges)	$12.24	$12.24
DRI Formula Correction	$0.20	$0.20
Silver State Opportunity Grant ($2.5m/ year FY 16 and FY 17)	$5.00	$5.00
DRI Weather Modification (Cloud Seeding)	$0.68	$0.68
Capacity Enhancements – Systemwide	$9.99	$25.21
Fiscal Impacts-Other State Budgets		
WINN Fund (GOED Budget)	TBD	TBD
Potential Budget Reductions		
Five Percent Reduction Plans	$(27.56)	$(27.56)
2X Cap Maximum Request Limit (non-formula budgets)	$(1.54)	$(2.84)

Updated 9/22


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