At the Board of Regents’ September 2016 meeting I made a presentation on the State of Higher Education in Nevada. The main themes of that presentation were:

1. Nevada higher education is underbuilt to achieve the state’s ambitious attainment goals, necessary though those goals are to the state’s wellbeing.

2. Though NSHE institutions’ performance has shown steady improvement, we have some way to go to be “performing well.” And,

3. NSHE institutions face substantial headwinds in improving performance, mostly related to the significant under-preparation of Nevada high school students.

I recommended that the Legislature revisit the 2004 “Capacity Study” to obtain more granular information on where we stand and what needs to be done to go forward. Happily, the legislature has authorized that study (AB202), including an additional focus on cost and affordability and an analysis of faculty compensation in light of the lack of merit in the biennial budget.

Part of the goal of these efforts was my assumption that many of our intra-system disputes emanate from an across-the-board underinvestment in higher education. Of course, the Governor graciously supported the Board’s recommended budget which I am pleased to report was adopted by the Legislature. The result is an impressive 13.44% increase in funding of higher education in Nevada. This substantial increase is particularly impressive when compared with state funding across the country since the Great Recession. We are indebted to the Governor and Legislative leadership for their vision and commitment to higher education in Nevada.

Nevertheless, I expect the Capacity Study to confirm my assumption that, despite this significant increase in funding for higher education in Nevada, our institutions are still underfunded. But given the time the study will take and the immediate imperative that the Board and the System Administration begin work on the NSHE budget recommendations for 2019, I offer the following short presentation which shows persistent underinvestment in our institutions at every level.

Let me begin with two quotations from a study by Harvard professor David Deming. His April 2017 report for the Hamilton Project, Increasing College Completion with a Federal Higher Education Matching Grant, is interesting. But I refer to it because of his review of the literature on pages 11-13. There he highlights that student success is directly correlated with per student spending at institutions. [Slides 2,3] He goes on to point out that higher education institutions have seen large impacts from investments in well-designed student success programs. Those of you who heard me speak on the State of Higher Education in Nevada know that it is the limited capacity to offer wide-ranging student success programs that I identified as an apparent issue in our system. Yet, much of the new funding from the recent legislative session is based on enrollment growth or on salary increases, creating little new capacity to support expanded student success programs.

The following slides show that our institutions are generally below the median levels of state and local funding per student and generally well behind in overall revenues per student. I have made comparisons here to all schools in each NSHE institution’s Carnegie category in order to account for mission, type of program delivered, and combinations of programs and services. I have also highlighted comparisons to the institutions in neighboring states and similarly populated states. All data here is FY2015 data from IPEDS and therefore does not include the increased funding from the recent legislative session.

Slide 4 shows Truckee Meadows Community College to be within the first standard deviation of schools but below the median. That is, it is within...
the major group above and below the median that constitutes 68.2% of the outcomes but is below the 50th percentile. TMCC is underfunded from a state and local revenue perspective, though not so much that it is an outlier. Slide 5 shows this in a different way but also shows that, even among schools that get less state and local support, TMCC’s overall revenue per student is very low – last in fact.

[Slide 6] Great Basin College is somewhat better, appearing slightly above the median in its Carnegie category; however, we are here looking at FY2015 data where GBC benefits from both the small institution factor and the mitigation funding, both of which push up GBC’s per student funding. Further, we know that in the coming year, the mitigation funding at GBC is going away. And though there will be additional funds from increased weighted student credit hours and the eventual doubling of the weights in CTE courses, these funds are both tied to student enrollment and are unlikely to significantly increase GBC’s per student funding. That is, we can expect to see a net decrease in GBC state and local funding per FTE, pulling them back toward the median, if not below it. And, like TMCC, its overall revenue per FTE is significantly below its ranking in state and local appropriations per FTE. In Slide 7 you can see that Nevada (for which GBC is the only data point) is 4 of 11 in State and Local Appropriations per FTE but 9 of 11 in overall revenue per FTE.

College of Southern Nevada and Western Nevada College share a Carnegie category and Slide 8 shows CSN near the median and WNC just above it. Like GBC, WNC benefits here from both the small institution factor and mitigation funds. Consequently, we should expect it to move toward CSN as the mitigation funding disappears this coming year. Slide 9 tells a similar story for these institutions as we saw with the other colleges in our system. Compared to the levels of support for schools in their category in other states, Nevada’s institutions are at the median for state and local appropriations but below the median for overall expenditures. Like TMCC, CSN falls from just below the median for state and local appropriations to last in overall revenue.

Let me make just two points about funding of community colleges in our system as underscored by these data. First, though the use of Carnegie categories controls (to some extent) for differences in mission and nature of the institution, none of these data take into account the performance of the school systems feeding the institutions. Because we know that Nevada elementary and secondary education has been underperforming in a significant way, we know that the demands on our colleges are tremendous. That is, we should expect our institutions to be funded well above the median, given the significant, if not totally unique, role they play in making up for deficits in our secondary system. And as the studies referenced by Dr. Deming highlight, improving student success is directly tied to the resources institutions have at their disposal to dedicate to the task. Whether it is expansion of CSN’s Catalyst program, or just adding more faculty to offer extra sections – keeping class size down so instructors can provide more attention to students or offering more sections to accommodate schedules of working students – additional resources per student are crucial to improving student success.

Second, our performance-based funding formula is successful in incentivizing student success and providing accountability for state funding but it is not designed to significantly increase funding per student at our institutions. Institutions will receive marginally more funding per student if they increase the proportion of students moving to the upper division and where they increase the proportion of students enrolled full time (i.e., improve their FTE to Headcount ratio); however, these changes will not likely move the funding per FTE substantially and are hard to accomplish at the colleges in any case. Thus, as I will argue later, the Board’s next budget request will likely need to focus on additional proposals that add funding beyond increases or decreases in the formula – likely as was done with the increased formula funding for CTE courses.

Turning to Nevada State College, Slide 10 shows that NSC’s state and local appropriations per FTE are below the median, a perhaps surprising result given the small size of the institution and the widespread perception that it has significant funding as a startup. Though that perception might be supported by NSC’s favorable student faculty ratio, it is not supported by the data. Indeed, not only is NSC’s state and local appropriations per FTE below average, Nevada falls to 23 of 24 in overall revenue per FTE in this Carnegie category (where NSC is the only Nevada institution). Much of what has been said about our community colleges applies to NSC; it is unlikely that the gap in overall or state and local revenues per FTE can be made up under the ordinary operation of the formula and, as the state’s four-year access institution, it faces substantial challenges with underprepared students.
When UNR and UNLV are compared to research institutions in their category (Carnegie Research Higher), they too straddle the median of the category. [Slide 12] Also facing underprepared students, this level of state and local appropriation is troubling. However, the Board had embraced the goal of these institutions attaining Carnegie Research Highest designation and many of the Board’s decisions regarding these institutions have been animated by that goal. Jim Thompson, former CEO of the RAND Corporation, has generously permitted me to share with you the scatter chart he constructed after analyzing the most recent Carnegie classification. [Slide 13] You will note that both UNLV and UNR somewhat outperform their level of state and local appropriation in Carnegie, but for the most part they are in Carnegie where they are in state and local appropriations – in the middle of the pack. Suffice it to say, you get what you pay for! One can argue that the institutions have provided a good return on investment by over performing in the Carnegie rankings but one would be hard pressed to suggest that they should reach Carnegie Highest designation at the current level of state and local funding per FTE, absent some unusual funding arrangement. These outcomes are duplicated when our universities are compared to Carnegie category peers in neighboring states [Slides 14 and 15], or with Carnegie category peers in similarly sized states [Slides 16 and 17].

When compared to Carnegie Research Highest institutions in all states [Slide 18], both UNLV’s and UNR’s state and local appropriations drop below the median, though interestingly they still lie within the first standard deviation. But when compared to the Carnegie Research Highest institutions from states of similar population [Slide 20], one sees both institutions drop to the bottom of the pack (last and 5 of 7, respectively). This perhaps reflects the need for substantial support per student FTE in small states to maintain the kind of research and PhD production emphasized by the Carnegie methodology. Not only is the combined state and local appropriation per FTE in Nevada last, the overall revenue per FTE is last [Slide 21] and very far behind three of the five states. Similar outcomes are found in a comparison with Carnegie Research Highest institutions in neighboring states [Slides 22 and 23].

Both of our research universities have seen substantial increases in weighted student credit hour under the formula. And they are arguably in the best position to improve their state and local appropriations per FTE by increasing student progression, retention, and full time enrollment – i.e., by improving the ratio between student FTE and headcount. However, like our colleges, they are unlikely to substantially improve their state and local appropriations per FTE in a way that closes the gap with Carnegie Research Highest institutions, particularly if the data from similarly populated states really indicates that higher than average investments are needed to support major research institutions.

Over the next several months, the Board should consider proposals that could close the gaps described here. Let me offer two approaches to illustrate what you might explore. First, you might focus on parts of the institutions’ missions that could benefit from increased weights to emphasize that mission in the formula. This is basically what was done with the increased CTE weighting. Two options in this category come to mind: for the colleges you might consider supplemental funding for student success programs with proven results; and for the research universities one might increase weights for graduate education or perhaps just the research PhD’s that Carnegie tracks. This combined approach would have the benefit of emphasizing mission. However, we know from legislators’ responses to the CTE proposal that they will likely want to see detailed analysis of what the increased weights will accomplish and why they are justified. Though this approach has much to support it, a defensible analysis of a supplemental funding program or of specific adjustments to the formula might be difficult to produce in the interim before the next legislative session.

Another, simpler, approach that has been batted about is seeking formula funding for summer courses. The fiscal impact is significant; however, supported by a well done study, such an approach might be shown to support student success. Summer Pell grants seem to have returned, further supporting a three term approach to scheduling that would help commend this proposal. In any case, it is clear that a substantial degree of work is necessary if the Board is to recommend new funding that brings our institutions in line with the funding of peers and their missions as reflected in existing and aspirational Carnegie categories.
Funding to Mission?
A Carnegie-based view on funding adequacy for NSHE institutions

Chancellor John V. White
May 25, 2017
"... lower public subsidies per student negatively affect completion rates and increase time to degree."

David J. Deming, Increasing College Completion with a Federal Higher Education Matching Grant, The Hamilton Project, Policy Proposal 2017-03, April 2017, at p. 12 (references omitted)
"A number of recent studies suggest that postsecondary resources are strongly related to degree completion. Bound, Lovenheim, and Turner (2010) show that declines in resources per student—rather than changes in the academic preparation of students—have led to declining completion rates over time. Deming and Walters (2017) study the causal impact of changes in state appropriations on student enrollment and degree completion. They find that state higher education budget cuts have a large negative impact on postsecondary attainment."

Associate’s Colleges: Mixed Transfer/Career & Technical – Mixed Traditional/Nontraditional
### Associate’s Colleges: Mixed Transfer/Career & Technical – Mixed Traditional/Nontraditional

State & Local Appropriations and Total All Revenue per FTE

<table>
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<tr>
<th>State</th>
<th>State &amp; Local Appropriations</th>
<th>Total All Revenue</th>
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</thead>
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<td>MI</td>
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Average State & Local Appropriations per FTE – All Institutions Classified as Mixed Transfer/Career & Technical – Mixed ($6,384)

Average All Revenue and Other Additions per FTE – All Institutions Classified as Mixed Transfer/Career & Technical – Mixed ($14,015)

## Neighboring States

Comparably Sized States
Baccalaureate/Associate’s Colleges: Mixed Baccalaureate/Associate’s

State and Local Appropriations per FTE

Frequency

GBC
Baccalaureate/Associate’s Colleges: Mixed Baccalaureate/Associate’s
State & Local Appropriations and Total All Revenue per FTE

Average All Revenue and Other Additions per FTE – Mixed Baccalaureate/Associate’s ($16,571)

Neighboring States  Comaprably Sized States
Baccalaureate/Associate’s Colleges: Associate’s Dominant

CSN  WNC

State and Local Appropriations per FTE

Frequency
**Baccalaureate/Associate’s Colleges: Associate’s Dominant**

State & Local Appropriations and Total All Revenue per UG and GR FTE

- **Average State & Local Appropriations per FTE – Associate’s Dominant ($4,553)**
- **Average All Revenue and Other Additions per FTE – Associate’s Dominant ($12,879)**

### Neighboring States
- OH
- AS
- OK
- GA
- FL
- WA
- IN
- NV
- WNC
- ND
- UT
- HI
- MI
- TX
- WI

### Comparably Sized States
- $19,903
- $10,593
- $11,306
- $10,955
- $9,127
- $10,955
- $11,005
- $21,278
- $22,026
- $17,693
- $14,927
- $23,894

- $2,866
- $2,913
- $3,177
- $3,967
- $4,052
- $4,184
- $4,270
- $4,927
- $5,803
- $5,862
- $5,881
- $7,251
- $7,483
- $8,018
- $15,277
Baccalaureate Colleges: Diverse Fields

All States

![Graph showing distribution of state and local appropriations per FTE for all states.](image-url)
Baccalaureate Colleges: Diverse Fields
State & Local Appropriations and Total All Revenue per FTE

Average State & Local Appropriations per FTE – All Institutions Classified as Baccalaureate Colleges: Diverse Fields ($6,556)

Average All Revenue and Other Additions per FTE – All Institutions Classified as Baccalaureate Colleges: Diverse Fields ($21,422)
Doctoral Universities: Higher Research Activity

All States

UNLV UNR

State and Local Appropriations per FTE

Frequency
2015 Carnegie Study

Per Capita Research Index vs Aggregate Research Index

UNLV

UNR

KANSAS

UTAH

KANSAS ST

ARKANSAS

MISSISSIPPI

MISSISSIPPI ST

Limited

Higher

Highest
Doctoral Universities: Higher Research Activity

States Neighboring Nevada

- Port St U AZ
- San Diego St UNLV
- UT St UNR
- U ID
- CA Merced
# Doctoral Universities: Higher Research Activity

State & Local Appropriations and Total All Revenue per UG and GR FTE

## States Neighboring Nevada

<table>
<thead>
<tr>
<th>State</th>
<th>Average State &amp; Local Appropriations per UG and GR FTE</th>
<th>Average All Revenue and Other Additions per UG and GR FTE</th>
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<tr>
<td>ID (U. ID)</td>
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Average State & Local Appropriations per UG and GR FTE – All Institutions Classified as Higher Research Activity = $8,477

Average All Revenue and Other Additions per UG and GR FTE – All Institutions Classified as Higher Research Activity = $31,082
Doctoral Universities: Higher Research Activity

States with Comparable Size to Nevada

- Jackson St
- Wichita St
- SO MS
- UNLV U
- UT St
- UNR U
- MS St
- U
Doctoral Universities: Higher Research Activity
State & Local Appropriations and Total All Revenue per UG and GR FTE
States with Comparable Size to Nevada

Average All Revenue and Other Additions per UG and GR FTE – All Institutions Classified as Higher Research Activity = $28,587

Average State & Local Appropriations per UG and GR FTE – All Institutions Classified as Higher Research Activity = $7,409
Doctoral Universities: Highest Research Activity

All States
2015 Carnegie Study
Doctoral Universities: Highest Research Activity

States with Comparable Size to Nevada

UNLV
KS
St
UN
N
of
R
AR
U
of
UT
U
of
KS
U
of
MS

State and Local Appropriations per FTE

Frequency
Doctoral Universities: Highest Research Activity

State & Local Appropriations and Total All Revenue per UG and GR FTE

States with Comparable Size to Nevada

Average All Revenue and Other Additions per UG and GR FTE – States with Comparable Size = $74,151

Average State & Local Appropriations per UG and GR FTE – States with Comparable Size = $10,468

UNLV NV UNR AR (U of AR) KS (2) UT (U of UT) MS (U of MS)
Doctoral Universities: Highest Research Activity

States Neighboring Nevada

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<tr>
<th>University</th>
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<td>Univ of OR</td>
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<tr>
<td>Univ of NV</td>
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<tr>
<td>Univ of UT</td>
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State and Local Appropriations per FTE

Frequency

Range: 0 to 5
Doctoral Universities: Highest Research Activity
State & Local Appropriations and Total All Revenue per UG and GR FTE
States Neighboring Nevada

Average All Revenue and Other Additions per UG and GR FTE – States Neighboring Nevada = $79,693

Average State & Local Appropriations per UG and GR FTE – States Neighboring Nevada = $8,572