Colorado Higher Education Funding Model Analysis

Purpose of Document

The Colorado Department of Higher Education requested support from Lumina Strategy Labs to conduct an independent review of the funding formula used to allocate state general fund dollars among the state's public institutions of higher education. Lumina Strategy Labs provides content expertise and technical assistance support to state leaders and policymakers on policies designed to increase higher education attainment. HCM Strategists, which supports the management and content development for Strategy Labs, has engaged with several states during the development and implementation of outcomes-based funding models.

This report is intended to provide summative analysis of the funding model's alignment to Colorado's goals and priorities as detailed in *Colorado Rises: Advancing Education and Talent Development*.[i] Additionally, the report will examine the model's alignment to research and practice-informed best practices for the design and implementation of outcomes-based funding policies, as outlined in HCM's outcome-based funding typology report, *Driving Better Outcomes*.[ii] Recommendations for how the model could be strengthened to enhance these alignments and support key strategic priorities and student success are also included.

Overview Rationale for Current Model Approach

In 2014, H.B. 14-1319 directed the Colorado Commission on Higher Education (CCHE) to develop a funding model for higher education that would direct funding based on state policy goals, rather than individual negotiations with campuses.[iii] The model was intended to:

- Push the State toward the achievement of policy goals including increasing the number of students earning high quality postsecondary credentials, improving postsecondary participation among underserved communities, and ensuring that higher education is available throughout the State.
- Provide a mechanism for the General Assembly to direct funding based on policy goals.
- Provide a mechanism for explaining funding levels, thus improving the General Assembly's oversight of higher education and improving transparency.
- Provide greater predictability in higher education funding.[iv]

The model consists of three components: The College Opportunity Fund Stipend, Role & Mission, and Outcomes/Performance. The College Opportunity Fund Stipend provides funds for undergraduate resident students and must always be 52.5% of the total state appropriation. The Role & Mission and Outcome/Performance components allocate remaining funds using various metrics that must be transparent and measurable and tied to the policy goals established by the General Assembly and the Commission in its Master Plan.[v]

Funding Model Components[vi]

College Opportunity Fund Stipend (COF) 53% of Total State Appropriation in FY20 Request
• Funding provided for undergraduate resident students   o Must be at least 52.5% of total state appropriation

Role & Mission 24% of Total State Appropriation in FY20 Request

Mission Differentiation
• A flat amount based on the institution's size and type, an adjustment for small rural institutions, and a special factor adjustment used to keep two institutions within historical funding guardrails.

Pell-eligible Student Support Services
• Credit hours for resident undergraduate Pell-eligible students summed by institution.   o Weighting is 12.5% of the COF Stipend dollar amount.

Weighted Student Credit Hours
• Number of completed credit hours weighted by course level and type.   o Non-resident credit hours are excluded.

Outcomes/Performance 23% of Total State Appropriation in FY20 Request

Completions

• The number of certificates or degrees awarded at an institution and the number of students who transfer from a community college to another institution after the completion of a minimum of 18 credit hours.
  o Completion weightings vary based on level of credential (certificate, associate, bachelors)
  o A premium is applied to STEM+H completions and for completions earned by Pell-eligible students
  o Non-resident student completions have a 0.3 weight

Retention

• The number of students crossing completed credit hour thresholds
  o 30/60/90 hours for four-year universities
  o 15/30/45 hours for two-year institutions
  o Higher thresholds have a higher weight

Institutional Productivity
• An institution's total weighted degrees per full-time equivalent enrollment, indexed to the state average.

There have been limited changes to the component categories since the model was first used for the FY 2016 budget request. Adjustments have included:

- Replacing an "underrepresented minorities" factor with additional funds for low-income (Pell-eligible) students (FY 2015-16).

- Reducing the weight on non-resident completion to one-third of weight for residents (FY 2016-17).
- Increasing the weight on Pell participation and Pell completions, benefitting access institutions (FY 2018-19).
- Adding a base funding adjustment for small institutions (FY 2018-19). [vii]

Assessment of the Model Relative to Master Plan Goals

Colorado Rises: Advancing Education and Talent Development, completed in 2017 as an update to the 2012 master plan, identified four strategic goals for the higher education system fundamental to meeting the statewide credential attainment goal of 66 percent by 2025. Each goal is supplemented by supporting targets and indicators.

- Strategic Goal #1: Increase Credential Completion
    - Increase Annual Credential Completion
    - Increase High-demand Credential Completion

- Strategic Goal #2: Erase Equity Gaps
    - Increase the Age 25-34 Population Credential Attainment
    - Increase the Number of Annual Credential Completions by Minority and Low-income Students
    - Increase Certificate Completion by Minority and Low-income Students
    - Increase High-demand Credential Completion

- Strategic Goal #3: Improve Student Success
    - Improve Student Persistence and Retention
    - Reduce Remediation Needs of Students
    - Reduce Average Time-to-degree
    - Reduce Average Credits-to-degree

- Strategic Goal #4: Invest in Affordability and Innovation
    - Increase Public Investment in Student Success, Research, and Innovation
    - Decrease Average Annual Undergraduate Federal Student Debt
    - Increase Innovation

This section examines these goals and targets and places them into four general groups.
1. Aligned with Funding Model
2. Partially Aligned with Funding Model
3. Not Directly Aligned with Funding Model
4. Not Recommended for Formal Inclusion as a Component of the Model

It is important to note that no funding model can or should try to support all goals of the state's higher education system. When formulas are designed to respond to multiple goals, they become overly burdensome, complicated and unproductive in achieving broader objectives and priorities. Well-designed funding models address the broader goals for higher education while allowing institutions to respond in ways that best serve their student populations and enhance their mission.

Master Plan Goals Aligned with the Funding Model

- Increase Annual Credential Completion (Goal #1)
  - *9,200 credential completions per year on top of natural growth*
  - *Increase certificate completion, as a proportion of total credential completion, from 25 percent (15,845) in 2017 to 33 percent (20,915) by 2025*

  - Model Status: Aligned. Completion is a significant part of the funding model (roughly 16% of the total calculation in the FY 2019 model). Currently, completed certificates are weighted 1/4 the amount of a bachelor's degree and 1/2 the amount of an associate's degree. More study is likely needed to determine if these weightings are appropriate to help Colorado reach the goal of increasing certificate completion as a percentage of total credential completion.

Master Plan Goals Partially Aligned with the Funding Model

- Increase High-demand Credential Completion (Goal #1)
  - *Increase STEM credentials, including health care, from 12,500 to 14,500 by 2025*
  - *Increase educator-preparation credentials from 2,800 to 3,280 by 2025*

  - Model Status: Partially aligned. STEM and Health completions are multiplied by a 1.5 premium. However, there are no apparent incentives in the model that prioritize educator-preparation credentials.

- Increase the Number of Annual Credential Completion by Minority and Low-income Students (Goal #2)
- Increase the Certificate Completion by Minority and Low-income Students (Goal #2)
- Increase High-demand Credential Completion (Goal #2)
  - *Increase STEM credential completions by minority and low-income students*
  - *Increase educator-preparation credential completions by minority and low-income students*

- o Model Status: Partially Aligned. These three targets are grouped together for the purpose of this analysis. The model subsidizes the enrollment of low-income students through the Support Services for Pell-eligible Students in Role & Mission. Additionally, a 1.5 premium is applied to credentials earned by low-income students. The success of underrepresented minority students is not prioritized in the funding model, despite the emphasis placed on this goal in the master plan.

- Improve Student Persistence and Retention (Goal #3)
  - o *Increase first-to-second-year and second-to-third-year retention rates*
- Reduce Average Time-to-degree (Goal #3)
  - o *Improve on-time graduation rates*
- Reduce Average Credits-to-degree (Goal #3)
  - o *Improve percentage of students who return for the second year with sophomore standing (30 credit hours or more)*

  - o Model Status: Partially Aligned. These three targets are grouped together for the purpose of this analysis. Retention and graduation rates are not explicitly parts of the funding model. However, the incentive to retain and graduate students in a timely manner is embedded in the model. Institutions will not receive funding until a completion is produced or credit hour threshold is crossed. The faster students produce these outcomes, the sooner institutions receive funding for that outcome. Additionally, the model does include the Institutional Productivity metric that uses weighted degrees per FTE enrollment. This measure is more appropriate than a graduation rate since it counts all students and does not rely on a limited cohort.

Master Plan Goals Not Directly Aligned with the Funding Model

- Increase the Age 25-34 Population Credential Attainment (Goal #2)
  - o *Of the Hispanic population from 29 percent (2017) to 66 percent by 2025*
  - o *Of the African American population from 39 percent (2017) to 66 percent by 2025*
  - o *Of the Native American population from 29 percent (2017) to 66 percent by 2025*

  - o Model Status: Not Aligned. The success of underrepresented minority students is not prioritized in the funding model, despite the emphasis placed on this goal in the master plan. Other states, such as Oregon and Ohio, have included

metrics or premiums for these populations in their funding models. Any potential metric should consider the availability and reliability of the data.

- Reduce Remediation Needs of Students (Goal #3)
  - *Increase number of students successfully completing introductory gtPathways courses in English and math*

  - Model Status: Not Aligned. The funding model does not include metrics or weightings for students completing these courses. Other states, such as Arkansas and Nevada, have included success in introductory English and math courses as a metrics in their funding models. Any potential metric should consider the availability and reliability of the data.

- Decrease Average Annual Undergraduate Federal Student Debt (Goal #4)
  - *Decrease percentage of students with debt*
  - *Of those students with debt, decrease average debt load*

  - Model Status: Not Aligned. The funding model does not include metrics tied to student debt. Other states, such as Florida and Maine, have included affordability metrics in their funding models. Any potential metric should consider the availability and reliability of the data, as well as institutions' ability to influence the metric.

Not Recommended for Formal Inclusion as a Component of the Model

- Increase Innovation (Goal #4)
  - *Innovate new education-delivery methods and business models*

  - Model Status: Not Recommended for Formal Inclusion. Not all parts of the master plan need to or should be included as components of the funding model. For the Increase Innovation goal, it is arguably more appropriate for the funding model to provide incentives aligned with student success and to not be prescriptive in how institutions achieve the related goals. Additionally, quantifying the use of new and innovative delivery methods and business models would likely prove extremely difficult.

- Increase Public Investment in Student Success, Research, and Innovation (Goal #4)
  - *Increase state investment*
  - *Increase funding for need-based student aid (federal, state, institutional)*

o <u>Model Status</u>: Not Recommended for Formal Inclusion. Increasing public investment in higher education may be an effect of the model, but cannot directly be included as a component. Goals of the model include providing a mechanism for the General Assembly to direct funding based on policy goals and providing a mechanism for explaining funding levels. If these goals are met, it follows that the General Assembly may be more willing to invest in higher education.

Assessment of the Proposed Model Relative to Recognized Best Practices

In recent years, more states have begun using outcomes-based funding (OBF) models as a way to promote student success and align funding with state goals and priorities. HCM Strategists produces an annual report that establishes a comprehensive typology of OBF models and a state-by-state classification of funding systems informed by research and engagement with state policymakers.[viii] Reflected in this typology report, as well as the Lumina State Policy Agenda, there are a set of common principles and design approaches that help to enhance these models' alignment between funding and goals to increase student attainment and equity.[ix] These elements include:

- Established completion or attainment goals are linked to the model;
- Recurring base funding is distributed and is sustained over consecutive years;
- A significant level of funding is distributed by outcomes;
- Limited, measurable metrics are used, with degree/credential completion being prioritized;
- Institution mission is accounted for;
- The funding structure is formula-driven to ensure incentives for continuous improvement;
- Success of underrepresented students is prioritized

This section analyzes the funding model relative to these elements and places the model into two categories:
1. Funding Model is Aligned with Best Practices
2. Funding Model is Partially Aligned with Best Practices

There are no elements not at least partially aligned with the funding model. However, there are certain design and implementation principles not represented in the elements that should be considered when examining potential improvements to the model.

Funding Model is Aligned with Best Practices

- Established completion or attainment goals are linked to the model

- o Rationale: State leadership must be firmly committed to and clearly articulate statewide priorities, such as a goal to increase the percentage of residents who complete a postsecondary degree. Securing agreement around a bipartisan, statewide "public agenda" that is targeted to the state's needs and its residents—not just postsecondary institutions—will help focus model development and ensure the model's sustainability.

- o Model Status: Aligned. HB 14-1319 states, "Each role & mission factor and performance funding metric must be tied to the policy goals established by the general assembly and by the Commission in its master plan."[x] The model was initially designed to align to the goals in the 2012 master plan, including "Increasing the attainment of high-quality postsecondary credentials across academic disciplines and throughout Colorado by at least 1,000 new certificates and degrees each year to meet anticipated workforce demands by 2025."[xi]

- • Recurring base funding is distributed and is sustained over consecutive years
  - o Rationale: Models that rely only on new funding have significant challenges in sustainability and reflect limited alignment of state postsecondary investments with state attainment needs. If the outcomes-based formula is implemented with new money only, this bonus allocation is often the first thing reduced or eliminated in tight budget climates. Building OBF into institutions' recurring allocations promotes sustainability and ensures that the policy intent does not languish while waiting for new funding that may never materialize.

  - o Model Status: Aligned. The model is not reliant on new funding. Additionally, it has been sustained for every year since its initial implementation in FY 2016.

- • Limited, measurable metrics are used, with degree/credential completion being prioritized
  - o Rationale: OBF models must be clearly tied to the state's goals and priorities and include metrics identified at the outset that are easily measured and available; otherwise, the system may be compromised or lose credibility. Metrics that are ambiguous, easy to game or inconsistently reported should not be included. For instance, metrics should emphasize the volume of graduates versus graduation rates, as rates are easier to game. Furthermore, the model should track a limited number of metrics, or risk diluting the focus on key priorities.

- o <u>Model Status</u>: Aligned. The model uses relatively few metrics, particularly in the Outcomes/Performance component. Degree and certificate completion is given significant weight. Additionally, mostly volume-based metrics are used instead of rate-based metrics. The exception is the use of weighted degrees per FTE enrollment for institutional productivity. However, degrees per FTE enrollment is preferable to a cohort-based rate which could be more easily manipulated and could provide a greater incentive to restrict access.

- The funding structure is formula-driven to ensure incentives for continuous improvement
  - o <u>Rationale</u>: Formula-driven models use a structured set of rules to distribute funding. There are many versions. A model may award a certain dollar amount for each additional outcome produced, or a model may allocate funding toward institutions that produce a larger share of outcomes relative to other institutions. The key distinction is that formula-driven models do not use pre-set targets or goals. Targets and goals are extremely difficult to appropriately set. Properly setting a target or goal requires a vast amount of information about institutions' current and future operations and resources. Furthermore, targets and goals cannot account for future circumstances that are outside of institutions' control. For example, unforeseen economic recessions or expansions may have large effects on student enrollment. In practice, the targets and goals end up being too ambitious or not ambitious enough. Additionally, targets and goals do not provide a continuous incentive for improvement. For example, if an institution's goal is to produce 100 additional degrees, there is no incentive to produce the 101st degree.

  - o <u>Model Status</u>: Aligned. The model is formula-driven. It does not use pre-set targets and goals. Instead it distributes funding based on each institution's share of outcomes produced. This methodology provides continuous incentives for improvement.

Funding Model is Partially Aligned with Best Practices

- A significant level of funding is distributed by outcomes
  - o <u>Rationale</u>: The share of institutional funding devoted to OBF must be large enough to garner attention, shape priorities and influence actions. Research has shown positive effects on student success from models that distribute as low as five percent of state operating funding.[xii] However, model

structure, stability, and other revenue sources should be considered when determining a sufficient funding amount. As the intent is to align the state's finance policy with the state's policy priorities, as was done with enrollment-driven policies, it would hold that a similar approach should be taken with outcomes-based funding policies. The less the allocation model is tied to outcomes, the less the state's finance policy is aligned with its completion priorities and needs.

- o Model Status: Partially aligned. The model distributes more than five percent of state funding based on outcomes. A 2018 analysis of the model found that nearly 25 percent of the total state funding was distributed according to the production of course completion, progression, degree completion, and other outcome metrics.[xiii] However, additional analysis is needed to determine if this amount of funding is large enough to garner attention, shape priorities, and influence actions. State appropriations make up a much smaller share of Colorado institutions' total educational revenue per FTE compared to most other states.[xiv] Additionally, when tuition revenue is included, the Colorado funding model distributes less funding based on outcomes than other state meeting many of the best practice elements.[xv] Considering this, it should not be assumed that the current level of funding distributed by the outcomes is significant.

- Institution mission is accounted for
  - o Rationale: Models should account for differences in institutional mission, student population and other characteristics. This helps to guard against mission creep and ensures that some institutions are not at a disadvantage compared to other institutions with missions more aligned with model metrics. To accomplish this, some OBF models apply a few common metrics across institutions, while adopting other institution-specific metrics. Other models weight common metrics differently by institution type.

  - o Model Status: Partially aligned. The funding model provides mission differentiation funding based on institution size and rural status. Additionally, the varied cost of instruction between institutions is accounted for in the Weighted Student Credit Hours component and the STEM+Health completion bonuses. More could be done to differentiate based on mission. Some state models vary metrics or the weighting of common metrics based on institution type. Other state models have funding sanctioned off by institution type. Some of these methods should be explored.

- Success of underrepresented students is prioritized

o   Rationale: Extra weight for outcomes earned by underrepresented students (e.g. academically underprepared, low-income, adult, or underrepresented minority students) guards against the unintended consequence of restricting access by enrolling only those students most likely to succeed. Additionally, the success of students from underserved populations is critical to meeting states' education attainment goals.

o   Model Status: Partially aligned. The funding model does provide additional support for low-income students through the Pell-eligible Student Support Services component in Role & Mission and also through additional bonuses for completions earned by Pell-eligible students. Providing additional support for other student populations, such as underrepresented minorities and adult students, should also be explored, especially considering the large attainment gaps between different ethnic groups in the state.

Additional Design and Implementation Principles to Consider

There are other principles in addition to the elements discussed above that may improve the design and implementation of the funding model. These additional principles center on communication and support for institutions. They include:

• Simplifying the model so it can be better understood. The current model has three main components with additional subcomponents. It may not be immediately apparent to all stakeholders how the components and subcomponents function together and how changes to each influence funding. Suggestions for simplifying could include limiting the metrics to only those most aligned with state goals; grouping like incentives together (for example, all support for low-income students could be concentrated in one component or weighting of a component); and explicitly prioritizing metrics through weightings, similar to how completions are currently weighted.

• Effectively communicate how the model works to institutions and other stakeholders and provide analytical support when needed. Examples of this could include developing an interactive version of the model that would allow users to observe how funding would change given hypothetical changes to outcomes; summarizing and presenting institution-specific funding and metric data; developing an annual report that shows the actual dollar effect of changes in outcomes; holding an annual funding formula summit with institution leaders and other stakeholders to discuss the model and its effects, and sharing student success best practices. All of these strategies have been used by other states to help institutions understand and respond to models.

- Monitor institutions' ability to respond to the model and provide assistance when necessary. Additionally, continuously monitor the model for unintended consequences such as quality issues and restricted access, especially among underrepresented student groups. Tennessee implemented their Institutional Outcome Improvement Fund Grant Competition to help institutions develop action plans and strategies to increase outcomes identified in their funding formula.[xvi]

- Extensively model out the effects of any change to the funding model using historical and projected data to ensure the model will function as intended. Particular attention should be paid to shifts in funding between institutions and the resulting volatility, or lack thereof, of the model. Changes could be phased in over a few years to mitigate significant shifts in funding and to give institutions time to respond to the new incentives.

Areas of Improvement/Recommendations

Overall, the current funding model is aligned or partially aligned with many of the state's master plan goals as well as outcomes-based funding best practices. However, there are key opportunities for revision that would allow Colorado to more closely align the model with key priorities, especially those included in the updated master plan, and to better support institutions ability to respond to the model incentives. Below are five recommendations to consider when modifying the funding model.

- **Recommendation 1**: Maintain the model's focus on student success while simplifying the model and its components so transparency can be increased and the model can be better understood. Additionally, provide supports to institutions and other stakeholders, as detailed in the *Additional Design and Implementation Principles to Consider* section of this document.

- **Recommendation 2:** Prioritize the success of underrepresented minority students through bonuses or separate metrics. This would allow for strengthened alignment with the updated master plan and protection against unintended consequences or restricted access. Additionally, the success of these groups of students is essential to the state reaching the 2025 attainment goal. See the *Master Plan Goals Not Directly Aligned with the Funding Model* and the *Funding Model is Partially Aligned with Best Practices* sections of this document for the policy rationale and additional information.

- **Recommendation 3:** Explore adding metrics or bonuses that are aligned with the master plan. Examples include metrics or bonuses associated with:

  o Educator-preparation credentials

- o On-time completion
- o Affordability/student debt
- o Remediation success/success of academically underprepared students
- o English and math gtPathways success
- o Additional weights for certificates, if current weights are deemed insufficient to meet state goals

It's important to keep the focus of the model on credential completion and not to dilute the impact of the model by including too many metrics. Only metrics that can be directly influenced by institutions and have available and verifiable data should be used. Finally, volume-based metrics are less susceptible to gaming and unintended consequences such as restrictions to access, than rate-based metrics. If rate-based metrics are to be included, they should include all students, not just those associated with a particular cohort. See the *Master Plan Goals Partially Aligned with the Funding Model* and *the Master Plan Goals Not Directly Aligned with the Funding Model* sections of this document for the policy rationale and additional information.

- **Recommendation 4:** Review the effectiveness of the amount of funding currently distributed by the model. This is especially important since Colorado institutions rely less on state appropriations than institutions in most other states. See the *Funding Model is Partially Aligned with Best Practices* section of this document for the policy rationale and additional information.

- **Recommendation 5:** Further account for differing institution mission. Explore varying metrics or weights of metrics by institution type, having separate funding pools by institution type, and providing additional support to institutions when deemed necessary. See the *Funding Model is Partially Aligned with Best Practices* section of this document for the policy rationale and additional information.

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[i] Colorado Commission on Higher Education, "Colorado Rises: Advancing Education and Talent", 2017. Developmenthttps://highered.colorado.gov/Publications/CDHE-Master-Plan-2017.pdf

[ii] Snyder and Boelscher, "Driving Better Outcomes: Fiscal Year 2018 State Status & Typology Update", 2018. http://hcmstrategists.com/wp-content/uploads/2018/03/HCM_DBO_Document_v3.pdf

[iii] FY19-20 Higher Education Staff Budget Briefing. Colorado 72nd General Assembly Budget Documents. https://leg.colorado.gov/sites/default/files/fy2019-20_hedbrf.pdf

[iv] FY19-20 Higher Education Staff Budget Briefing. Colorado 72nd General Assembly Budget Documents. https://leg.colorado.gov/sites/default/files/fy2019-20_hedbrf.pdf

v FY19-20 Higher Education Staff Budget Briefing. Colorado 72nd General Assembly Budget Documents. https://leg.colorado.gov/sites/default/files/fy2019-20_hedbrf.pdf

vi Colorado Commission on Higher Education. 10/22/2018 Commission Meeting Agenda. https://highered.colorado.gov/CCHE/Meetings/2018/oct/Oct2018_book.pdf

vii FY19-20 Higher Education Staff Budget Briefing. Colorado 72nd General Assembly Budget Documents. https://leg.colorado.gov/sites/default/files/fy2019-20_hedbrf.pdf

viii Snyder and Boelscher, "Driving Better Outcomes: Fiscal Year 2018 State Status & Typology Update", 2018. http://hcmstrategists.com/wp-content/uploads/2018/03/HCM_DBO_Document_v3.pdf

ix Lumina Foundation. "Lumina State Policy Agenda: 2017-20" https://www.luminafoundation.org/resources/lumina-state-policy-agenda-2017-2020

x Colorado House Bill 14-1319 http://www.leg.state.co.us/clics/clics2014a/csl.nsf/fsbillcont/07005675E98BAA1287257C83007BF534?Open&file=1319_enr.pdf

xi Colorado Commission on Higher Education. "Colorado Competes: A Completion Agenda for Higher Education", 2012. https://highered.colorado.gov/Publications/General/StrategicPlanning/MasterPlan2012/Master_Plan_Final.pdf

xii Callahan, Kate, et al.. "Summary of OBF Impact on Student Outcomes in Tennessee and Indiana". Philadelphia, PA: Research for Action, 2017. https://www.researchforaction.org/publications/summary-obf-impact-student-outcomes-tennessee-indiana/

xiii Snyder and Boelscher, "Driving Better Outcomes: Fiscal Year 2018 State Status & Typology Update", 2018. http://hcmstrategists.com/wp-content/uploads/2018/03/HCM_DBO_Document_v3.pdf

xiv State Higher Education Executive Officers Association. "State Higher Education Finance Report: FY 2017" http://www.sheeo.org/sites/default/files/project-files/SHEEO_SHEF_FY2017_FINAL.pdf

xv Snyder and Boelscher, "Driving Better Outcomes: Fiscal Year 2018 State Status & Typology Update", 2018. http://hcmstrategists.com/wp-content/uploads/2018/03/HCM_DBO_Document_v3.pdf

xvi Tennessee Higher Education Commission. "Institutional Outcome Improvement Fund Grant Competition". https://www.tn.gov/thec/bureaus/finance-and-administration/fiscal-policy/redirect-fiscal-policy/institutional-outcome-improvement-fund-grant-competition.html