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# THE LANDSCAPE OF STATE FUNDING FORMULAS FOR PUBLIC COLLEGES AND UNIVERSITIES

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***We find growth in the number of "hybrid" funding models that incorporate enrollment, performance, and/or prior year allocation (base+) considerations in both the two- and four-year sectors. At the same time, funding formulas with a student enrollment component remained the predominant funding mechanism in the two-year sector.***

With enrollment growth of more than 25% in the past two decades, nearly three in four students in American higher education are enrolled in public colleges and universities.[1] State funding for public higher education has kept pace with inflation over this period but has failed to keep up with rising enrollment.[2] As a result, per-student state funding has declined in most states, while a more diverse group of students are entering public higher education.

Higher education has traditionally acted as a balance wheel for state budgets by taking disproportionate budget cuts during recessions.[3] A sizable body of research shows positive relationships between state funding for higher education and student outcomes.[4] Higher education funding was partially protected during the coronavirus pandemic by a large influx of federal support,[5] but it may still take years for colleges

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[1] de Brey, C., Snyder, T. D., Zhang, A., & Dillow, S. A. (2021). *Digest of Education Statistics, 2019*. National Center for Education Statistics.

[2] Laderman, S., & Heckert, K. (2021). *State higher education finance: FY 2020*. State Higher Education Executive Officers Association.

[3] Delaney, J. A., & Doyle, W. R. (2011). State spending on higher education: Testing the balance wheel over time. *Journal of Education Finance, 36*(4), 343-368.; Delaney, J. A., & Doyle, W. R. (2018). Patterns and volatility in state funding for higher education, 1951-2006. *Teachers College Record, 120*(6), 1-42.

[4] Chakrabarti, R., Gorton, N., & Lovenheim, M. F. (2020). State investment in higher education: Effects on human capital formation, student debt, and long-term financial outcomes of students. National Bureau of Economic Research Working Paper 27885.; Deming, D. J., & Walters, C. R. (2017). The impact of price caps and spending cuts on US postsecondary attainment. National Bureau of Economic Research Working Paper 23736.; Monarrez, T., Hernandez, F., & Rainer, M. (2021). Impact of state higher education finance on attainment. Washington, DC: Urban Institute.

[5] Laderman, S., & Tandberg, D. (2021). *SHEEO analysis of fiscal year 2021 state funding for higher education*. State Higher Education Executive Officers Association.

to fully recover from the losses they incurred.[6] Changes to higher education funding have direct implications for closing longstanding attainment gaps by race, family income, and parental education.

States fund public colleges and universities primarily through two ways, direct appropriations and financial aid. Ninety percent of all state support for public higher education is through direct appropriations to colleges, but the share of funding allocated to student financial aid programs has risen steadily over the last two decades.[7] A large body of research examining how states fund higher education has focused on performance-based funding models, which still represent a small portion of funding in most states.[8] There have been a few efforts to provide snapshots of broader state funding or financial aid mechanisms,[9] but there has not been a systematic longitudinal analysis of state funding mechanisms and how they have changed over time.

In this research brief, we assess the following research questions:

1. How do states currently allocate funds to public two-year and four-year institutions?
2. How have these funding mechanisms changed over time?

Our research team collected the most up-to-date data on the mechanisms through which states and/or higher education agencies or systems allocated funds to public colleges and universities by examining state policy documents, including budgets, legislation, and audit reports, as well as higher education board reports, financial statements, and other documents. In total, our research team reviewed more than 2,000 documents related to state funding for higher education. To find historical documentation that was no longer available on active websites, we used the Internet Archive: Wayback Machine to track down older versions. To ensure accuracy in data reporting and coding, we met weekly as a research team to discuss data collection procedures and interpretations of documents. Finally, we reached out to higher education agencies within states to ask specific questions about data elements that remained unresolved after our data collection efforts.

Nine states have multiple funding models within a sector (seven at the four-year level and two at the two-year level). For example, California has two four-year systems (University of California and the California

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[6] Kelchen, R., Ritter, D., & Webber, D. (2021). *The lingering fiscal effects of the COVID-19 pandemic on higher education.* Federal Reserve Bank of Philadelphia Consumer Finance Institute Discussion Paper 21-01.

[7] Laderman & Heckert, 2021.

[8] Rosinger, K., Ortagus, J. C., Kelchen, R., Cassell, A., & Brown, L. (2021). *New evidence on the landscape and evolution of performance funding for higher education*. InformEd States.

[9] Custer, B. D., & Akaeze, H. O. (2021). A typology of state financial aid grant programs using latent class analysis. *Research in Higher Education, 62*, 175-205.; Layzell, D. T. (2007). State higher education funding models: An assessment of current and emerging approaches. *Journal of Education Finance, 33*(1), 1-19.; Mullin, C. M., & Honeyman, D. S. (2007). The funding of community colleges: A typology of state funding formulas. *Community College Review, 35*(2), 113-127.; Toutkoushian, R. K., & Shafiq, M. N. (2010). A conceptual analysis of state support for higher education: Appropriations versus need-based financial aid. *Research in Higher Education, 51*, 40-64.

State University) along with the two-year California Community Colleges. Among the 48 states captured for fiscal year 2021, there were 55 four-year systems and 51 two-year systems (105 total observations).[10] Due to a lack of information, we did not include Connecticut and New Hampshire in our data analysis for fiscal year 2021. For longitudinal data analysis for fiscal years 2004, 2008, 2012, 2016, and 2021, we excluded Connecticut and New Hampshire. Institutions in the Texas State Technical College System (TSTCS) were classified in 2010 as two-year institutions by the Carnegie classification system, so we included the system for 2012, 2016, and 2021. The longitudinal data includes 528 observations of states' four- and two-year systems.

Our dataset captures detailed information regarding the mechanisms and/or formulas through which states and/or higher education agencies or systems allocate funds. We first documented whether institutions received direct appropriations from the state or if the state designated money to the system to then allocate to institutions. For each sector/system, we included an indicator for whether the formula and/or mechanism the state and/or system used to allocate funds was *base+*, *performance*, *enrollment*, *research*, and/or *equity*. In a given year, states or systems may use more than one of these mechanisms to allocate funds to institutions. When systems used more than one mechanism, we coded this as a hybrid model with the specific funding mechanisms included in that hybrid model (e.g., base+, enrollment, and performance).

Table 1 shows a snapshot of how states allocated funding to public colleges and universities in fiscal year 2021. Below is a description of each allocation mechanism and the number of states or systems using that mechanism.

***Base+ Only:*** A pure Base+ system implies that institutions across a sector received a similar across-the-board percentage point increase/decrease in funding from the prior year's allocation. Currently, 11 four-year systems and three two-year systems use a Base+ Only model.

***Enrollment Only:*** An Enrollment Only model indicates funding depends on student enrollment levels at an institution and includes no protection of base funding levels. Often the funding differs by field and/or level of coursework and may use one or a combination of headcount or full-time equivalent (FTE) student enrollment. Five four-year systems and six two-year systems use an Enrollment Only funding model.

***Performance Only:*** A Performance Only model allocates all state funds for an institution based on performance metrics as outlined by the state or board. Only two two-year systems (the Ohio Association of Community Colleges and the Texas State Technical Colleges) use a Performance Only funding model.

[10] For the purposes of this analysis, we consider groups of institutions that are funded using the same model as a "system," even if they are not treated as a system for governance purposes. For example, we consider all four-year universities in Tennessee outside of the University of Tennessee system as a "system," even though they have independent governing boards.

***Base+Enrollment:*** This model is based on enrollment and involves a protected base or stop-loss provision that ensures institutions do not lose more than a certain amount of funds from the prior year's allocation. Under this model, HEIs primarily receive new monies through raising FTE/headcount enrollment or raising FTE/headcount enrollment relative to other institutions in that sector in the state. Eight four-year systems and 14 two-year systems use a Base+Enrollment funding model.

***Base+Performance:*** The state has a performance funding model, but there are stop-loss provisions that protect the vast majority of current funding. This means that money at stake under performance funding is primarily restricted to new state appropriations. Twelve four-year and seven two-year systems use a Base+Performance funding model.

***Enrollment+Performance:*** This funding model is based on a combination of enrollment and a HEI's performance on metrics outlined by the state and/or system. The institutions have no protected base or stop-loss provision. Three four-year systems and five two-year systems use an Enrollment+Performance funding model.

***Base+Enrollment+Performance:*** This funding model is based on a combination of enrollment and a HEI's performance on metrics outlined by the state and/or system and includes a protected base or a stop-loss provision. The HEIs have a protected base or a stop-loss provision. Four four-year systems and 11 two-year systems use a Base+Performance+Enrollment funding model.

***No Funding Formula:*** While states provide funding to HEIs, these sectors do not have a stated funding model that is used to allocate funds to HEIs. These states fall into one of two sets. The first set are states that allocate across-the-board increases to systems to meet inflation, salary, and insurance increases along with line-item funding of certain educational programs, research projects, and strategic initiatives. The second set of states provide no indication of any kind of Base+, Enrollment, or Performance funding measures in either a state's budget or coordinating board minutes. To determine that these sectors were *not* subject to Base+ funding (a common approach to higher education funding when no formula exists), we calculated year-to-year changes in funding levels. When finding funding levels from the state's general fund to differ by greater than one percentage point, we determined a Base+ model was not used. Twelve four-year systems and nine two-year systems have no discernable funding model in 2021.

***Equity Provisions:*** Equity provisions provide funding to HEIs outside of a traditional formula, typically based on institutional or student characteristics. Common equity provisions based on institutional characteristics included small size, rural, or traditionally under-resourced. Common equity provisions based on characteristics of enrolled students included the number/percentage of enrolled/graduated underrepresented minorities, Pell recipients, adult students or students with disabilities. Twenty-six four-year and twenty-five two-year systems engage in some kind of equity funding in the fiscal year 2021.

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***Research Provisions:*** Research provisions refer to whether the state offered a competitive research program through a state general fund or had research weights in their formula for the four-year sector. We did not include direct specific line-item research funding in this category because this funding tended to support specific research centers rather than focusing on increasing research capacity overall. In the fiscal year 2021, 11 four-year systems had some kind of research provision.

Table 1

## FY2021 State Funding Allocation

| | *Four-Year Institutions* | | | | | | | | | | | *Two-Year Institutions* | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| State | Direct HEI Funding | Base+ Only | Enrollment Only | Performance Only | Base+Enrollment | Base+Performance | Enrollment+Performance | Base+Enrollment+Performance | No Formula | Equity | Research | Direct HEI Funding | Base+ Only | Enrollment Only | Performance Only | Base+Enrollment | Base+Performance | Enrollment+Performance | Base+Enrollment+Performance | No Formula | Equity |
| AL | | | | | | | | | ✓ | ✓ | | | | | | | | | | ✓ | |
| AK | ✓ | | | | | | | | ✓ | | | | | | | | | | | | |
| AZ | ✓ | | | | | | | | ✓ | | ✓ | | | ✓ | | | | | | | ✓ |
| AR | ✓ | | | | | ✓ | | | | ✓ | | | | | | | ✓ | | | | ✓ |
| CA | | | ✓ | | | | | | | ✓ | | | | | | | | ✓ | | | ✓ |
| CA - CSU | | | | | ✓ | | | | | ✓ | | | | | | | | | | | |
| CO | ✓ | | ✓ | | | | | | | ✓ | ✓ | | | ✓ | | | | | | | ✓ |
| DE | ✓ | ✓ | | | | | | | | | | ✓ | | | | | | | | ✓ | |
| FL | ✓ | | | | | | | ✓ | | ✓ | | ✓ | | | | | | | ✓ | | |
| GA - USG | | | | | ✓ | | | | | | | | | | | ✓ | | | | | |
| GA - TCSG | | | | | | | | | | | | | | | | ✓ | | | | | |
| HI | ✓ | | | | | ✓ | | | | ✓ | | | | | | | | | ✓ | | ✓ |
| ID | ✓ | | | | ✓ | | | | | | | ✓ | | | | ✓ | | | | | |
| IL | ✓ | ✓ | | | | | | | | | | | | | | | | ✓ | | | ✓ |
| IN | ✓ | | | | | ✓ | | | | ✓ | | ✓ | | | | | ✓ | | | | ✓ |
| IA | ✓ | | | | | | | | ✓ | | | ✓ | | | | ✓ | | | | | |
| KS | ✓ | | | | | | | | ✓ | | | | | ✓ | | | | | | | |
| KY | ✓ | | | | | | | ✓ | | ✓ | | | | | | | | | ✓ | | ✓ |
| LA | ✓ | | | | ✓ | | | | | | | ✓ | | | | ✓ | | | | | |
| ME | | | ✓ | | | | | | | | ✓ | | ✓ | | | | | | | | |
| MD | ✓ | | | | | | | | ✓ | | | ✓ | | ✓ | | | | | | | ✓ |
| MA | | | | | | | | | ✓ | | | ✓ | | | | | ✓ | | | | ✓ |
| MA - Non-UMass | ✓ | | | | | ✓ | | | | ✓ | | | | | | | | | | | |
| MI | ✓ | ✓ | | | | | | | | | | ✓ | | | | ✓ | | | | | |
| MN | | ✓ | | | | | | | | | | | | | | | | | | | |
| MN - Minn State | | | | | ✓ | | | | | ✓ | ✓ | | | | | ✓ | | | | | ✓ |
| MS | | | | | | | | | ✓ | ✓ | | ✓ | | | | ✓ | | | | | |
| MO | ✓ | ✓ | | | | | | | | | | | | | | ✓ | | | | | |
| MT | | | | | | | ✓ | | | ✓ | | | | | | | | | ✓ | | ✓ |

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| | Four-Year Institutions | | | | | | | | | | | Two-Year Institutions | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| State | Direct HEI Funding | Base+ Only | Enrollment Only | Performance Only | Base+Enrollment | Base+Performance | Enrollment+Performance | Base+Enrollment+Performance | No Formula | Equity | Research | Direct HEI Funding | Base+ Only | Enrollment Only | Performance Only | Base+Enrollment | Base+Performance | Enrollment+Performance | Base+Enrollment+Performance | No Formula | Equity |
| NE | | | | | | | | | ✓ | | | | | | | ✓ | | | | | |
| NV | | | | | | | ✓ | | | ✓ | | | | | | | | ✓ | | | ✓ |
| NJ | ✓ | | | | | ✓ | | | | ✓ | | | | ✓ | | | | | | | |
| NM | ✓ | | | | | ✓ | | | | ✓ | | ✓ | | | | | ✓ | | | | ✓ |
| NY- CUNY | ✓ | ✓ | | | | | | | | | | | | | | ✓ | | | | | |
| NY- SUNY | ✓ | | ✓ | | | | | | | ✓ | ✓ | | | | | ✓ | | | | | |
| NC | ✓ | | | | ✓ | | | | | | ✓ | | | | | | | | ✓ | | ✓ |
| ND | ✓ | | | | | ✓ | | | | | ✓ | ✓ | | | | | ✓ | | | | |
| OH | ✓ | | | | | | ✓ | | | ✓ | | ✓ | | | ✓ | | | | | | ✓ |
| OK | | ✓ | | | | | | | | | ✓ | | ✓ | | | | | | | | |
| OR | ✓ | | | | | ✓ | | | | ✓ | ✓ | | | | | | | ✓ | | | ✓ |
| PA | ✓ | ✓ | | | | | | | | | | ✓ | | | | ✓ | | | | | |
| PA - PASSHE | ✓ | | | | ✓ | | | | | ✓ | | | | | | | | | | | |
| RI | ✓ | | | | | ✓ | | | | ✓ | | ✓ | | | | | ✓ | | | | |
| SC | ✓ | | | | | | | | ✓ | | | | | ✓ | | | | | | | ✓ |
| SC - USC CCs | | | | | | | | | | | | ✓ | | | | | | | | ✓ | |
| SD | ✓ | | | | | | | | ✓ | | | | | | | ✓ | | | | | |
| TN | ✓ | | | | | ✓ | | | | ✓ | ✓ | | | | | | | | | | |
| TN - SUCCS | ✓ | | | | | ✓ | | | | ✓ | | ✓ | | | | | ✓ | | | | ✓ |
| TX | ✓ | | | | ✓ | | | | | ✓ | ✓ | ✓ | | | | | | | ✓ | | ✓ |
| TX-TSTC | | | | | | | | | | | | | | | ✓ | | | | | | ✓ |
| UT | ✓ | | | | | | | ✓ | | ✓ | | ✓ | | | | | | | ✓ | | |
| VT | ✓ | ✓ | | | | | | | | | | | | | | | | | | | |
| VT - VSCS | | | | | | | | ✓ | | | | | | | | | | | ✓ | | |
| VA | ✓ | | ✓ | | | | | | | | | | | | | | | ✓ | | | ✓ |
| WA | ✓ | | | | | | | | ✓ | | | | | | | | | | ✓ | | ✓ |
| WV | | ✓ | | | | | | | | | | | ✓ | | | | | | | | |
| WI | | | | | | ✓ | | | | ✓ | | | | | | | | | ✓ | | ✓ |
| WY | ✓ | ✓ | | | | | | | | | | | | | | | | | ✓ | | |

Direct funding refers to the state having direct appropriations to the HEIs themselves as opposed to a system coordinating or governing board. Due to the lack of data, Connecticut and New Hampshire are not included in the chart. In states with multiple systems, we consider the flagship system as the main four-year or two-year system. The following state-system dyads represent the secondary system: California-California State Universities, Georgia-University System of Georgia, Massachusetts-Non-University of Massachusetts, Minnesota-Minnesota State Universities and Colleges, Pennsylvania-Pennsylvania State System of Higher Education, South Carolina-University of South Carolina Community Colleges, Tennessee-Non-University of Tennessee, Texas-Texas State Technical College, and Vermont-Vermont State College System.

Figure 2 details how funding mechanisms changed across time among four- and two-year systems. Below are several trends we observed from the data collection across fiscal years 2004, 2008, 2012, 2018, and 2021.

***Hybrid Models:*** In 2004, 14 four-year and 14 two-year systems had funding models that included a combination of Base+, Enrollment, and/or Performance models. By 2021, 27 four-year and 37 two-year systems used a hybrid model for funding their higher education system. In the two-year sector, the emergence of hybrid models coincided with a widespread decrease in the use of Base+ Only and Enrollment Only funding models. While 32 two-year systems used either Base+ Only or Enrollment Only funding models in 2004, only nine two-year systems used one of the two in 2021. The four-year sector's transition to hybrid models occurred at a slower pace. The number of four-year systems operating under a Base+ Only, Enrollment Only, or No Funding Formula dropped from 41 in 2004 to 28 in 2021. The transition to hybrid funding models across both sectors was primarily driven by the adoption of performance funding. In 2004, five four-year systems and four two-year systems had a performance-based component to their funding model. In 2021, 19 four-year and 25 two-year sectors had performance funding.

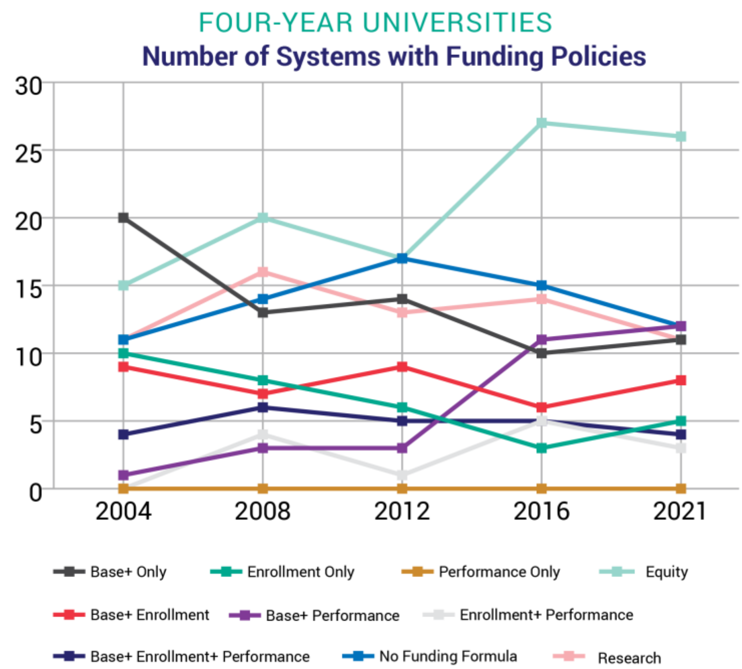
***Reliance on Enrollment Funding:*** Throughout the time period we observed, around 60 to 70% of two-year systems had an enrollment component to their funding model. Within the four-year sector, the percent of systems with an enrollment component decreased from a high of 45% in 2008 to 36% in 2021. Of the four-year systems subject to separate funding models within a state, largely made up of regional comprehensive and minority-serving institutions, nearly 60% are under some form of enrollment funding model.

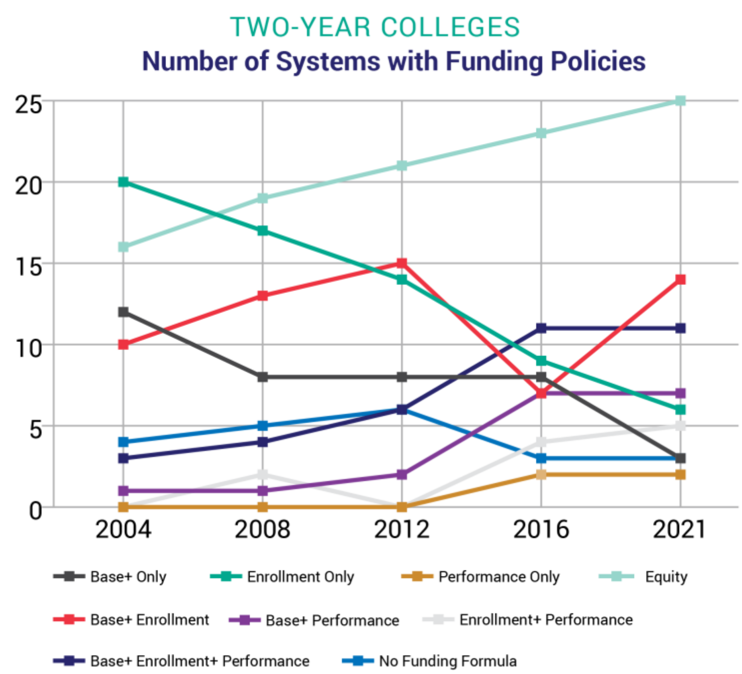
***Different Funding Models Emerging By Sector:*** In fiscal year 2004, 30 of the 47 states profiled had similar funding models for both the four- and two-year sectors. By 2021, the number dropped to 17 states. While the most common funding mechanism for the four-year sector was either a Base+ Only or No Funding Formula throughout the period we observed, hybrid systems emerged as the most common source of two-year sector funding.

***Expansion and Contraction of Research and Growth in Equity Provisions:*** Expanding from 11 in 2004 to 16 in 2008 and contracting back down to 11 by 2021, the number of four-year systems experienced some volatility in research provisions. Rising from 16 in 2004 to 2021 in 2021, there was a steady increase in adoption of equity provisions of 2 to 3 new two-year systems every four years. Among four-year systems, there was more volatility in equity provisions. The number of systems grew from 15 to 20 between 2004 and 2008, ultimately dropping back down to 17 in 2012. By 2016, the number jumped to 27 and has remained close to that number since. A key factor in the increase in both sectors has been the adoption of performance-based equity provisions. In 2004 only 2 four-year and no two-year sectors had PBF equity. By 2021, the number was 17 and 19 systems, respectively.

***Direct Appropriations to HEIs:*** With the exception of New York switching from awarding funding to the City University of New York as a system to awarding funds to individual institutions and the inclusion of the Texas State Technical College System in 2012, 39 four-year systems and 23 two-year systems had line-item funding measures from the states directly to the HEIs throughout the panel. This means that two-year HEIs were more reliant on governing or coordinating boards to determine their funding outcomes and that direct appropriations systems largely remained direct appropriations systems.

Figure 2



This brief offers a detailed overview of how states and higher education systems allocate funding to public colleges and universities and how funding mechanisms have changed over time. We find growth in the number of "hybrid" funding models that incorporate enrollment, performance, and/or prior year allocation (base+) considerations in both the two- and four-year sectors. At the same time, funding formulas with a student enrollment component remained the predominant funding mechanism in the two-year sector. We find a decreasing number of four-year systems with funding provisions aimed at improving the research capacity of institutions since the Great Recession. Throughout the period we found widespread growth in the inclusion of equity measures among both two- and four-year systems. Even so, only half of all systems include some

As states face budget challenges in the coming years, these funding mechanisms could serve to either protect higher education institutions from the worst cuts or place them in increasingly vulnerable positions when it comes to state funding.[11] If the latter happens, inequities in funding across institutional types are likely to be exacerbated. For instance, undergraduate institutions, particularly community colleges, have seen enrollments decrease during the coronavirus pandemic and resulting recession.[12] If these trends continue, community colleges that are funding solely on enrollment without significant base funding protections and equity provisions may face budget cuts absent state efforts to provide more equitable funding.

In a future brief and paper, our research team will examine how various mechanisms for funding public colleges and universities relate to college access and student success, particularly among historically underserved students such as racially minoritized and low-income students. This research will offer insight into how states can design funding models for higher education that reduce longstanding inequities in educational attainment by race and family income.

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[11] National Association of State Budget Officers (2020). The fiscal survey of states: Fall 2020. Author.

[12] National Student Clearinghouse. (2021, June 10). Current term enrollment estimates. Author. Retrieved from https://nscresearchcenter.org/current-term-enrollment-estimates/.