

DESIGNING HIGHER EDUCATION FUNDING MODELS TO PROMOTE STUDENT SUCCESS:

An introduction to “capacity building”
and “equity-based” funding principles

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Supplementary Materials



Resource Guide: Key literature on the impacts and distribution of financial resources for higher education institutions.

INTRODUCTION AND PURPOSE

It is well understood that the distribution of household income in the United States is highly unequal. The wealthiest 20% of households take home 52% of all income, while the poorest 20% take home 3% of all income (Guzman & Kollar, 2023). Black and Hispanic households have disproportionately lower incomes than white households (Guzman & Kollar, 2023). These disparities do not stop at household income and can be found in nearly every dimension of public life including our education systems. In higher education, wealth is concentrated among a relatively small number of colleges and universities that tend to serve students from the highest-income backgrounds (Chetty et al., 2020; B. Taylor & Cantwell, 2019). Meanwhile, the nation's least-resourced institutions typically admit all who apply and, as a result, enroll the lion's share of students. Further, students from low-income backgrounds and students of color are disproportionately enrolled in these open-access institutions (Posselt et al., 2012).

These disparities create a paradox in higher education. On one hand, the nation's least-resourced institutions disproportionately serve students who have traditionally been underserved by our nation's K-12 education systems long before entering college. With fewer resources to meet their students' full range of needs, the nation's least-resourced institutions often have lower graduation rates. On the other hand, the nation's most well-resourced institutions tend to enroll students from the most privileged backgrounds and—by selecting students who require the least support in the first place—have the highest graduation rates (Chetty et al., 2023). This results in a backwards funding system where students with the *least needs* attend colleges that spend the *most* on their education. Vice versa, students with the *greatest needs* tend to be concentrated in colleges with the *least* resources to meet those needs (Kahlenberg et al., 2018).

Public policymakers are increasingly concerned about this paradox for several reasons. For example, the ability for colleges to improve various student success outcomes (e.g., retention, degree completion, etc.) is directly linked to the amount of funding they receive in state appropriations (Laderman, 2022). When funding declines, colleges spend less on core educational expenses including instruction and academic support (Deming & Walters, 2018). Since many of these institutions serve students from lower-income backgrounds, these spending cuts cannot easily be passed onto students in the form of higher tuition. To meet state or national college completion goals, and to close completion gaps among various student groups, funding disparities need to be addressed (Long, 2016).

States and the federal government are also concerned about these funding disparities because of their disproportionate impacts on Minority Serving Institutions (MSIs). For example, Historically Black Colleges and Universities (HBCUs) receive less funding from state governments than Predominantly White Institutions (PWIs; Sav, 2000, 2010; D. A. Smith, 2021). Hispanic Serving Institutions tend to get more federal funding when they enroll more white students (Arellano et al., 2022; Vargas, 2018). Federal grants tend to favor well-resourced institutions and PWIs (McCambly & Colyvas, 2022; Taffe & Gilpin, 2021). And state performance-based funding formulas have been found to disproportionately harm MSIs and their students (Hillman & Corral, 2018; Ortagus, Rosinger, Kelchen, Chu, et al., 2023). Multiple

states have settled racial discrimination lawsuits where funding models have played—and continue to play—a central role in these cases (M. Brown, 1999; W. Brown & Burnette, 2014; Harris, 2021).

While there is growing research and public policy interest in funding disparities and their effects on students, a major unanswered question is “how” states and the federal government might go about addressing these disparities. For example, researchers are exploring how the K-12 funding concept of “adequacy” can be used to address funding disparities among community colleges (Levin et al., 2022). Similarly, researchers have developed frameworks to determine the minimal (“foundational”) level of state funding necessary to meet state and student needs (Koch & Prescott, 2021).

Our work, and what follows in this report, complements and aims to advance these efforts. We acknowledge there is no single strategy that will universally “fix” all the funding disparities at once. We also acknowledge there are multiple ways of understanding, measuring, or addressing funding disparities. Our goal in this report is to synthesize academic research and theories to help explain “why” money matters in higher education and “how” policymakers can address funding disparities in meaningful ways (see Resource Guide and Appendices for summaries). The report is organized into three sections. First is an overview of “capacity” in higher education finance, where we explain the role finances play in supporting student success. This section introduces key definitions and a conceptual framework that can help researchers and policymakers explain why money matters in higher education. Second is a brief overview of the funding models states and the federal government use when allocating resources to colleges and universities. These funding models are both the reason for existing funding disparities and are the avenues for addressing disparities now and in the future. The third section provides an overview of “equity-based” approaches states and the federal government can use (or in some cases have used) to address funding disparities. State and federal funding models that incorporate equity-based funding principles are likely to help address funding disparities and create a fairer and more effective system of higher education finance.

SECTION 1: DEFINING AND CONCEPTUALIZING “CAPACITY” IN HIGHER EDUCATION FINANCE

Defining “capacity” in higher education finance

To understand how funding disparities affect students, we need to start with some brief definitions and a guiding framework. We also must acknowledge not all colleges have the same mission and, as a result, their funding models will differ according to their academic, social, and educational goals. Regardless of the specific mission or type of college, every institution will use financial resources (from various sources) to cover basic operating expenses including hiring faculty and staff, purchasing technology and equipment, maintaining their physical spaces, and paying for utilities (D. O. Smith, 2019). Institutions will also be organized into relevant departments, administrative units, or other structural arrangements necessary to operate. These arrangements will be codified into policies and procedures to govern how the institution operates. Together, these account for the various human, organizational, structural, and material resources that are necessary for operating a college. These resources represent the institution’s “**capacity**” to carry out its educational mission, as summarized in Table 1 (Century, 1999).

TABLE 1

Types of Institutional Capacity

TYPES OF INSTITUTIONAL CAPACITY	EXAMPLES IN PRACTICE
Human capital	Personnel with the appropriate knowledge, expertise, and abilities to carry out their responsibilities
Organizational capacity	How individuals in the institution collaborate and communicate internally and externally
Structural capacity	Institutional policies, procedures, and practices codified or adopted as norms
Material capacity	Financial resources, physical space, technological resources necessary to deliver education and other services

Institutional capacity is not a singular asset that institutions either have or do not have (Lee & Kuzhabekova, 2019); rather, all institutions have multiple capacities that are shaped over time by internal (e.g., leadership, resources, etc.) and external (e.g., state or federal policies) factors. These factors will affect different institutions differently. Nevertheless, all institutions participate in capacity building efforts in their daily routines, where employees leverage various resources to fulfill their organizational objectives (Light, 2004).

Consider the role of academic advising, a standard practice among institutions of higher education. To implement an effective academic advising office, institutions must hire and train professional staff who carry out any number of responsibilities. Two colleges may have the same goal of providing high-quality academic advising to students, but they may have quite different capacity to reach those goals. One institution might have high advising loads where advisors only meet with students once or twice per year and no software systems in place to monitor student progress. Another institution may have entire advising teams networked across campus using leading-edge software to stay in constant communication with students. These two institutions may share the same goal of supporting students, but the first has limited capacity and may struggle to meet this goal while the second will be in a much greater position to do so.

The advising example represents just one way an institution's capacity affects how (and how well) the institution conducts its work. Importantly, the concept of "capacity" extends far beyond this example and is relevant to every aspect of the institution from administering financial aid and delivering instruction to conducting research and public service. Finances and other material capacities are a major resource that institutions need to conduct their work supporting students. But given the paradox mentioned earlier, institutions with the *least* capacity will be hard-pressed to improve student outcomes while those with the *greatest* capacity will not. The following section explains why this is the case and how state and federal funding policies can address this paradox.

A framework for linking capacity to student outcomes

Similar to K-12 research, there is growing consensus that "money matters" in higher education. Much of this evidence focuses on student financial aid programs where, on average, providing \$1,000 in additional grant or scholarship aid to students can boost their enrollment rates by 1.5 to 2 percentage points (T. Nguyen et al., 2019). A growing body of evidence finds similar positive relationships between student outcomes and their college's own financial resources. For example, studies have found colleges receiving increases in state appropriations have stronger bachelor's degree completion rates (Bound et al., 2019; Chakrabarti et al., 2020; Deming & Walters, 2018; Titus, 2006; Zhang, 2009). Similarly, when colleges increase their per-student expenditures, they typically see increases in student outcomes such as retention, degree-completion, and time-to-degree (Crisp et al., 2018; Gordon et al., 2021; Pike & Robbins, 2020; Webber, 2012; Webber & Ehrenberg, 2010). Importantly, a college's financial resources aren't just an important factor in promoting student success—they are one of the *most important* factors, particularly among the nation's least-resourced institutions (Bound et al., 2012; Bound & Turner, 2007).

The literature establishing "money matters" includes mostly work on finance and policy, where studies typically examine trends in funding differences (e.g., Cheslock & Shamekhi, 2020) or the impact of funding on various outcomes (e.g., Deming & Walters, 2018). This body of literature typically applies economic theories and measures *whether* finance is related to various outcomes. However, this literature does not typically seek to answer *why* funding differs or *how* funding affects student outcomes. Without understanding the *why* and *how*, we may advocate for allocating more resources to institutions without enough clarity on the link between an institution's financial resources and student outcomes.

To understand how colleges affect student experiences and outcomes, we turn to a second body of research from student affairs and organizational change theory (e.g., Kezar, 2018; Mayhew et al., 2016). In unifying finance and policy literatures with student affairs and organizational theory literatures, we can clearly see how “capacity” is the link through which financial resources allow institutions to successfully graduate students and produce any number of additional outcomes.

Institutional **capacities** affect how—and how well—colleges are able to design and implement various **programs and practices** to support students. Every institution will have its own unique set of programs and practices including such functions as instruction, assessment, financial aid, strategic planning, academic affairs, student health services, etc. Regardless of the specific program/practice occurring on campus, each will be directly affected by institutional capacity. The totality of an institution’s programs and practices shape the learning environment for students. This **learning environment** is not only what happens inside the classroom, but also includes co-curricular experiences, faculty and staff interactions, peer interactions, and the overall campus climate.

Ultimately, these learning environments—which are shaped by institutional capacity, programs and practices, and external forces—will shape **students’ experiences and outcomes**. We define student outcomes broadly, including administrative metrics like retention and degree completion, but also identify formation, skill development, social networking, belonging, and learning.

When resources are constrained, capacities are constrained, and this creates a ripple effect on the rest of the institution that ultimately affects students.

Figure 1 provides a unifying framework linking each of these concepts to help illustrate *why* and *how* a college’s capacity (and financial resources, specifically) can affect students. Instead of funds going to an institutional “black box,” Figure 1 helps show the link between funding and outcomes. Financial resources allow colleges to sustain and develop capacities, and colleges use these capacities to produce student outcomes. When resources are constrained, capacities are constrained, and this creates a ripple effect on the rest of the institution that ultimately affects students. And just the opposite, finances can enhance capacity and this can result in positive ripple effects to promote positive student outcomes. And these capacities do not develop in a vacuum, they are also shaped by broader social and political contexts external to the institution. Figure 1 shows these dynamics and helps link resources to outcomes, noting each individual interacts with their environments in distinct ways (Bronfenbrenner, 1979; Heck et al., 2014; McLendon et al., 2009).

FIGURE 1

How a College's Capacities Affect Student Outcomes



This framework is useful for describing how institutions use financial resources to improve student outcomes, which is critical for justifying state and federal investment in higher education. As policymakers and institutional leaders seek to improve specific student outcomes, this framework can be used to work backward from the outer layer toward understanding what resources will be needed for institutions to improve student outcomes. This prompts outcome- and process-oriented questions like: What *student experiences and outcomes* does our institution seek to achieve and for whom? What, if anything, needs to change about the *learning environments* to produce these results? What institutional *programs and practices* positively affect the learning environment? What capacity is needed to implement these programs and practices? What *level of financial resources* are needed to develop these capacities?

Identifying specific programs and practices or learning environments that are effective at improving student outcomes—and in particular effective at decreasing disparities for students from low-income backgrounds and students of color—is beyond the scope of this project, but are documented in the student affairs and organizational theory literatures (e.g., Bensimon, 2005; Britton et al., 2022; Garcia, 2019; Johnson & Winfield, 2022; Kim et al., 2023; Mayhew et al., 2016; McNair et al., 2020; M. Nguyen et al., 2018).

SECTION 2: HOW STATES AND THE FEDERAL GOVERNMENT FUND COLLEGES

When states or the federal government provide funding to colleges and universities, they affect each institution's capacity to serve students. What are some of the most common approaches states and the federal government take when allocating funds to institutions of higher education? Answering this question helps pinpoint the policy levers states or the federal government can use to address funding disparities in higher education. We acknowledge there is a lot more to this question than the current report can answer. For example, institutions receive funds from other sources far beyond state and federal governments. Tuition, auxiliary enterprises, and endowments all provide revenue to help institutions meet their expenses and deliver their missions (D. O. Smith, 2019). We also recognize state and federal financial aid is both a critical resource and driver of student success. However, financial aid only goes to institutions indirectly when students either have tuition balances or other outstanding expenses (e.g., on-campus housing, meal plans, etc.). Our interest is in funding models that support institutions directly, so our focus is on state appropriations and federal program grants.

Every institution will have its unique mix of revenue streams, sometimes with greater (or less) reliance on state or federal funds (Laderman, 2022). As noted in the introduction, many of the nation's least-resourced institutions stand to benefit the most from state or federal funding since they often have limited capacity to create or build large tuition bases, auxiliary enterprises, or endowments (B. Taylor & Cantwell, 2019). Context on allocation models can help researchers and policymakers pinpoint specific strategies to address funding disparities in higher education. For example, some states may find it more compelling to address disparities via a performance-based formula while others may address them via base funding allocations, as described in more detail below.

State approaches to funding

The majority of state funding for higher education supports general operating expenses and maintenance. When states allocate funds for these purposes, they use several different models. These models—and the amount of money flowing through them—can change each year and are difficult to document without extensive field work in states. In 2021, the State Higher Education Executive Officers (SHEEO) and National Center for Higher Education Management Systems (NCHEMS) conducted this field work and surveyed all states to develop baseline definitions of how they allocate funds to institutions (Laderman et al., 2022). Table 2 displays their results, where there are five distinct approaches: base-plus funding, input-driven formulas, performance-based formulas, institutional requests, and special purpose funding.

TABLE 2

Summary of State Funding Allocation Models

ALLOCATION MODEL	EXAMPLES
Base-Plus	Establishes “base” amount of funds from prior year(s) and adds or subtracts a negotiated amount for current year funding.
Input-Driven Formula	Ties funds to calculations based on enrollments, instructional activity, space utilization, and other inputs.
Performance-Based Formula	Ties funds to calculations based on degree completions, time-to-degree, credit hours completed, and other outputs.
Institutional Request	Institutions request base budget changes directly to state budget authority; these changes differ for each institution.
Special Purpose Funding	Funds directed to state priority areas or to support certain academic programs or missions; often done on non-recurring basis.

Each state designs its allocation model in light of various goals, histories, and contexts meaning no single state has the same exact approach to funding its higher education institutions. Nevertheless, a common thread across all states is these funding allocation models are subject to political negotiations and have direct implications on how scarce financial resources are allocated to institutions.

Most funding (approximately 60% nationwide) is allocated via either **base-plus models** or **institutional requests**. Under these models, funding is tied to historical trends and/or political negotiations that can play to the advantage of institutions with the greatest influence and resources. When these advantages go unchecked, this can result in greater disparities where rich colleges get richer and poor get poorer (Winston, 2004). To avoid this risk, states could conduct “equity audits” common in K-12 finance to ensure institutions with the greatest needs have sufficient resources to meet those needs (Laderman, 2022).

To address these potential concerns, and to bring a degree of transparency into the funding allocation process, some advocates see formula-driven models as a solution. **Input-based** formulas are most common in the public two-year sector (e.g., CA, IL, PA, SD) where states allocate funds based on such indicators as enrollments, instructional activity, and space utilization. Under **performance-based** formulas, which states use in both two-year and four-year sectors (e.g., KS, OH, TN, TX), funds are tied to measurable outputs like the number of degrees awarded, time-to-degree, or credit hours students earn each year. According to SHEEO (2022), approximately 30% of total state higher education flows through two types of formula-driven models.

Importantly, formula-driven models are not immune from historical trends or political negotiations. In fact, performance management scholars have found formulas only give the illusion of objectivity since the decision of *what* to measure and *how much* weight to assign in each calculation is socially constructed and still based on political negotiations (Moynihan, 2008; Radin, 2006). Furthermore, formulas can easily create disparities if the institutions performing “best” are those that already have the greatest resources or advantages—advantages will beget advantages in these situations (Birdsall, 2018; Ortagus, Rosinger, Kelchen, Chu, et al., 2023). There are also concerns about the effect of funding formula on MSIs. HBCUs in particular may compromise their mission to achieve performance metrics and face unfair competition against PWIs (Boland, 2016). To guard against these concerns, policymakers could monitor, calibrate, and re-weight formulas to ensure the models do not reproduce or widen existing funding disparities.

Furthermore, formulas can easily create disparities if the institutions performing “best” are those that already have the greatest resources or advantages.

The final type of funding accounts for a relatively small share (about 10%) of total state higher education funding and, as the name implies, is used for **special purpose** funding. Similar to institutional requests, special purpose funds are negotiated or bargained through political processes that may often be tied to state goals. These funds would be at the discretion of state policymakers’ priorities and are typically set aside for one-time use. An institution with the greatest needs may be able to secure special purpose funds, but they are likely to be relatively small and not sustained over time; alternatively, institutions with the greatest resources may get these funds irrespective of need, particularly as well-resourced institutions are more likely to have lobbyists and strong government relation infrastructure.

In practice, all of these funding allocation models interact with one another, and states use any combination when allocating money to institutions. These funding models are not mutually exclusive but instead provide a menu of approaches states can use when allocating resources. There is no natural law governing how states allocate funding and, as a result, each state adapts their allocation model according to their political, economic, and educational goals and constraints. Each of these decisions has the potential to either address or reinforce existing funding disparities, suggesting each approach could benefit from applying equity-based frameworks described in Section 3 to measure, monitor, and evaluate disparities in current state funding models.

Federal approaches to funding

Similar to states, federal funding for higher education takes many forms and each agency has distinct goals, histories, and contexts guiding their funding models. Regardless of the agency, most federal funds are awarded on a competitive basis that requires institutions to first submit a proposal and then, based on such factors as available funds and peer review scores, federal agencies determine which proposals to fund. The majority of federal funds are awarded through four departments/agencies: Department of Health and Human Services, Department of Education, the National Science Foundation, and the Department of Energy (U.S. Department of the Treasury, 2023). Regardless of the funding agency, federal grants are generally allocated via five models outlined in Table 3.

TABLE 3
Summary of Federal Funding Allocation Models

ALLOCATION MODEL	EXAMPLES
Research grants	Awards to support the equipment, staff, or other resources needed to conduct applied or basic research.
Program grants	Awards to support the activities, staff, or other resources needed to develop or implement education programming.
Formula grants	Award amounts are determined by calculations using weights or other methods.
Matching grants	Awards are subject to additional financial support from non-federal sources.
Congressionally directed spending	Awards are negotiated and determined by individual members of Congress (i.e., earmarks).

Each of the allocation models use multiple criteria to determine eligibility. **Research grants** and **program grants** are the two most common allocation models federal agencies use when awarding institutions of higher education. Research grants are typically awarded on a competitive basis where researchers submit proposals to federal agencies; these agencies then conduct peer reviews to determine which proposals to ultimately fund. Depending on the agency and the project, research grants could be for a single year or multiple years and in some cases are renewable over time. Institutions typically receive a portion of the grant for administration. Program grants are awarded through similar competitive processes and are subject to discretionary funds and time constraints; however, program grants are designed to help institutions develop, implement, or in some cases bring to scale educational programming, instruction, or services distinct from research. The Department of Education's (ED) Strengthening Institutions Program (SIP) for minority-serving institutions is an example of a program grant while ED's Institute of Education Sciences awards research grants (Samayoa, 2022).

Formula grants and **matching grants** are distinct from other grants because they are either non-competitive (i.e., awarded via formulas) or they require financial support from non-federal agencies (i.e., state matching grants). Formula grants are allocated based on eligibility criteria typically determined by legislation or regulation and, through the calculation, funds are allocated directly to institutions. For example, the Higher Education Emergency Relief Funds (HEERF) program authorized by the CARES Act provided funds to institutions based on an enrollment formula. When institutions opted into receiving HEERF funds, ED allocated the amount derived by the formula (U.S. Department of Education, 2020). Matching grants can also be derived through formulas or a competitive review process but are distinct because they require some matching support beyond what the federal agency provides. For example, the Department of Agriculture's National Institute of Food and Agriculture (NIFA) supports agricultural sciences for 1890 Land Grants Universities. Part of the funding includes state matching grants, requiring states to make one-to-one matches to their 1890 institutions (i.e., HBCUs), though states have not fulfilled their commitments over several decades (U.S. Department of Education, 2023b).

Finally, **congressionally directed spending** (or "earmarks") are non-competitive awards negotiated by individual institutions and elected officials. These discretionary awards can support a wide range of initiatives and are allocated at the request of members of Congress. Members of Congress can make these requests based on rules that are separate from the processes outlined above (U.S. Senate Committee on Appropriations, 2023). Congressionally directed spending is typically for one-time (non-recurring) allocations designated for specific projects in the requesting member's district.

An institution with limited capacity may not apply or may have a less competitive application than well-resourced institutions. To the extent this occurs, advantage can beget advantage in competitive federal awards.

Across each of these five different federal funding allocation models, institutions may be in stronger positions to compete for these funds. For example, if an institution has sufficient resources and expertise to secure funds for one year, then it may continue to do so in subsequent years. And just the opposite, an institution with limited capacity may not apply or may have a less competitive application than well-resourced institutions. To the extent this occurs, advantage can beget advantage in competitive federal awards. The following discussion offers strategies states and the federal government can use to guard against these potential disparities.

SECTION 3: DEFINING AND CONCEPTUALIZING “EQUITY” IN HIGHER EDUCATION FINANCE

The prior sections focused on the role of financial resources in supporting student success and strategies states and the federal government use to build institutional capacity. Our prior discussion (and the attached Resource Guide) provide evidence that funding disparities often have negative effects on students, particularly among colleges serving the majority of students from low-income backgrounds and students of color. When states or federal agencies identify a link between funding disparity and unequal student outcomes, they may become interested in policy solutions to address these problems. But how?

This section outlines one promising answer, where state and federal policymakers could use an “equity-based” approach to higher education funding. The term “equity” may heighten political sensitivities in some states, though it is a concept that has a long history in K-12 education finance (Kolbe & Baker, 2019; Romano & Palmer, 2023). This term may also raise questions among academics who are concerned the term is over-used or poorly-defined when used in education research. To address these concerns, we first provide a working definition of “equity” as it applies to higher education finance. We then introduce ten “design principles” that, when applied to funding models, can help address funding disparities and support student success.

Defining equity in higher education finance

Because we are primarily concerned about how state and federal funds are distributed among institutions of higher education, our definition of “equity” focuses on *resource allocation* (Levinson et al., 2022). Are resources equally distributed across institutions? If not, why? Does financial inequality create disadvantages for certain institutions and their students? What are the consequences of these disadvantages? How can policymakers redesign funding models to address these inequalities? These are the kinds of questions that can emerge from applying an equity lens to higher education finance (Bensimon, 2005).

[Click here to view](#) a summary of the design principles described in this section (PDF).



These questions are difficult to answer. For example, researchers might use a single statistic such as the Gini index to measure whether financial inequality exists (e.g., Cheslock & Shamekhi, 2020), but inequality does not necessarily indicate inequity. There are potentially justifiable reasons for inequalities across institutions, such as mission differentiation and costs. Similarly, just because an institution has fewer resources does not necessarily mean it fails to adequately support students. There is no single way to measure inequity. Likewise, the policy strategies for addressing inequity may vary considerably depending on how someone views the problem and their political beliefs. The distribution of funding is a particularly strong expression of values and priorities. Accordingly, any discussion of inequity in the area of higher education finance will combine evidence, values, and politics in ways that can make it difficult to find shared understanding and agreement.

To help navigate these questions, and to provide clarity on our use of the term “equity,” we draw largely from the National Academies of Science, Engineering and Mathematics’ definition. Their definition focuses on how well aligned financial resources are to the needs of students, where resources are “not distributed equally but instead are provided to the most underserved to compensate for different starting points in life” (National Academies of Sciences, Engineering, and Medicine, 2019). As described by Dr. Stella Flores, a member of the National Academies’ working group, inequity refers to “situations in which differences in need are not properly accounted for, considered, or mitigated” by public policies (Flores, 2022, p. 6). As a result, inequities can have harmful effects on entire groups of people “often tied to income, race, language, and in some cases immigration status” (Flores, 2022, p. 6).

In the context of the financial resources of colleges, equity-based funding can be viewed as a process of ensuring colleges have sufficient resources to meet students’ needs and compensate for funding disparities. More specifically, we are concerned that the least-resourced institutions tend to enroll the greatest shares of students from low-income backgrounds and students of color. These student populations are often considered as having greater need—not because of any inherent deficit, but due to systemic inequities in K12 education and legacies of racism and classism built into institutions of higher education. To prioritize the needs of these student populations, we focus on two forms of inequity in higher education finance.

Equity-based funding can be viewed as a process of ensuring colleges have sufficient resources to meet students’ needs and compensate for funding disparities.

The first applies the economic concept of “vertical equity” (Dowd et al., 2020), where governments allocate financial resources based on some measure of need. More specifically, vertical equity allocates more financial resources to individuals (or institutions) facing the greatest economic disadvantages. By providing the most to those with the least, vertical equity is not only a strategy to remedy inequity but can also be an efficient use of resources where “money matters” more for those with the least. This principle has a long history in higher education finance, where most of the nation’s state and federal financial aid programs are “need-based” and award scarce financial aid dollars to students from the lowest-income backgrounds (e.g., federal Pell grants).

The second approach is a civil rights-based definition of equity. Title VI of the Civil Rights Act prohibits racial discrimination in any program receiving federal funding (Civil Rights Act of 1964, 1964); however, many of the nation’s least-resourced colleges and universities enroll disproportionately large shares of students of color (Hillman, 2020). State policymakers have waived the matching grant requirements for public HBCUs under the federal National Institute of Food and Agriculture land grant program (i.e., 1890 land grant colleges) while continuing to provide matching funds for predominantly white land-grant institutions (i.e., 1862 land grant colleges), resulting in large funding inequities by race (Harris, 2021; D. A. Smith, 2023; U.S. Department of Education, 2023b). Several federal grant programs are designated for

strengthening the capacity of Minority Serving Institutions, where eligibility for funding is tied to both the amount of financial resources of a college and whether they serve sufficiently large shares of students of color.

Notably, our conceptualization of equity can be at odds with other conceptualizations (Levinson et al., 2022). For example, even if resources were allocated more equitably, this would not necessarily address other forms of inequity. A poorly-resourced college may receive more funds due to a policy change, but if it does not use these funds to improve students' outcomes, experiences, or learning growth, then inequities may persist. For this reason, "multidimensional reforms rather than a single metric for redistribution" (Levinson et al., 2022, p. 8) hold the greatest promise for addressing deeply-rooted inequalities. Financial resources are a central and powerful—yet certainly not the only—force shaping various inequities in our educational systems. Additionally, our conceptualization of "equity" may not go far enough and could even be seen as a "harmful distraction" from other goals related to justice or liberty (Levinson et al., 2022). For example, allocating resources to institutions that need it most would not change the fact that "elite" institutions will still find ways to reproduce social advantages or that higher education in the United States is an engine of social stratification (Posselt et al., 2012). Further, defining "need" and "disadvantage" are political processes subject to power dynamics that could reinforce inequities.

Our use of the term "equity" explicitly focuses on resource distribution and helps prompt questions about who benefits and who is burdened by existing higher education funding models. More specifically, we focus on the implications funding models have on institutions serving the nation's largest shares of students from low-income backgrounds and students of color. Next, we identify several strategies states and the federal government have used to address the economic and/or civil rights inequities. These strategies are likely to be most effective when they address multiple forms and definitions of inequity, and our work helps prioritize the role finances play in both creating—and ultimately addressing—inequity.

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Bringing equity-based principles into higher education funding models

Next, we turn to the question of how funding policies can be designed to distribute more resources to institutions with greater needs. The following ten design principles represent promising strategies and provide common language to help policymakers and researchers frame funding policy conversations. These principles can also help states and the federal government strengthen institutional capacity to improve higher education outcomes and student success for all students, particularly those attending the least-resourced institutions. The design principles

can be applied regardless of which funding allocation model a state or federal agency uses (e.g., performance-based formula, research grant, etc.). Notably, these principles do not represent the full range of possibilities policymakers could consider but can be a useful starting point for assessing and developing funding policies. We developed these principles based on theories of equity, empirical evidence, and discussions with institution and policy leaders.

The design principles are grouped into three categories. The first category, **defining and centering equity**, orients policies toward specific priority populations centered around economic and civil rights-based inequities. The second category, **promoting equitable engagement**, emphasizes how equity is also about organizational change and power dynamics that can sometimes be fraught when finances are involved. The final category, **advancing equitable programs**, highlights some promising approaches governmental agencies and institutions can negotiate to ensure efforts are effective.

When reading this section, please consider these principles as a starting point policymakers could use when addressing funding disparities. We believe these principles will help promote a more equitable distribution of resources, and we share examples of these principles being put into practice today. We are not evaluating *how well* these policies promote equity; rather, we use them to show the *feasibility* of these efforts. Appendix A and Appendix B include a list of these and other policy examples researchers may find useful for developing new studies around their effects.

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Principles for defining and centering equity

Explicitly address economic inequalities. Ensure institutions that are under-resourced or serve students from low-income backgrounds have the financial resources they need. This design principle follows from the economic concept of *vertical equity*, where allocating the greatest amount of resources to those with the greatest needs is not only efficient but also effective and equitable (Dowd et al., 2020). However, this principle is rarely put into effective practice: the most well-resourced institutions tend to be the most historically well-funded and have a long history of serving the most economically advantaged students (B. Taylor & Cantwell, 2018).

To address these economic inequities, Title III Part A of the Higher Education Act created the Strengthening Institutions Program (SIP). This program provides funding to institutions that have lower than average expenditures and a high proportion of students receiving Title IV aid or Pell grants. Not all eligible institutions will apply for or receive SIP funds; nevertheless,

the eligibility criteria explicitly address economic inequality by allocating resources to institutions with the least financial resources and serving the highest share of students from low-income backgrounds.

States also address economic inequality through their funding models. For example, California Education Code's Program Based Funding includes "Basic Aids Districts" designed to equalize financial resources for community colleges. In the funding formula, local property taxes, student fees, and timber taxes are subtracted from the district's apportionment entitlement to calculate the state share. If local funding is sufficiently high, the community college will not receive additional state funds. As a result, state funds are restricted to districts with the lowest tax base. While the state does not place upper limits on how much local funding colleges can receive, they do set a floor. This floor is an effort to address economic inequalities that allocates state funds based on local needs. Texas's HB 8 also balances local and state funding with a guaranteed base funding level met by the state if unmet by local and tuition revenue. The base amount includes a weight for enrollment of students from economically disadvantaged backgrounds. This approach addresses resource inequities at both the institution and student levels.

Explicitly address racial/ethnic inequalities. Ensure institutions serving students of color have the financial resources they need to overcome historic disparities. When institutions serving large shares of students of color have the fewest resources, or when their resources do not fully meet students' needs, then this can result in racial inequity. We view this inequity from a civil rights perspective where Title VI of the Civil Rights Act prohibits discrimination on the basis of race, color, or national origin, yet higher education has a long history of underfunding colleges serving students of color (Harris, 2021).

To address racial/ethnic inequities in higher education funding, the federal government has created several programs supporting Minority Serving Institutions and institutions with the mission of serving students of color. For example, Title III Part B of the Higher Education Act distributes discretionary grants to enhance the mission of HBCUs. Similarly, Title V Part A includes the Developing Hispanic-Serving Institutions Program (HSIs) and Title III Part A includes programs for Asian American, Native American, Pacific Islander-Serving institutions (AANAPISIs; Samayoa, 2022).

At the state level, a common strategy is to embed racial equity "premiums" into existing performance-based formulas (Rosinger et al., 2020). States might provide bonus points in their funding formula when institutions either increase enrollment or completion rates for students of color. In Louisiana, the state includes base funds (i.e., not via performance formulas) to institutions serving the largest numbers of "underrepresented minority" students (Louisiana Board of Regents, 2023). Finally, if a funding policy can be linked to past segregation and has "segregative effects," it could warrant legal action as has been done in several states (M. Brown, 1999; Morris et al., 1994). For example, the *Ayers* settlement required Mississippi to provide \$500 million over several years to support its HBCUs, which by most accounts was far too little (Harris, 2021).

Maintain fidelity to equity goals. Ensure funds are linked to institutional actions that positively affect economic or racial/ethnic inequities. These linkages can be “tight” where state or federal agencies outline the specific activities, programs, or standards institutions must use in exchange for funding. Or, linkages can be “loose” where governmental agencies outline broad goals and institutions determine the most appropriate strategies for achieving them over time (Dee, 2006).

For example, the federal Postsecondary Student Success Grant (PSSG) Program tightly links funding to equity goals. The PSSG program explicitly aims to “equitably improve postsecondary student outcomes... by leveraging data and implementing, scaling, and rigorously evaluating evidence-based activities to support data-driven decisions and actions” (U.S. Department of Education, 2023a). Under this program, institutions must adopt programs and practices that have strong evidence base (e.g., based on What Works Clearinghouse standards) and are rigorously evaluated to ensure they contribute to advancing the knowledge base around effective program design and implementation.

At the state level, Illinois created the Commission on Equitable Public University Funding charged with developing recommendations “remediating inequities in funding that have led to disparities in access, affordability, and completion for underrepresented and historically underserved student groups, including students who are Black, Latinx, or from low-income families” (Public Act 102-0570). Similar to the federal PSSG program, Illinois has explicit equity goals; however, the Commission does not determine funding allocations, so this example would result in a loose link between funding and equity. The Commission would identify specific equity goals and expectations but would not prescribe specific actions campuses must take in order to receive funding.

There is a large body of literature on promising programs and practices institutions can implement in order to address economic or racial/ethnic inequities on campus. Regardless of the specific course of action institutions take or how tightly an agency links funds to equity goals, institutions should ensure funds are leveraged to support or enhance evidence-based activities addressing inequities on campus (Aguilar-Smith, 2021; Arellano et al., 2022; Garcia et al., 2019; M. Nguyen, 2022; Vargas & Villa-Palomino, 2019).

Principles for promoting equitable engagement

Involve affected stakeholders in policy design/reform process. Ensure stakeholder groups most affected by funding decisions are involved in (re)designing funding policies. Input can help policymakers gain new insights, develop new approaches to addressing problems, generate support for policy change, and anticipate unintended consequences (Stosich & Bae, 2018). Stakeholder engagement is a social and political process where relationships, trust, and power dynamics shape the direction of policy conversations. Understanding these dynamics and how they can reinforce existing inequities is key to creating effective and equitable policy change (Felix & Trinidad, 2020).

For example, the White House Initiative on Advancing Educational Equity, Excellence, and Economic Opportunity Through HBCUs (Executive Order No. 14041) was created “to support implementation of this Government-wide approach to breaking down systemic barriers for HBCU participation in Federal Government programs.” The initiative includes

multiple avenues for engaging HBCUs (e.g., meetings with students and institutional leaders, hosting a conference, establishing an advisory board, etc.). Oregon's Task Force on Student Success for Underrepresented Students in Higher Education (H.B. 2590) is an example from state policy, where task force members (who are state legislators) meet with students from "underrepresented" backgrounds and other stakeholders to understand how funding policies can better address their concerns and needs. The Task Force issued a public report including several recommendations stemming from stakeholder input (Oregon Legislative Policy and Research Office, 2022).

There is always a risk these stakeholder engagement activities are "transactional" rather than offering meaningful feedback and involvement (S. Nguyen, 2023). Nevertheless, including formal and public channels for participation can open new lines of communication and promote fuller inclusion in decision-making processes. These channels can also serve as a public accountability tool to hold policymakers accountable for representing the interests of various stakeholders, particularly those most affected by a given policy change.

Promote professional autonomy and self-determination. Ensure institutions have appropriate control over how to use funding to address local needs. Each campus will have its own unique history, challenges, and opportunities, meaning the practitioners will need to tailor equity-enhancing strategies to their institution's local contexts (McNair et al., 2020; L. Taylor, 2022). Doing so encourages practitioners to use their expertise, competencies, and discretion when implementing change (Dee & Leišytė, 2016). Professional autonomy can help promote a culture of ongoing improvement where practitioners are enacting evidence-based, culturally-responsive, and otherwise appropriate interventions to address and ultimately dismantle existing structures of inequity on campus. In practice, policies promote self-determination by allowing broad use of funds.

Federally, Congress created the Education Stabilization Fund (which includes HEERF) in response to the COVID-19 pandemic. The HEERF formula provided additional funds to MSIs and institutions enrolling larger shares of students from lower-income backgrounds. Under all three tranches of HEERF funding, institutions were permitted to use up to half of their funds to cover "any costs associated with significant changes to the delivery of instruction due to the coronavirus" (Skinner et al., 2023). This resulted in a wide degree of autonomy and discretion, allowing institutions to prioritize their local needs and use funds accordingly.

At the state level, autonomy is sometimes reflected in performance-based formulas by differentiating performance goals by each institution's mission. For example, Rhode Island's Performance Incentive Funding model (RIGL§ 16-106) states "metrics should recognize and support the distinct and unique purpose, role, scope, and mission of each institution, as well as the broader value of higher education in bettering society and promoting overall prosperity." Mission-differentiation can help ensure funds are not allocated with a "one size fits all" approach, and doing so can send a signal that professionals working closest to students are often in the best position to understand their needs.

Support organizational learning and positive change. Ensure funds help institutions promote a culture of improvement by supporting professional development and ongoing assessment. Transformational organizational learning requires a critical assessment of the organization's beliefs, assumptions, and goals (Dee & Leišytė, 2016). This type of learning, termed double-

loop learning, aims to address the root cause of issues rather than make incremental changes to tasks or routines (Kezar, 2018). For example, scholars have developed a process for cultivating “equity mindedness” within institutions which involves: (1) creating awareness about gaps in outcomes across student identities, (2) attributing those gaps to institution-level causes rather than student deficits, and (3) promoting institutional change through goal setting (Bauman et al., 2005; Bensimon, 2005).

State governments and federal agencies can promote this kind of change through a number of strategies. For example, Virginia’s State Council of Higher Education produces several data dashboards that disaggregate various educational outcomes by students’ race/ethnicity and income for each institution in the system (State Council of Higher Education for Virginia, n.d.). These data elements can then be used to identify gaps in outcomes and understand how institutional resources contribute to those gaps. The Oregon Educational Investment Board created an “Equity Lens” (2011) document to not only collect and report disaggregated data, but to use data to determine how different economic or racial/ethnic groups could be affected by policy change and how funding decisions might “worsen existing disparities or produce other unintended consequences.” In both examples, the idea is to first identify gaps and then understand how these gaps stem from systemic barriers rather than individual deficits.

At the federal level, the CHIPS and Science Act requires federal research agencies to “regularly assess, and update as necessary, policies, and practices to remove or reduce cultural and institutional barriers limiting the recruitment, retention, and success of groups historically underrepresented in STEM research careers.” In addition to changing the internal, federal culture of grant-making, the CHIPS and Science Act promotes institutional change by funding research on MSIs and STEM, including “the challenges and opportunities for HBCUs, TCUs, and MSIs in attaining the resources needed for integrating effective practices in STEM education, including providing research experiences for underrepresented minority students.” The application of the knowledge gained through reporting and research is a critical piece of organizational change.

Principles for advancing equitable programs

Avoid unnecessary administrative burdens. Ensure administrative processes to receive or use funds do not limit institutions participation. The process of applying for funds and maintaining eligibility requires a certain level of effort (e.g., learning about eligibility, time to apply, compliance reporting, etc.) that can create barriers to participation, known as administrative burdens (Herd & Moynihan, 2018). Due to historical underfunding, certain institutions (e.g., HBCUs, HSIs, etc.) have capacity constraints that administrative burdens can exacerbate (Aguilar-Smith, 2023). Institutions that stand to benefit most from additional funding may not participate if the time, resources, or learning curve necessary to participate are too costly. As a result, administratively burdensome policies can reinforce rather than reverse existing inequities.

The implementation of federal HEERF funds stands out as a promising model for reducing administrative burdens. Institutions were not required to file an application (aside from submitting an attestation form) and, once the form was submitted, funds were automatically distributed based on a formula. There were eventual reporting requirements, but initially these were kept at a minimum to respond quickly to the pandemic. Additionally, HEERF set aside funds for Minority Serving Institutions participating in Title III, Title V, and Title VII programs. By reducing administrative burdens, federal policymakers were able to respond quickly to national

needs while maximizing participation in a funding program that helped millions of students (and thousands of institutions) manage through a national emergency (M. Nguyen et al., 2022). Considering most federal funding to higher education is done via *competitive grants*, there are likely many administrative burdens across several federal agencies and grant programs. Unlike the federal government, states do not typically require institutions to apply for funding and this likely reduces the amount of administrative burdens institutions face when seeking state funds. Nevertheless, when states create special purpose funding or institutional requests that require institutions to either apply or otherwise opt-into a funding program, administrative burdens can limit which institutions apply or opt-in to receive funds.

Account for unequal institutional capacity. Ensure funds provide the greatest benefit to institutions with the greatest capacity-building needs. An institution's capacity (see Table 1) will determine how and how well it supports student outcomes. And when institutions with the least capacity subsequently receive the least funding, this is likely to only reinforce inequities. This can create a "chicken and egg" problem in states that tie funding to performance – how can an institution improve its performance if it does not have the capacity to do so? Institutions with the least capacity have the greatest constraints when it comes to shaping students' outcomes (Dougherty et al., 2016). If policymakers are interested in improving student outcomes, then investing in institutional capacity is a promising strategy to achieve better results.

If policymakers are interested in improving student outcomes, then investing in institutional capacity is a promising strategy to achieve better results.

Many federal grants under the HEA address inequalities in institutional capacity. For example, Title III, Part C establishes Endowment Challenge Grants where under-resourced institutions serving students from low-income backgrounds (Part A eligible) and HBCUs (Part B eligible) receive matching funds to build their endowments. Doing so will not only build institutional capacity, but also aims to "foster increased independence and self-sufficiency." In determining which institutions to support, the federal government prioritizes those "with the greatest need" measured by the market value of existent endowment funds (if any). However, institutions with the greatest need may also be institutions that have the least fiscal capacity to participate in the matching grant component of these grants, where they are required to contribute one dollar for every two federal dollars.

At the state level, Tennessee enacted the Initiative on HBCUs (Public Chapter No. 464) "to strengthen the capacity of Historically Black Colleges and Universities to provide the highest quality education, increase opportunities for these institutions to participate in and benefit from state programs." The initiative encourages state agencies to develop a plan to increase the capacity of HBCUs to participate in state programs and identify partnership opportunities. In particular, the 2022-2025 Strategic Plan for HBCU prioritizes strengthening administrative capacity by identifying or developing training opportunities related to business, finance, and strategic planning Engagement (Tennessee Higher Education Commission, 2022).

Substantial, sustained, and stable funding. Ensure funds provide sufficient time, meaningful resources, and predictability to promote institutional improvement. Colleges are complex organizations that do not change overnight; meaningful change takes long-term commitments (Kezar, 2018). This is especially true when colleges undertake change aimed at dismantling longstanding policies, procedures, and systems that have either created or permitted racial and economic inequities to arise in the first place. To address deeply rooted inequities in meaningful and lasting ways, policymakers may need to make longer-term and substantial financial commitments. However, state and federal budgets often operate on short-term (one or two year) cycles, which can create volatility and unpredictability for long-term planning. States often cut funding to higher education during recession periods more drastically than other budget categories (Delaney & Doyle, 2011). Research shows volatility is related to lower graduation rates, particularly among Latinx and Black students (Wekullo & Musoba, 2023). Additionally, there is a large degree of financial inequality among colleges, making it difficult to carry out change when resources are constrained. Even a large influx of funding may not be enough to close equity gaps if an institution has suffered from decades of neglect or severe historical underfunding.

There are relatively few examples of federal or state funding models that commit funds across multiple budget cycles. The federal Endowment Challenge Grant mentioned earlier has a 20-year commitment, but most project grants (e.g., Title III) last three to five years. In the states, desegregation settlements have required states to commit funds over multiple budget cycles (M. Brown, 1999; Harris, 2021). Certain state funding models are expected to be more stable than others; base funding, for example, may be designed as a set amount which the institution can rely upon each year and states can incorporate “stop loss” provisions (e.g., Ohio, Kentucky) into their performance-based formulas to limit volatility. Federally, institutions receiving Titles III, V, or VII HEA funding can reapply after their grant cycles have ended, creating the potential for long-term commitments but without guarantees.

Promote public accountability. Ensure funds are tied to measurable results that are transparent, achievable, and based on mutual support among stakeholders. This form of accountability is increasingly common in higher education and for good reason—policymakers want institutions to account for their actions and ensure public funds are used effectively (Kelchen, 2018b). However, public accountability can go much further than simply measuring and reporting outcomes; it can also ensure professionals are adhering to standards of their field through accreditation or other review processes (i.e., professional accountability). Accountability can also be understood as political accountability, where elected officials are judged by how and how well they create conditions for institutions to address inequities.

At the federal level, accountability is commonly practiced through reporting requirements where institutions receiving funds must account for what they did with the money. To move accountability away from compliance reporting and toward a model aimed at addressing inequity, funding policies can more explicitly hold institutions accountable for promoting equitable results. For example, the CHIPS and Science Act tracks and reports how federal research agencies invest in and engage with HBCUs, MSIs, and TCUs. CHIPS and Science also requires reporting with data disaggregated by student identity, as quoted in the legislative text: “The Director of the National Science Foundation shall publish statistical summary data, as practicable, collected under this section, disaggregated and crosstabulated by race, ethnicity, sex, socioeconomic indicators, which may include employment status, occupation, educational

attainment, parental education, and income, geographic location, and years since completion of doctoral degree” (§10502). Reports are made public, promoting transparency and accountability for equity goals. Internally, reviewing disaggregated data promotes organizational learning and positive change by drawing attention to inequities evident in the data.

Similarly, at the state level, reporting is used to hold institutions accountable. Wisconsin’s Minority Student Participation and Retention Grants are awarded to technical colleges to develop or improve student services for minority students. In addition to requiring grantees to submit a report, the state holds itself accountable, tasking the technical college system board to “develop and implement an audit program to assess the effectiveness of the grants made under this section in accomplishing the intended goals” (State Code Ch. 38.26). The grants fund 25–75% of project costs, with the institution funding the remainder. While cost-sharing may increase institutional buy-in and thus promote professional accountability, it may also reduce participation if the benefits do not outweigh the costs.

Summary

These design principles are mutually supportive and work in combination, though tensions also occur. For example, *public accountability* can promote *organizational learning and positive change* when institutions use reporting as an opportunity to reflect on their progress, redirect efforts, and develop future goals. However, accountability metrics may have tensions with other design principles. Reporting could be *administratively burdensome*, and an externally set goal may not promote *self-determination*. These tensions could be addressed by *including affected stakeholders* to co-develop accountability metrics. Engagement can then lead to greater institutional support and commitment to *equity goals* and the *capacity development* necessary to achieve these goals.

Our aim is to introduce common language for institutions, systems of higher education, and state and federal policymakers to have conversations about funding policies, prompting questions like: what administrative burdens exist in this policy? How stable is funding? Do all institutions have the capacity to fully participate in this program?

The principles represent a foundation for designing and evaluating funding policies to distribute resources more equitably to institutions serving students of color and students from lower-income backgrounds. Our aim is to introduce common language for institutions, systems of higher education, and state and federal policymakers to have conversations about funding policies, prompting questions like: what administrative burdens exist in this policy? How stable is funding? Do all institutions have the capacity to fully participate in this program? The policy examples demonstrate there are existent funding models which practice these principles and can spark ideas for how similar policies could be incorporated in other contexts.

NEXT STEPS: PROMISING DIRECTIONS FOR FURTHER ACADEMIC AND POLICY RESEARCH

This paper integrates research from several distinct literature bases and theoretical frameworks to develop new ideas around “capacity building” and “equity-based funding” in higher education. There is growing national interest in these concepts, yet no broad consensus on how to define or conceptualize these ideas. Our work is a first attempt to outline a promising path forward and should be read as a first attempt to help advance new knowledge in the field. To continue down this path, we offer several ideas for further research namely around policy origins and agenda setting, design and implementation, and evaluation.

While our work identified several examples of funding policies that currently have an equity orientation, it has only scratched the surface of how these policies came to be (i.e., their *origins* and the *agenda setting* process behind them). There is much to be learned by understanding the politics, legal arguments, key influencers, and history behind any of these (or other) funding policies that explicitly address inequity. How did a policy that explicitly includes students’ race, ethnicity, or income become a method for allocating state or federal funds? Who were the key actors and what political challenges did they face in advancing a policy agenda? And more specifically and related to current debates, researchers could ask:

- To what extent do policymakers apply an equity lens when developing funding policies?
- What policy processes best describe the emergence of equity funding policies? How do processes differ across state contexts?
- What role do intermediary organizations hold in the development of equity-based funding efforts?

Researchers seeking guidance on how to investigate the origins/agenda setting of equity-based funding models might look to prior studies on performance-based formulas in various states (Dougherty et al., 2016; Gándara, 2020; Gándara et al., 2017; Gándara & Jones, 2020; Jones et al., 2017).

Regardless of how a policy came to be, the research community could benefit greatly from understanding the key *design and implementation* considerations that have gone (or could go) into applying an equity lens to funding allocation models. For example, if a funding model uses certain racial, ethnic, or socioeconomic groups to determine eligibility, what are the requirements, thresholds, and other criteria for determining which institutions are eligible? Similarly, how does an institution’s capacity affect how/how well it can support student success? Few studies focus on policy design, implementation, or institutional capacity (e.g., DeLoach et al., 2023; M. Nguyen, 2022), and fewer connect funding to outcomes through capacity or other mechanisms identified in our theory of action.

Research on capacity in higher education often focuses on a specific effort, such as building a new program or research capacity. Additionally, studies of capacity building have been critiqued for taking a deficit approach, or describing capacity as something an institution either has or does not have – particularly since much of the capacity building literature comes from research

on “developing” nations (Lee & Kuzhabekova, 2019). From this critique, there is an opening for research with a more nuanced approach, recognizing capacity building as something all institutions participate in, from different starting points. The research field would also benefit from consensus around measuring institutional capacity. Though practitioner-oriented assessment tools exist (Toma, 2010), rigorous measures of capacity can help policymakers identify resource needs. Some researchers and policy organizations are heading in this direction with cost models and adequacy frameworks (Koch & Prescott, 2021; Levin et al., 2022).

Policy implementation studies can build our understanding of how institutions use funding to support students of color and students from low-income backgrounds (e.g. Bell et al., 2023; Felix, 2021). Research may also focus on:

- To what extent do different funding models build institutional capacity (including human, organizational, structural, and material) for serving students of color and students from low-income backgrounds?
- How do institutional capacities affect institutional competitiveness for grant funding?

Finally, researchers should conduct more *evaluations* to determine whether and under what conditions financial capacity affects various student outcomes. In this paper, we identified several policies aimed at enhancing capacity among institutions with the greatest needs, many of which enroll disproportionate shares of students of color and/or students from low-income backgrounds. However, most of these policies have not been evaluated to understand if and under what conditions they improve student outcomes. More specifically, have these funding policies improved outcomes at institutions—or for students—who have the greatest needs? In short, are these funding policies improving inequities (e.g., Perez, 2020; Teranishi et al., 2014)? Additionally, performance-based funding literature holds a promising model for studying the effect of allocation models on student outcomes (e.g., Gándara & Rutherford, 2018; Kelchen, 2018; Ortagus, Rosinger, Kelchen, Voorhees, et al., 2023; Rosinger et al., 2023).

Researchers can also evaluate allocation models in relation to our design principles. For example, Gándara et al. (2023) sets forth a research agenda for understanding the effects of racialized administrative burdens on colleges and their students. There is also a body of literature related to the effects of volatility in higher education (Delaney, 2023). Research questions in the evaluation vein may include:

- To what extent does the allocation model distribute more resources to institutions with the least resources? To what extent does the model close gaps in student outcomes by race and socioeconomic status?
- How does the policy affect institutional capacity to serve students of color and students from low-income backgrounds?
- Under what conditions is funding to higher education substantial enough to produce organizational change?

There are many opportunities to explore the causes and consequences of funding inequities in higher education. We have outlined but a few promising paths forward and are eager to continue developing lines of inquiry in this area. Ultimately, these research ideas can advance

understanding of the conditions under which “money matters” specifically for institutions serving students from low-income backgrounds and students of color and how to best distribute financial resources to those institutions.

CONCLUSION

This report contributes to ongoing national conversations about capacity building and equity-based funding in higher education. We aim to make two enduring contributions to both research and policymaking. First, our theory of action helps define and explain how **institutional capacity**—the people, resources, and systems colleges employ to deliver education—shape student outcomes. Money does not simply flow into a “black box” when states or the federal government appropriate funds to colleges; instead, those funds are used to help institutions develop and implement various programs/practices that shape learning environments and ultimately affect students’ experiences and outcomes. Policymakers interested in improving student outcomes may want to assess whether colleges have sufficient capacity to produce the kinds of outcomes they desire. If they find a college’s capacity is constrained, then this could warrant intervention where “capacity building” becomes strategy for achieving desired outcomes. Researchers studying student outcomes and how college affects these outcomes could also use this concept to conceptualize and explain the conditions in which “money matters” in higher education.

We do not see equity-based funding as a stand-alone policy; rather, it is a lens policymakers can use to monitor, assess, and evaluate existing or proposed funding allocation models.

Second, we introduced key design principles behind the concept of **equity-based funding** in higher education. We do not see equity-based funding as a stand-alone policy; rather, it is a lens policymakers can use to monitor, assess, and evaluate existing or proposed funding allocation models. Using an equity lens can reveal new understandings about the challenges and opportunities facing our nation’s least-resourced colleges and universities. At the federal or state level, policymakers might find any combination of these design principles to be a useful way to build capacity and enhance equity in higher education. We drew on academic research evidence and theory to develop these principles and they are by no means the final word on the subject. In fact, we see them as a starting point to many difficult or long overdue conversations about whether or how funding models should be tied to a college’s *needs*. These conversations will play out differently in each state or across federal agencies, yet they hold great promise for addressing some of the major inefficiencies and inequities in our current funding systems. Our intention is that this report can provide useful language, concepts, and frameworks that hold great promise for promoting student success in all of higher education and particularly in colleges with the greatest needs and fewest resources.

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APPENDIX A

Example federal policies containing equity-based design principles

HIGHER EDUCATION ACT

POLICY: *Higher Education Act, Title III, Part A (Strengthening Institutions Program (SIP))*

MODEL: *Program grant*

Institutional eligibility is based on the economic needs of the institution and the student body based on (1) lower expenditures than average and (2) “needy” student enrollment, measured as the proportion of students who receive Title IV aid or Pell grants. Part A authorizes a suite of capacity-building grants for specific MSIs including American Indian Tribal Colleges and Universities, Alaska Native and Native Hawaiian-serving institutions, Predominantly Black Institutions, Native American-serving nontribal institutions, and Asian American and Native American Pacific Islander-serving institutions.

POLICY: *Higher Education Act, Title III, Part B (Strengthening Historically Black Colleges and Universities)*

MODEL: *Formula grant*

Funding is authorized to HBCUS motivated by findings that “states and the Federal Government have discriminated in the allocation of land and financial resources to support Black public institutions.” Funds are disbursed in part based on Pell enrollment.

POLICY: *Higher Education Act, Title III, Part C (Endowment Challenge Grant)*

MODEL: *Matching grant*

Institutions eligible for Title III, Part A and Part B (e.g., under-resourced institutions, MSIs and HBCUs) funding can also compete for the Endowment Challenge Grant. Applicants are prioritized, in part, based on financial need, indicated by existing endowment size. This program has not been funded since fiscal year 1995 (Fountain, 2023).

POLICY: *Higher Education Act, Title III, Part E (Minority Science and Engineering Improvement Program)*

MODEL: *Program grant*

Grants are offered in recognition that “aid to minority institutions is a good way to address the underrepresentation of minorities in science and technological fields.” Notably, eligibility is based on criteria different from other Title III programs, defined as 50% enrollment of American Indian, Alaskan Native, Black, Hispanic, Pacific Islander or “other ethnic group underrepresented in science and engineering.”

POLICY: *Higher Education Act, Title III, Part F (Strengthening Historically Black Colleges and Universities and other Minority-Serving Institutions)*

MODEL: *Program grants*

Part F authorizes additional funding for Part A MSIs and Part B HBCUs. The policy also includes a competitive grant for STEM and articulation at HSIs.

POLICY: *Higher Education Act, Title V, Part A (Developing Hispanic-Serving Institutions)*

MODEL: *Program grants*

Recognizing low college enrollment among Hispanic students and that HSIs face “significant resource problems,” this program authorizes grants to HSIs that enroll students from low-income backgrounds and have low expenditures.

POLICY: *20 U.S.C. 1138 (Postsecondary Student Success Grant (PSSG) Program)*

MODEL: *Program grant*

Institutions eligible for Title III or Title V (MSIs and SIP eligible) can apply for additional PSSG funds for specific interventions to “to equitably improve postsecondary student outcomes... by leveraging data and implementing, scaling, and rigorously evaluating evidence-based activities to support data-driven decisions and actions by institutional leaders committed to inclusive student success.”

EXECUTIVE ORDERS

POLICY: *Executive Order No. 14041 (White House Initiative on Advancing Educational Equity, Excellence, and Economic Opportunity Through Historically Black Colleges and Universities)*

MODEL: *N/A*

This initiative aims to “support implementation of this Government-wide approach to breaking down systemic barriers for HBCU participation in Federal Government programs” through partnerships, capacity building efforts, and engagement with HBCUs. While the directive does not include funding directly, it does request agencies reduce barriers to HBCU participation in federal grants.

FARM BILL

POLICY: *7 U.S.C. § 3221-3222d (1890 Land Grant College Funding)*

MODEL: *Matching grant*

Capacity-building grants for 1890 Land Grant Colleges, also known as HBCUs. Funds are used for agricultural research, and extension which in turn diversifies the agricultural industry. The policy also authorizes a non-matching grant program for facility improvements.

POLICY: [7 U.S.C. § 3222e](#) (*New Beginning for Tribal Students*)

MODEL: *Matching grant*

Competitive grants for land-grant institutions (including but not limited to 1994 Tribal Colleges and Universities (TCUs)) to support tribal students.

POLICY: [7 U.S.C. Chapter 64, Subchapter VII](#) (*Programs for Hispanic, Alaska Native, and Native Hawaiian Serving Institutions*)

MODEL: *Program grant*

Authorizes grants to MSIs to “enhance educational equity for underrepresented students,” “strengthen educational capacities,” and prepare students for careers related to agricultural sciences. HSIs are also eligible for endowment funds, a capacity building matching-grant, and a competitive grant for research and extension.

POLICY: [7 U.S.C. § 301](#) (*Equity in Educational Land-Grant Status Act of 1994; 1994 Institutions Endowment Fund; Institutional Capacity Building Grants; Research Grants*)

MODEL: *Formula grant, program grant*

Establishes funding programs for 1994 land grant institutions, which includes a list of Tribal Colleges and Universities. Funding programs include endowment, annual appropriations, capacity building grants for facilities and capital projects, and research grants.

POLICY: [7 U.S.C. § 343](#) (*Tribal Extension Grant Program; Federally Recognized Tribes Extension Program*)

MODEL: *Program grant, matching grant*

Establishes grant programs for building extension activities. The Tribal Extension Grant Program is for 1994 land grant institutions (TCUs) while the Federally Recognized Tribes Extension Program is for any land grant institution establishing an extension presence on reservations and tribal jurisdictions.

POLICY: [20 U.S.C. § 1138](#) (*Research and Development Infrastructure Grant Program*)

MODEL: *Program grant*

Funding for MSIs to increase research efforts, particularly aiming to change Carnegie Classifications, in recognition that while research activity impacts funding, MSIs often lack the resources to advance research. Funding programs are separate for HBCUs, TCUs, and MSIs, and institutions with high Pell enrollment receive competitive priority within each group.

CARES ACT

POLICY: *H.R.748, § 18004 (CARES Act - Higher Education Emergency Relief Fund)*

MODEL: *Formula grant*

HEERF prioritized institutions serving students from low-income backgrounds by distributing about 2/3 of funds based on the share of Pell students. Funds were also authorized specifically “for institutions of higher education that the Secretary determines have the greatest unmet needs related to coronavirus.”

CHIPS AND SCIENCE ACT

POLICY: *CHIPS and Science Act, § 10325 (Expanding Geographic and Institutional Diversity in Research)*

MODEL: *Program grant*

Authorizes a competitive grant to institutions with lower research expenditures to build research capacity. The Director may consider programs which will “support students from diverse backgrounds” and MSI status.

POLICY: *CHIPS and Science Act, Title V (Broadening Participation in Science)*

MODEL: *Program grant*

Promotes organizational learning for federal granting agencies by disaggregating data on grant participation by identities “historically underrepresented in STEM,” changing policies to remove barriers to participation, and researching “the challenges and opportunities for HBCUs, TCUs, and MSIs in attaining the resources needed for integrating effective practices in STEM education.” Title V also authorizes the Capacity Building Program for Developing Universities, a competitive grant program for MSIs that have low research and development expenditures (§10524), and the Tribal Colleges and Universities Program, competitive grants to increase computer science instruction at TCUs (§10525).

WORKFORCE INNOVATION AND OPPORTUNITY ACT

POLICY: *Workforce Innovation and Opportunity Act §169(c) and Title I of Division H of Pub. L. 116-260, Consolidated Appropriations Act, 2021 (Strengthening Community Colleges Training Grant)*

MODEL: *Program grant*

Authorizes grants to “build the capacity of community colleges to address identified equity gaps and meet the skill development needs of employers in in-demand industries and career pathways leading to quality jobs.” The *funding notice* describes equity-related activities such as using data to identify gaps in student outcomes by race, gender, and ability. Allowable activities also include promoting diversity in hiring and professional development in diversity, equity, and inclusion (DEI).

APPENDIX B

Example state policies containing equity-based design principles

CALIFORNIA

POLICY: *Education Code Title 3, § 84750.4 - 84811 (Program Based Funding/Basic Aid Districts)*

MODEL: *Input-driven formula*

State dollars are allocated relative to local tax revenue such that the state allocates zero dollars to institutions in districts where local funding meets the full apportionment. While this policy allows for the greater distribution of limited state resources to colleges with greater need, it also protects basic aid districts from state funding cuts, which could exacerbate inequities in total funding.

COLORADO

POLICY: *HB20-1366 (Higher Education Funding Allocation Model)*

MODEL: *Input-driven formula*

Performance metrics include an added weight for enrollment of Pell-eligible students and underrepresented minority students.

ILLINOIS

POLICY: *Public Act 102-0570 (Commission on Equitable Public University Funding Act)*

MODEL: *N/A*

Motivated by systemic racism and how existent funding policies contribute to “racial and socioeconomic inequities,” this policy establishes a commission of legislators, institutional leaders, and advocates to evaluate existing funding methods and recommend “data-driven criteria and approaches to adequately, equitably, and stably fund public universities.”

KENTUCKY

POLICY: *State Code, 164.092 (Comprehensive Funding Model)*

MODEL: *Performance-based formula*

Motivated by “closing achievement gaps by increasing the number of credentials and degrees earned by low-income students, underprepared students, and underrepresented minority students,” institutions receive additional funding for students from low-income and racial minority backgrounds who earn a degree.

LOUISIANA

POLICY: *RS 17:3129.2 (Outcomes-Based Funding Formula)*

MODEL: *Performance-based formula*

In addition to an added weight for degree completion for students from “underrepresented minority” backgrounds, the formula includes an additional bonus when those students complete their degree at an institution with high enrollment of students of color and students from low-income background.

MISSISSIPPI

COURT CASE: *Ayers & United States v. Fordice*

MODEL: *Special purpose funding (settlement agreement)*

In response to a lawsuit against Mississippi arguing the state favored historically white colleges and universities, the state was ordered to pay \$503 million to HBCUs in the state to be used on financial aid, the development of academic programs, endowments, and capital improvements.

OHIO

POLICY: *HB 33, § 381.140 (State Share of Instruction Formula)*

MODEL: *Performance-based formula*

Institutions receive an additional funding weight when Pell eligible students (or EFC threshold) and students of color (African American, Hispanic, and Native American) complete courses and earn degrees.

OREGON

POLICY: *HB 2590 (Task Force on Student Success for Underrepresented Students in Higher Education)*

MODEL: *N/A*

Establishes a task force to meet with underrepresented students and support staff for the purpose of developing “student success policies and funding proposals.” The policy exemplifies an actionable approach to engaging affected stakeholders.

OREGON

POLICY: *OAR 715-013-0025 and 715-013-0025 (Student Success and Completion Model)*

MODEL: *Performance-based formula*

Institutions receive an additional funding weight for graduating students of color (American Indian/Alaskan Native, Hispanic, Pacific Islander, Black, African American) and/or students from low-income backgrounds (Pell recipients).

RHODE ISLAND

POLICY: *RIHL, 16-106 (The Performance Incentive Funding Act of 2016)*

MODEL: *Performance-based formula*

A guiding principle of the model is “performance metrics should advance equity and diversity and help to close equity gaps in student access, persistence, and success.” The legislation allows for weights based on student socioeconomic status and policies require completion metrics to be disaggregated by income and race.

TENNESSEE

POLICY: *Public Chapter No. 464 (Initiative on HBCUs)*

MODEL: *N/A*

Initiative “for the purpose of providing oversight to focus on ways to strengthen the capacity of Historically Black Colleges and Universities to provide the highest quality education, increase opportunities for these institutions to participate in and benefit from state programs,” which includes partnership building, research, and program development efforts.

TENNESSEE

POLICY: *State Code, Title 49, Ch. 7 (Part 2) (Quality Assurance Funding)*

MODEL: *Performance-based formula*

Institutions receive points towards their funding allocation for increasing graduation rates for four institutionally-selected focus populations, one of which must be African American, Hispanic, or low-income “to address those populations with the largest gaps in postsecondary attainment and success.”

TEXAS

POLICY: *HB 8, Chapter 130A, Subchapter B (Base Tier)*

MODEL: *Input-driven formula*

Base funding is calculated as the state guaranteed funding amount minus local share, resulting in the state distributing relatively more funding to institutions that have a lower local tax base. Part of the formula for guaranteed funding includes an FTE calculation weighted to “reflect the higher cost of educating certain students,” including economically disadvantaged students.

WISCONSIN

POLICY: *State Code Ch. 38.28 (State Aid Equalization Index)*

MODEL: *Input-driven formula*

To account for different financial capacities, the state aidable cost is adjusted based on a community college district's property tax valuation such that districts with lower valuation can receive more state aid. The equalization index is a partial adjustment, meaning every district will receive some amount state aid.

WISCONSIN

POLICY: *State Code Ch. 38.26 (Minority Student Participation and Retention Grants)*

MODEL: *Special purpose funding*

Programmatic grants for community colleges to develop or improve student services for racial minority students, such as tutoring, retention, teacher education internships, occupational training, and partnerships with community organizations.

