INCREASING THE GRADUATION RATE OF LATINX STUDENTS AT PUBLIC TWO- AND FOUR-YEAR COLLEGES AND UNIVERSITIES IN COLORADO

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Disclaimer

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On my honor as a University of Virginia student, I have neither given nor received unauthorized aid on this assignment.

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EXECUTIVE SUMMARY

In the State of Colorado, Latinx students graduate from public two- and four-year colleges and universities at a disproportionate rate compared to their white peers. While the state is roughly 70 percent white residents, the second largest group is Latinx residents, at 21 percent of the state population (United States Census Bureau, 2019). In the 2020-21 academic year, 11,518 Latinx students graduated from a public two- or four-year college or university in Colorado, while 40,628 white students graduated (Colorado Department of Higher Education, 2021f).

Furthermore, the Latinx four-year graduation rate is greater than 10 percentage points less than that of white students (Excelencia in Education, 2021a). Resulting from pre-college proficiency differences, a lack of college affordability, and rising residency complications, low Latinx college graduation rates will inevitably cost more to society than instituting policies and programs to aid in increasing graduation rates and helping improve the personal and educational outcomes of Latinx students.

To increase the graduation rate and decrease the achievement gap, I define and assess five policy alternatives:

- **Option 1: Status Quo**
- **Option 2: Establish Tuition-Free Community College, Promise Programs, & Last-Dollar Scholarships**
- **Option 3: Develop Peer & Faculty Mentoring**
- **Option 4: Form College Readiness & Preparation Programs**
- **Option 5: Determine State Performance & Outcome Measures**

Each alternative is evaluated against four criteria: cost-effectiveness, equity, political feasibility, and ability to implement. The alternatives will receive a score for each criteria on a scale of 1 through 5 based on how suitably the measures of the criteria are addressed. The scores of the criteria are then summed for a total score for each alternatives, revealing two final recommendations.

Ultimately, I recommend the implementation of **Option 2: Establish Tuition-Free Community College, Promise Programs, & Last-Dollar Scholarships**, based on favorable equity and implementation ability scores. Furthermore, I suggest the continuation of status quo, as well as a probationary trial of **Option 3: Develop Peer & Faculty Mentoring Programs** for institutions within the bottom 50 percent of Latinx graduation rates that fail to see a margin of growth larger than 10 percentage points within the first five years of Option 2's implementation.

Finally, I outline steps to the implementation of Options 2 and 3, including state legislative procedures and institutional testing.

INTRODUCTION

Client Overview

Education Reform Now is a national think tank that develops policy ideas which seek to transform the public education system, from preschool through higher education, with a focus on serving low-income students and students of color (Education Reform Now, 2022). They have several state chapters, from Louisiana to New Jersey to Washington State; I was tasked with addressing potential solutions to the disproportionate Latinx college graduation rate in Colorado.

Their policy mission hinges on five commitments: a student-centered focus, anti-racist activism, low-income student advocacy, a devotion to integrity and humility in learning about the history of education in the United States, and a vow of collaboration.

Problem Statement

Too few Latinx students graduate from public two- and four-year colleges and universities in Colorado. For Latinx students in Colorado, the two-year graduation rate is 58 percent, and the four-year graduation rate is 42 percent (Excelencia in Education, 2021a). For white students in Colorado, the two-year graduation rate is 54 percent, and the four-year graduation rate is 57 percent. While Latinx students overperform their white peers in two-year graduation rates, their four-year graduation rate is significantly [more than 10 percentage points] lower than that of white students (Excelencia in Education, 2021a).

In nearby states Nebraska, Oregon, and Washington, which have roughly the same per capita higher education expenditures as Colorado (Urban Institute, 2021), the graduation rates of Latinx students are 47 percent (Excelencia in Education, 2021b), 61 percent (Excelencia in Education, 2021c), and 49 percent (Excelencia in Education, 2021d), respectively, demonstrating low performance from the State of Colorado government. Furthermore, Colorado's total graduation rate for its public colleges and universities is 45 percent, with a retention rate of 67 percent; nationally, the graduation rate for public institutions is 61 percent (National Center for Education Statistics, n.d.).

In the 2020-21 academic year, 11,518 Latinx students graduated from a public two- or four-year college or university; 40,628 white students graduated in the same year (Colorado Department of Higher Education, 2021f). 21 percent of Colorado's population is Latinx, the state's second largest residential group by race and ethnicity (United States Census Bureau, 2019). Yet, there is a socioeconomic college attendance gap between 14 to 23 percent, and a grade point average difference of 0.33 points (Colorado Equity Champions Coalition, 2020). The unfortunate achievement gap between white and Latinx students is evident in Colorado's higher education, reflected in the state's public college and university graduation rate and college attendance gaps.

Drivers of the Higher Education Achievement Gap

Based on evidence pulled from scholarship and recent news media, there are three major drivers behind the higher education achievement gap in Colorado. These drivers could be simultaneously diminished through a variety of policy alternatives, which are described and assessed later.

Proficiency Differences

One driver is proficiency differences, led by low high school graduation rates and a lack of conventional college preparation throughout high school. Students of color, economically disadvantaged students, and Title I (low-income) students all graduate at lower rates than their peers. In 2020, white students had a high school graduation rate of 86 percent, while Latinx, economically disadvantaged, and Title I students saw graduation rates of 75, 72, and 65 percent, respectively (Colorado Department of Education, 2021a).

A majority of white students complete state reading and math exams at proficient or advanced levels, while a majority of Latinx students score at basic or below basic levels. For example, in 2019, only 36 percent of Latinx students scored at or above the benchmark proficiency in math measurement exams compared to 57 percent of white students (Colorado Department of Education, 2019). These results are similar regarding SAT, ACT, and other standardized testing performances, as well (Meltzer & Robles, 2021).

College Affordability

Another driver is college affordability. Colleges and universities in Colorado are not affordable for students from middle to low-income families. Many boast a Pell Grant enrollment less than 20 percent, including the University of Colorado, Boulder at 16 percent (Gonzales, 2020). In 2020, CU Boulder was ranked as the fifth-lowest Pell Grant enrolling flagship university in the country (Gonzales, 2020). Furthermore, on average, only 45 percent of high school seniors complete their Free Application for Federal Student Aid (FAFSA) in Colorado; the state was ranked one of the worst in the nation for FAFSA completion in the 2018-19 academic year (Dutta, 2020). These statistics show that public colleges and universities in Colorado are not affordable for or accessible to Latinx students, who often hail from middle to low-income families.

Residency Complications

A third driver is the out-of-state student presence at Colorado colleges and universities. Most notably, in the past decade, the share of freshmen students from Colorado has shrunk, while the share from California has grown; out-of-state students are given tuition discounts to attend public colleges and universities in Colorado (Savidge, 2018). Despite its large tax base per capita, Colorado has consistently ranked 47th for per student higher education appropriations in the U.S. (Eason, 2019). Because of this low investment by the state, public institutions increasingly rely on tuition to offset costs and keep schools running, leaving students in Colorado both paying a much higher cost of education and competing with out-of-state students for enrollment.

Cost to Society

Cost to society is divided by three separate costs: direct, opportunity, and externality. In assessing the graduation rate of Latinx students in Colorado, the total cost to society would measure the cost of providing social safety net programs to students who do not graduate from college; the assumption is that student who do not graduate, or students who drop out, will result in direct costs to the state in the form of social safety net spending. This relays the importance of increasing Latinx student graduation rates, and graduation rates overall, for the State of Colorado. Upon evaluation, the total cost to society is $152,352,400,000, or $152 billion.

Direct Costs

To calculate the direct costs to society of those who drop out of higher education institutions, therefore negatively impacting graduation rates in Colorado, you need the total number of Latinx students at two- and four-year colleges and universities, the rate at which white students graduate, and the number of Latinx students who do graduate. 50,336 students are enrolled at higher education institutions in Colorado, and white students have a graduation rate of roughly 57 percent (Colorado Department of Higher Education, 2021f). If graduating at the rate of white students, 28,651 Latinx students would graduate per annum. In the 2020-21 academic year, 11,518 Latinx students graduated. Therefore, the number of Latinx students which the direct costs to society is the difference between 28,651 and 11,518, or 17,133 students.

These students are those whom potential policy alternatives could target in increasing the graduation rate of Latinx students in Colorado. If these students drop out because of financial, emotional, or societal hardship, they may be unable to find sufficient employment opportunities or will find lower paying employment. This may lead to their enrollment in federal and state safety net programs like unemployment compensation, SNAP, Medicaid, and Section 8 housing vouchers.

Using information from *Table 1*, the direct cost for an individual who is a family of one for five years and a member of a family of three for 20 years is $474,840.40. The direct cost for the 17,133 Latinx students who are at risk of not graduating, if they were to incur this same individual cost, is then roughly $8.14 billion total.

Table 1. Direct Costs to Society for Students Who Drop Out of Higher Education in Colorado

Average maximum yearly benefit for a one-person household under Colorado Works (Temporary Assistance for Needy Families): $3,336 (Colorado Department of Human Services, 2021a)	Individual is a one-person household for five years: **$16,680**
Average maximum yearly benefit for a three-person household under Colorado Works (Temporary Assistance for Needy Families): $5,796 (Colorado Department of Human Services, 2021a)	Individual is a three-person household for the next 20 years: **$115,920**

Average maximum yearly benefit for a one-person household in Colorado under the Supplemental Nutrition Assistance Program: $434.88 (Colorado Department of Human Services, 2021b)	Individual is a one-person household for five years: **$2,174.4**
Average maximum yearly benefit for a three-person household in Colorado under the Supplemental Nutrition Assistance Program: $724.8 (Colorado Department of Human Services, 2021b)	Individual is a three-person household for the next 20 years: **$14,496**
Average yearly childcare benefit for a child under 13 with the Colorado Child Care Assistance Program (CCCAP): $600 (Hindi, 2021)	Childcare for 12 years: **$7,200**
Average yearly spending for a Medicaid enrollee in Colorado: $4,898 (The Henry J. Kaiser Family Foundation, 2017)	Individual is a one-person household for five years: **$24,490** Individual is a three-person household for the next 20 years: **$293,880**

Opportunity Costs

To calculate the opportunity costs of failing to graduate with a college degree, you need to assess the value of costs not directly paid by society. For example, reduction in the state's potential for economic growth, the value of wages lost if an individual had not gained a college degree, or the income tax lost by the state resulting from the lost wages. On average, the 206,018 graduates awarded some form of financial aid could earn an average yearly salary of $20,000 more than if they had not earned a college degree (Colorado Department of Higher Education & College Measures, 2013). Over 30 years, this is an increase in wage by $600,000 per college graduate. For the 206,018 students, this would be a total increase in wages of $123 billion.

Another opportunity cost is the value of lost wages for each year a student had dropped out. If a college graduate earns, on average, $20,000 more than a high school graduate, we can assume that each year of college accounts for $5,000 more in post-graduate wages. Say a third of our 206,018 financial aid students, or 68,672 students, drop out after two years, creating a $10,000 loss per student. Over 30 years, each student would lose $300,000 in wage. For the 68,672 students, this would be a total loss in wages of $20,601,600,000. Therefore, the total opportunity cost is $144,212,400,000, or $144 billion.

Externalities

In college access and affordability, the number of externalities for those who drop out is limited. A potential example is a decrease in environmental sustainability efforts from students who drop out, as college campuses often encourage and make it easier to participate in such activities. However, as the cost of any externalities would be small, it is trivial in comparison to direct and opportunity costs in the total cost to society.

BACKGROUND

Colorado's Public Higher Education Institutions

Colorado is home to 251,778 students at 26 public two- and four-year institutions across the state (Colorado Department of Higher Education, 2021a). Of these institutions, 13 are four-year schools and 13 are public two-year community colleges, with 156,934 and 94,844 students enrolled, respectively. Furthermore, 85 percent of students are in-state residents, with a 15 percent out-of-state population. 53 percent are women and 47 percent are male; 89 percent are undergraduate students and 11 percent are graduate students. Over half of these students are white, at 145,029 total; 50,336 students, or 20 percent, are Latinx (Colorado Department of Higher Education, 2021a). *Table 2* provides a list of Colorado's public two- and four-year institutions, as well as their Latinx student enrollment in 2010 and 2020; enrollment is collected in the fall term (Colorado Department of Higher Education, 2021f).

Table 2. Latinx Enrollment in Public Colleges and Universities in Colorado, 2010 and 2020

INSTITUTION	***TYPE OF INSTITUTION***	***NUMBER OF LATINX STUDENTS ENROLLED IN FALL 2010***	***NUMBER OF LATINX STUDENTS ENROLLED IN FALL 2020***
Adams State University	4-Year Public	863	880
Colorado Mesa University	4-Year Public	938	1,893
Colorado School of Mines	4-Year Public	331	685
Colorado State University	4-Year Public	1,891	3,970
Colorado State University, Pueblo	4-Year Public	1,290	1,195
Colorado State University, Global Campus	4-Year Public	241	1,822
Fort Lewis College	4-Year Public	291	437
Metropolitan State University of Denver	4-Year Public	3,923	5,761
University of Colorado, Boulder	4-Year Public	2,111	4,452
University of Colorado, Colorado Springs	4-Year Public	964	2,198
University of Colorado, Denver	4-Year Public	1,829	3,892
University of Northern Colorado	4-Year Public	1,129	1,888

Western Colorado University	4-Year Public	93	425
Arapahoe Community College	Public Community College	934	1,766
Colorado NW Community College	Public Community College	94	171
Community College of Aurora	Public Community College	1,025	2,500
Community College of Denver	Public Community College	3,212	2,647
Front Range Community College	Public Community College	2,427	4,520
Lamar Community College	Public Community College	215	244
Morgan Community College	Public Community College	267	444
Northeastern Junior College	Public Community College	187	226
Otero College	Public Community College	513	470
Pikes Peak Community College	Public Community College	1,869	2,641
Pueblo Community College	Public Community College	2,356	1,921
Red Rocks Community College	Public Community College	1,233	1,212
Trinidad State College	Public Community College	809	612

Governance & Policy Jurisdiction

Public higher education in Colorado first began with the establishment of the Colorado Agricultural College in 1870 (Hannifin, 2022). The college rose from the Morrill Act, a federal act which provided land-grants for public colleges resulting from a need for the higher education of low-income individuals. Then Governor Edward McCook authorized Colorado Agricultural College, which is now known as Colorado State University, Fort Collins (Hannifin, 2022).

The Colorado Department of Higher Education (CDHE) and the Colorado Commission on Higher Education (CCHE), the agencies and individuals which manage higher education in Colorado, are governed and were set through the rules and regulations in the Private Occupational Education Act of 1981, Colorado Revised Statutes, and Article 64 of Title 23, "The Act." The Colorado Secretary of State website lists their official publication (Colorado Department of Higher Education, 2021g). While CCHE was first established in 1965, the Colorado General Assembly gave the CCHE its authority and directives through the passage of House Bill 1187 in 1985 (Colorado Department of Higher Education, 2021h). In 2008, Senate Bill 18-018 separated the CCHE from the CDHE to

help clarify the distinct roles of the two agencies (Colorado Department of Higher Education, 2021h).

The CDHE oversees policies and procedures of higher education. The CDHE has authority over academic affairs, such as admissions standards and student complaint policies, budget and finance, capital assets in infrastructure, statewide extended studies policies, information management and research, student services, and educational innovation (Colorado Department of Higher Education, 2021b). Its mission is to "support students, advocate and develop policies to maximize higher education opportunities for all."

The CCHE develops policies and admissions standards, as well as appropriates, directs, and recommends finances to the state legislature. The CCHE consists of 11 Commissioners, who bring varying experiences and skills; the Commissioners are media personas, scholars, and policy experts, among other professions (Colorado Department of Higher Education, 2021c). These Commissioners, listed in *Table 3*, are appointed by the Colorado Governor on four-year terms and are approved by the Colorado State Senate (Colorado Department of Higher Education, 2021c).

Table 3. Commissioners of the Colorado Commission on Higher Education

CCHE COMMISSIONERS (April 1, 2022)
Vanecia Kerr, Chair; Chief Impact Officer, Mile High United Way
Sarah Kendall Hughes, Vice Chair; Founder of Consulting Firm
Berrick Abramson; Senior Policy Director, Keystone Policy Center
Aaron Harber; Host, "The Aaron Harber Show"
Teresa Kostenbaur; University Relations, Arrow Electronics
Steve Meyer; CEO, Shaw Construction
Josh Scott; Investor and Advisor
Ana Temu Otting; Immigration Campaign Coordinator, American Civil Liberties Union of Colorado
Steven Trujillo; President & CEO, Pueblo Latino Chamber
Eric Tucker, Ph.D.; Director of Consulting and Assistant Professor of Management, United States Air Force Academy
Jim Wilson; Public Education and Retired State Representative

Within the CCHE, the Colorado Student Loan Program, the Colorado Community College System, and the Division of Private Occupational Schools command policies for their respective fields. The Colorado State Board of Education and the Colorado Department of Education have no explicit authority over higher education in the state (Colorado Department of Education, 2021b).

The Colorado General Assembly submits yearly budgets to its Joint Budget Committee, which evaluates CCHE funding recommendations as a direct appropriation. The Senate Education Committee considers legislative matters surrounding governance, tuition, and financial assistance for higher education and its institutions in Colorado and oversees the CDHE and the CCHE (Colorado General Assembly, 2021). The 2021-22 fiscal year state budget outlines $1.2 billion for higher

education spending, after $500 million in cuts from the $1.7 billion budget in 2020-21 (Gonzales & Meltzer, 2021).

State Financial Contribution

State funding in Colorado has not always ranked so low nationally. In 2000, the cost of college in Colorado was roughly 68 percent covered by the state (Associated Press, 2018). In recent decades, most funds have been funneled to larger state schools, such as those of the University of Colorado system. This poses an issue, as a large makeup of these schools consists of out-of-state students. As a result, many of the students benefitting from state funding are not Colorado residents (Eason, 2019).

Furthermore, state contributions per institution vary drastically. In the 2020-21 academic year, Colorado spent around $49 million on state awards for public two-year colleges and $139.4 million on state awards for public four-year colleges and universities, specifically for resident undergraduate students enrolled at least half time with a FAFSA on file. Around $1,450 were awarded per student at two-year institutions, while students at four-year institutions saw around $1,570 each (Colorado Department of Higher Education, 2021f). The state granted the most to Pikes Peak Community College and Metropolitan State University of Denver, $11 million and $22 million, respectively. Alternatively, the state granted the least to Colorado Northwestern Community College and Western Colorado University, $540,020 and $1.5 million (Colorado Department of Higher Education, 2021i).

The state has one of the lowest appropriation rates per full time enrollment in the country; in fiscal year 2020, it spent on average $3,387 per student (Colorado Department of Higher Education, 2022a). *Table 4* displays the distribution of state financial aid by ethnicity, residency status, and institution type (Colorado Department of Higher Education, 2021f).

Table 4. State Financial Aid Distribution in Colorado, 2020-21

INSTITUTION TYPE	***RESIDENCY STATUS***	***ETHNICITY***	***STATE AID***	***INSTITUTIONAL AID***
Community College	In-State	Latinx	$15,633,088	$1,817,886
Two	In-State	White	$23,732,889	$3,270,347
Four-Year Public	In-State	Latinx	$35,996,559	$65,557,756
Four	In-State	White	$49,492,378	$162,639,560
Two	Out-of-State	Latinx	$1,250	$556,517
Two	Out-of-State	White	$0	$435,235
Four	Out-of-State	Latinx	$1,955,009	$16,451,006
Four	Out-of-State	White	$52,766	$108,988,787

To offset a lack of state funding, students are strained in spending a large amount of their own funds to attend college or university. This discourages students from attending higher education institutions and receiving post-secondary degrees. Projections show that 74 percent of jobs in

Colorado will soon need an education higher than that of a high school degree, the second most educated workforce in the U.S. (Associated Press, 2018). Today, only 55 percent of employed adults in Colorado have such a degree (Associated Press, 2018).

Furthermore, students, knowing the importance of higher education as a resident of their state, often enter post-secondary instruction but are forced to drop out when they do not receive sufficient state or federal financial aid and exhaust their personal funds. In the fall of 2018, the retention rate for Latinx students from the year prior was 72 percent, while 80 percent of white students returned (Colorado Department of Higher Education, 2018).

Current Assistance Programs

In Colorado, state financial aid includes the Colorado Application for State Financial Aid, Colorado Need based Awards, Colorado Work-Study, Dependent Tuition Assistance Program, and the Colorado National Guard Tuition Assistance Program (Colorado Department of Higher Education, 2021d); however, not all higher education institutions in Colorado participate in each of these state financial aid alternative. To apply for state grants and scholarships, students must complete their FAFSA; students are automatically considered for state financial aid upon FAFSA completion (Colorado Department of Higher Education, 2021d). *Table 5* summarizes the dollar amount of aid distributed in Colorado for the 2020-21 academic year, along with the source of aid (Colorado Department of Higher Education, 2021f).

Table 5. Financial Aid Distributed in Colorado, 2020-21

FINANCIAL AID TYPE	***$ AMOUNT OF AID DISTRIBUTED***
State Financial Aid (CLEAP, SLEAP, Work Study, Undergraduate Merit, Graduate Need Based, CO TEACH Scholarship, etc.)	$193,989,121
Institutional Aid (Merit Based, Need Based, Scholarship Grant Loan, Employment, Award from Outside Funds)	$494,088,069
Federal Pell Grants	$224,234,784
Federal Loans (Perkins, Stafford, Federal Health Professional Loans)	$594,041,090
Other Federal Aid (SEOG, Federal Work Study, Federal TEACH Scholarship, GEAR UP, ACG, National SMART, etc.)	$23,742,765
Federal PLUS (PLUS, Graduate PLUS)	$250,198,396
Other Loans (Private Loans)	$117,891,817
Other Scholarships (Private Scholarships)	$104,842,215

In total, 132,490 college students at public two- and four-year institutions in Colorado received aid for the 2020-21 academic year. Of those students, 71,893 were white and 28,079 were Latinx; the third largest group which received financial aid was "race and ethnicity unknown" at 10,011 students (Colorado Department of Higher Education, 2021f). Latinx students received $53,555,906 in state

financial aid and $84,423,054 in institutional financial aid that year, while white students received $73,278,033 and $275,456,097, respectively. 28 percent of state financial aid, 17 percent of institutional aid, 30 percent of Federal Pell Grants aid, and 18 percent of federal loans were distributed to Latinx students in the 2020-21 academic year (Colorado Department of Higher Education, 2021f). Within state financial aid, 25,999 Latinx students had completed their FAFSA, while 2,080 had not, alluding to the amount of such aid which was distributed by merit as opposed to need based (Colorado Department of Higher Education, 2021f). However, the Colorado Department of Higher Education does not provide data breaking down the number of state financial aid distributed within each specific state program.

To qualify for Colorado State financial aid, students must meet the following requirements: Colorado residency, enrollment in an eligible program at an eligible Colorado postsecondary institution, satisfactory progress toward completion of a course of study, and no defaulted educational loans or grants (Colorado Department of Higher Education, 2021e). Aid is then distributed by the state legislature and the CCHE to the institution in which an eligible student is enrolled for funding to the student.

Public institutions may then issue state financial aid in the form of funds to pay for tuition, fees, room, board, books, supplies, or other relevant higher education expenses (Colorado Department of Higher Education, 2021e). This gives each institution immense autonomy in choosing how to best provide for their students, in addition to the autonomy they are given over the type of programs which they may institute to improve access to education and graduation rates at their school. The state does not distribute financial aid directly to students, all aid is directed towards institutions.

Federally, financial programs and aid for prospective college and university students include institutional grants, scholarships, and financial aid, as well as Title IV federal aid: Federal Pell Grant, Federal Supplemental Educational Opportunity Grant (SEOG), Federal Perkins Loan, and Federal Subsidized and Unsubsidized Direct Loans.

EXISTING EVIDENCE

The following pages will introduce four policy alternatives aimed at increasing the Latinx graduation rate. Evidence of their success will be provided, especially as and if pertaining to graduation rates.

Tuition-Free Community College, Promise Programs, & Last-Dollar Scholarships

In Colorado, a large out-of-state population, increasing privatization, and a generally decreasing trend of state financial aid make higher education often financially inaccessible. Implementing tuition-free community college, promise programs, and last-dollar scholarship programs would likely increase retention and completion rates and create new opportunities for the Latinx student population.

Over 20 states have implemented free community-college programs (Dickler, 2021). In 2008, Knox County, Tennessee established a program for local students to attend community college tuition-free (Page & Scott-Clayton, 2016). The opportunity grants free fees to any senior who signs up for "Knox Achieves," applies for financial aid, and meets with a mentor. Now, over 20 counties in Tennessee have developed similar programs, demonstrating both high demand and program success (Page & Scott-Clayton, 2016).

In an experiment which measured the propensity of low-income students to apply to and enroll at selective colleges and universities, results showed that knowing you will receive tuition-free college greatly increased student interest in flagship state universities (Dynarski et al., 2018). The tuition-free offer increased application rates from 26 to 68 percent, and increased enrollment rates from 12 to 27 percent (Dynarski et al., 2018). The experiment was situated in Michigan, looking at applications to the University of Michigan, with nine percent of the sample being Latinx, American Indian, or Pacific Islander. The study is not peer reviewed, as it is published in the National Bureau of Economic Research. While the experiment did include students of color, there was no breakdown of data to assess its impact directly on marginalized groups; instead, they reviewed effect on overall graduation rates (Dynarski et al., 2018). As a result, these increases could be skewed by white students, who are already more likely to have higher graduation rates than their peers of color.

A 2020 study in Texas found that tuition-free community college increased public two-and four-year graduation rates by 4 percent (Rice University & Houston Education Research Consortium, 2020). They concluded that, to make the cost of tuition-free community college equal to the benefit of increased graduation rates, the state of Texas must also include a tuition or fees expense subsidy for students each year; this approach is a hybrid of tuition-free community college and last-dollar scholarship programs. With tuition-free college and a tuition subsidy, the graduation rate increased 7 percent (Rice University & Houston Education Research Consortium, 2020).

Additionally, more than half of the country provides a variety of the college promise program. Promise programs are full in-state college tuition scholarships awarded to local high school

graduates (Page & Scott-Clayton, 2016). In 2005, the first promise program in the U.S. was established in Kalamazoo, Michigan for graduates of Kalamazoo Public Schools who had lived in the district for at least four years (Page & Scott-Clayton, 2016).

Graduates of the Kalamazoo Public School system who were enrolled from kindergarten through high school receive 100 percent funding; high school graduates enrolled for at least four years receive 65 percent tuition coverage (Collier & Parnther, 2018). All students are required to maintain a 2.0 grade point average, and have up to 10 years post-high school to use the funds to complete a four-year degree or earn at least 130 college credits (Collier & Parnther, 2018). One study from the Kalamazoo Promise Program explains that promise students are more motivated and devoted to their education in comparison to non-promise students (Collier & Parnther, 2018).

The study determined that the Kalamazoo Promise Program does increase graduation rates, but does not identify a specific margin of increase. However, before implementation, only 36 percent of students who would have qualified for the Kalamazoo Promise Program graduated from a higher education institution, and now, after earning promise funding, the estimation of graduation for such students rests at 48 percent (Collier & Parnther, 2018). A second study found that students at high schools in districts which offer promise programs are more likely to apply to and attend highly selective in-state institutions; the study did not discuss graduation rates explicitly (Page & Scott-Clayton, 2016). Both studies are peer reviewed, and are published in the Journal of College Student Retention and the Economics of Education Review, respectively.

At some colleges and universities in the Midwest, promise programs increased enrollment rates by around five percent and graduation rates by about 11 percent (Kelchen, 2017). A 42,000-student analysis expressed that those who signed up for a promise program, regardless of program completion, were 2.4 percentage points more likely to enroll in higher education, especially at in-state public colleges and universities (Kelchen, 2017). The Midwest hosts 56 promise programs across 12 states. These programs differ in eligibility requirements; some boast strict distance or residency length conditions, while others cover entire states and new residents. As a result, some promise programs are need based, while others are merit based. State agencies, if pursuing a promise program, must establish their own requirements using best practice data and assess success within promise programs of states of similar demographics and financial need.

Other states have solely instituted and evaluated last-dollar scholarship programs, as scholarships for low-income students are often not sufficiently robust (Dickler, 2020). Last-dollar scholarships can be more targeted and more impactful than tuition-free community college, which subsidizes both high- and low-income students. Last-dollar scholarships cover leftover fees, from books to tuition, that federal grants and institutional scholarships and other financial aid do not already fund (Bisht, 2021).

Peer & Faculty Mentoring

Peer and faculty mentoring is especially important for first-year college students as they navigate new horizons and seek a successful transition to university life (Levine & Nidiffer, 1996). Accessing mentoring prior to and post-college entrance can improve both life outcomes and educational outcomes. For Latinx students in Colorado, who comprise the second largest resident group but attend and graduate college at disproportionate rates, mentoring can also create a sense of familiarity and belonging in a space where they may not always feel comfortable. By developing a statewide mentoring program, Colorado should look to create an open dialogue surrounding the challenges Latinx students face in college attendance, and foster a caring environment which tackles emotional, mental, and academic success, growth, and management.

Receiving assistance from peer and faculty mentors improves attendance for students whose parents were not college attendees, and aids in distributing information on the college experience, preparatory courses, and the financial aid and admissions processes (Gandara & Mejorado, 2005; Stanton-Salazar, 2001). Those provided with mentoring while enrolled in higher education see a variety of improved learning outcomes; these students have higher grade point averages and are less likely to drop out (Terenzini et al., 1996).

One study in 2002 explored the benefit of faculty mentoring programs at California State University, Dominguez Hills on Latinx student outcomes (Santos & Reigadas, 2002). Not only did meeting with a faculty member improve educational results, but frequency of meetings also increases student self-efficacy. Student fears of academic success did not decrease while participating in mentoring; however, clarity of goals and their definition of success did improve (Santos & Reigadas, 2002). Their findings show that access to resources and information, and emotional support, do improve the success of higher education students. However, they did not focus on graduation rates, grade point average, or persistence rates, but rather adaptation to the university (Santos & Reigadas, 2002). The studies that Santos and Reigadas conducted in both 2002 and 2004, in which they followed-up to confirm the benefit of faulty mentoring, are both peer reviewed and published in the Journal of College Student Retention.

At Georgia State University (GSU), faculty take a more academic approach to mentoring (Georgia State University, 2021). Known as predictive analytics, students who underperform in prerequisite courses are contacted by a mentor. This ensures that no student 'slips through the cracks,' and allows them to improve without fear of the risk of unenrollment. With predictive analytics, GSU saved the graduating class of 2016 around $18 million in tuition; several students graduated early because of the help they received from their mentors (Georgia State University, 2021). Furthermore, GSU graduates Latinx, first-generation, and low-income students at a rate higher than that of the national rate, and GSU has increased their overall graduation rate by 23 percentage points (Georgia State University, 2021).

A further exploration determines that peer mentoring programs see just as much success as faculty mentoring programs. A 2016 study proves that a three times per week peer mentoring program improves university engagement and integration (Cornelius et al., 2016). Students strongly agreed that mentors provided them with valuable support and feedback and impacted their overall commitment and transition into college (Cornelius et al., 2016). Moreover, peer mentoring allowed students to make a social entrance into the university, a measure which faculty mentoring cannot achieve in any capacity. For these reasons, most studies which evaluate peer mentoring lack quantitative reasoning and are heavily qualitative.

However, a program at Vanderbilt University, which started in 1989, confirms the impact of peer mentoring on graduation rates. The Posse Program, which provides students groups in which to connect with others of similar interests, sees a graduation rate of 90 percent (Allen et al., 2007). Furthermore, these students are increasingly involved; at Vanderbilt, Posse Program members have established environmental change organizations and founded the school's first gospel choir, among other initiatives (Allen et al., 2007).

Evidence shows that faculty mentoring improves academic outcomes, while peer mentoring improves social outcomes. For college students experiencing hardship, or who feel they do not belong on campus, missing either of these aspects may lead to dropping out. By simultaneously implementing both mentoring programs, universities can combat low retention rates and improve graduation rates.

College Readiness & Preparation Programs

College readiness and preparation programs prepare students to apply to college, ensuring a sufficient academic background for success at their higher education institution. Readiness programs allow students access to information which they might not typically be exposed to, such as financial aid application tips, recommendations of appropriate colleges for their lifestyle, or best practices for applying. Preparation programs grant students coursework aid, from studying for national standardized tests to making the academic jump less straining and intimidating. Such information is often less accessible to students of color in comparison to their white peers, and for first generation college students. These disadvantages often discourage Latinx students from attending college or university, a trend recently seen in Colorado.

Two studies in Texas measured the impact of a lack of college preparatory programs on high school students of color (Welton & Martinez, 2014). They highlight the racism which students of color face in college applications, which often deters interest in higher education overall, regardless of readiness and preparation. They encourage the creation of readiness and preparation programs which consider the cultural context in which students of color attend college and university, and to use such information to develop programs which uplift these students while improving the access of knowledge (Welton & Martinez, 2014). Furthermore, they discuss the influence of the high school curriculum in addressing the college knowledge gap; all high school teachers should discuss college

preparation throughout a student's four years, rather than leaving such advising solely to designated counselors or programs (Welton & Martinez, 2014).

Another study assesses the influence of course completion track and preliminary SAT preparation programs on access to higher education (Cates & Schaefle, 2011). They conclude that such programs, along with general college advising, college campus visits, and the distribution of college information booklets, improve interest in higher education for at-risk high school students. Like the studies conducted in Texas, they discuss the impact of discrimination on aspirations of furthering education for students of color. Most intriguing, they found that such programs exert the most influence on 10th grade students (Cates & Schaefle, 2011).

The strength of evidence for college readiness and preparation programs is the weakest of the alternatives to improving access to higher education. The sector lacks widely peer reviewed evidence, and rarely discusses quantitative authentication in improving graduation rates.

State Performance & Outcome Measures

The State of Colorado could also award individual colleges and universities bonuses or vouchers in state funding for increasing the institutional graduation rates of Latinx students. In the last 10 years, many states have advanced financial aid based on performance and outcome measures. For example, in North Dakota, Ohio, and Oregon, funding is awarded to institutions across the state who achieve growth in student course completion and progression towards degree completion, among other success metrics (Snyder et al., 2016). This aligns with the mission of outcomes-based funding, in contrast to performance-based funding, which focuses more heavily on precise graduation rates and percentage growth (Snyder et al., 2016).

In 2007, the Washington State Board for Community and Technical Colleges instituted a Student Achievement Initiative, in which colleges and universities earned points towards supplemental funds in exchange for completion of certain metrics (Miao, 2012). These metrics include, but are not limited to, remedial course progress, college-level math course completion, and degree or certification fulfillment. Four years later, higher education institutions across the state had an average point growth of 31 percent (Miao, 2012).

However, much of the literature accounts negative or insignificant changes to graduation rates using state performance and outcome measures (Ortagus et al., 2020). In Indiana, Pennsylvania, and Tennessee, while some success metrics were enhanced by such state institutional funding, there was no evidence of enhanced graduation rates.

EVALUATIVE CRITERIA

The five policy alternatives, including status quo, which the state legislature, the CDHE, and the CCHE may consider in increasing the graduation rate of Latinx students will be evaluated based on four criteria: cost-effectiveness, equity, political feasibility, and ability to implement the program. Each criteria will be weighed equally in my recommendation, as an increasingly equitable policy cannot be implemented if Colorado's higher education institutions are not willing, and a policy that may feasibly pass in the state legislature cannot be implemented if it is grossly ineffective cost-wise.

However, the alternatives will be assessed against the criteria and scored on a scale of 1 through 5 based on how suitably the measures of the specific criteria are addressed: 1 as criteria dissatisfied, 2 as criteria somewhat dissatisfied, 3 as neutral, 4 as criteria somewhat satisfied, and 5 as criteria totally satisfied. The score of each criteria will be summed for a total score for each alternative, of which will determine my final recommendation.

Cost-Effectiveness

The cost-effectiveness criteria is determined with five primary factors: intended outcome, measure for the outcome, base year, region, and time horizon. In this policy problem, the outcome is the number of Latinx students who graduate from public two- and four-year colleges and universities in Colorado, which is traditionally reported by the CDHE as "academic year degrees awarded." Our 'status quo year' is 2019, and our time horizon is 10 years into the future through the 2031-32 academic year. As previously identified, the geographic region is the State of Colorado and the governing entities are the state legislature, the CDHE, and the CCHE.

Cost-effectiveness is the net present value of the costs over the sum of the outcomes. Essentially, this measures the cost of graduating one additional Latinx student in Colorado. The social discount rate is used to calculate the present value of consumption, and accounts for societal impatience and preference for use today; typically, three percent is used as the discount rate (Cellini & Kee, 1998). Cost-effectiveness provides whether the cost of the program will reflect equivalence through the number of Latinx student which would graduate given the program's implementation. Furthermore, cost-effectiveness will also be assessed next to the cost of society for those who have the potential to not graduate from their institution of higher education.

Equity

The equity criteria compares the outcomes of one group against another. In this policy problem, we are addressing the college achievement gap between white and Latinx students. Therefore, equitable policy alternatives should result in a ratio of Latinx graduates to the Latinx student population which is equivalent to the ratio of white graduates to the white student population.

As many of the alternatives concern increasing financial accessibility, they will likely target students from low-income families who do not identify as Latinx. While a positive externality and a force

contributing to greater equity in higher education, I will not be considering these yields in any of the criteria.

Political Feasibility

The political feasibility criteria provides that the governor, state legislature, CDHE, and CCHE would receive the alternative well, especially given the funding needs of each. Based on voting records for similar bills, press releases, and personal political statements and policy stances, how would legislators react to the alternative?

For a favorable scoring, a law for an alternative must be able to pass through a majority in the legislature and through the governor. Furthermore, the rules and regulations of an alternative must be approved by the CCHE Commissioners and CDHE.

Ability to Implement Program

The ability to implement criteria seeks to answer the question: would public two- and four-year colleges and universities in Colorado be able to reasonably implement this alternative if passed by the state legislature and governor and reviewed and approved by the CCHE and CDHE?

This criteria is difficult to determine, as it requires discussing the alternatives with staff and faculty at the public colleges and universities to conclude whether they would agree to implementing the program at their institution. Furthermore, it requires the proper technology and expertise to implement. However, by searching through school websites and seeking information on past programs and facilities at the institutions, I can make a calculated conclusion as to where each alternative would fall on the implementation criteria scale.

A NOTE ON COST-EFFECTIVENESS

Outcome Measure: Status Quo, Option 1

Each policy alternative will be assessed for cost-effectiveness given the total cost of higher education in Colorado and the projected number of Latinx graduates in the next 10 years, through the 2031-32 academic year. If the state were to continue with the status quo, the cost-effectiveness measure would be 8,241.[1] Impending alternatives will be evaluated on their measure of cost-effectiveness in comparison to one another and the status quo; this assessment will aid in the eventual recommendation of one alternative. *Table 6* in the appendix begins the analysis by computing an estimated growth rate of Latinx graduation based on the last 10 years, using said growth rate to approximate the expected number of Latinx graduates for the next 10 years. (Colorado Department of Higher Education, 2021f).

When averaged, the growth of Latinx graduates from the 2011-12 to 2020-21 academic year is 0.1076 percentage points, or 10.76 percent. Therefore, by multiplying each year by the growth rate, and adding that number to the original number of students, we can determine the projected number of Latinx graduates for the next 10 years. This begins by multiplying the growth rate with the number of Latinx students who graduated in 2021 to quantify the number of students who, given a consistent growth rate, graduate in 2022. *Table 7* in the appendix projects Latinx student graduation through the 2031-32 academic year, providing graduation numbers calculated with the growth rates.

Outcome Measure: Option 2 through Option 5

The outcome, number of Latinx graduates, is then projected through the time horizon for all alternatives. By assessing best practices across the country and utilizing their graduation rates, it is possible to estimate outcome growth. *Table 8* in the appendix displays such projections for Option 2 through Option 5. The graduation growth rates used for each option are listed below, as well as Appendix 1. Sources for such estimations are listed in Appendix 1, as well.

Base Year and Projected Costs

The next step is calculating costs for the status quo, as well as the alternatives, and projecting these costs over the time horizon. In this policy problem, status quo costs include state student financial aid spending, such as need based and work-based grants, institutional spending on student financial aid, and federal spending, such as Pell Grants and Federal Loans, on student financial aid, in addition to the cost of buildings at colleges and universities, the cost of campus upkeep, and the cost of staffing at these institutions. For the status quo, or Option 1, these costs were a total of $5,096,837,119 for the base year, explained in *Table 9* in the appendix.

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[1] For more information on how this measure, and others in cost-effectiveness, was calculated, see Appendix 1 on **Calculating Cost-Effectiveness**; Official sources are listed in Appendix 1, as well as in References

Then, after finding the historical growth rate of these costs and projecting the status quo cost into the time horizon,[2] you generate these cost projections for the additional alternatives.[3] You will use these quantities, summed together, as the cost value for net present value.

Net Present Value

Net present value can be easily calculated using an excel formula: [=NPV(3, cost values)]. The discount rate is represented by three in the equation; the social discount rate is used to calculate the present value of consumption, and accounts for societal impatience and preference for use today (Cellini & Kee, 1998). Cost-effectiveness uses 0.03, or three percent, for the discount rate.

- Net present value for Option 1 = $1,833,819,409.06
- Net present value for Option 2 = $1,833,819,409.06
- Net present value for Option 3 = $1,858,997,893.93
- Net present value for Option 4 = $1,841,006,076.89
- Net present value for Option 5 = $1,837,979,408.07

Cost-Effectiveness Measure

The final step is generating the cost effectiveness measure. This is done by dividing your net present value by the total number of projected individuals impacted by the policy alternative, or the number of projected Latinx graduates through the time horizon summed for each alternative.

- Option 1 = $1,833,819,409.06 / 222,524 = 8,241
- Option 2 = $1,833,819,409.06 / 483,724 = 3,791.04
- Option 3 = $1,858,997,893.93 / 965,625 = 1,925.18
- Option 4 = $1,841,006,076.89 / 244,079 = 7,542.66
- Option 5 = $1,837,979,408.07 / 450,690 = 4,078

[2] *Table 10* in the appendix
[3] *Table 11* in the appendix

POLICY ALTERNATIVES

Each alternative, if proved effective and subsequentially enacted, is to impact any qualifying student in Colorado. For that reason, not all Latinx students may qualify for each alternative. If an alternative is aid-driven, but a Latinx student does not qualify for FAFSA, then they are unlikely to receive any of the program-specific aid. This means that some alternatives may also provide service for qualifying white students, low-income students, other students of color. Yet, some alternatives may solely target Latinx students, regardless of financial aid qualification, such as peer and faculty mentoring.

Furthermore, as a state operated policy issue, these programs will be funded by state initiatives and, therefore, taxpayer dollars. Institutions across the state may expect a decrease in employee salaries [of prominent administrators] or a temporary halt in new facility construction to distribute state funding across the multitude of programs and initiative it supports. Amount needed to enact and implement each program will differ, as will the number of students who qualify and would benefit.

Option 1: Status Quo

Cost-Effectiveness

The net-present value of Option 1 is $1,833,819,409.06. The cost-effectiveness measure of Option 1 is 8,241. The criteria score for this alternative is 2.

Equity

In the 2020-21 academic year, 11,518 Latinx students and 40,628 white students graduated from a public two- or four-year college or university (Colorado Department of Higher Education, 2021f). Greater than half of college students in Colorado are white, at 145,029; 50,336 students, or 20 percent, are Latinx (Colorado Department of Higher Education, 2021f). If, in the status quo, 28 percent of the white student population graduates, to achieve an equitable outcome, 28 percent of the Latinx student population should graduate with each year. Currently, 22 percent of Latinx students are graduating. The growth rate of the status quo is 10.76 percent; by 2032, 30,978 Latinx students should graduate. The criteria score for this alternative is 1.

Political Feasibility

No policy changes would be required; the criteria score for this alternative is 4.

Ability to Implement Program

Some institutions have flourished in the status quo, while others have not. This depends on the sum of state financial aid each institution receives; those with more funding see greater success in graduating Latinx students than those with less funding. Institutions across the state are illustrations of the need for change, to establish policies and programs that may work more evenly across both two- and four-year schools in Colorado. The criteria score for this alternative is 3.

Option 2: Establish Tuition-Free Community College, Promise Programs, & Last-Dollar Scholarships

Each of these state to student funding alternatives would be implemented starting in the 2024-25 academic year. A state representative would be required to introduce the legislation, which would have to be passed by both the governor and the state legislature. This processes may take several years to implement, as the CDHE and CCHE would also need to adopt the policies. Rising high school seniors would begin the process in the summer of 2024, in which they would complete FAFSA and other state financial aid requirements before starting college or university in Fall 2025.

Cost-Effectiveness

In Colorado, 50 percent of the lottery reserve fund goes to the Great Outdoors Colorado Fund; however, if that amount exceeds $35 million, the leftover funding goes towards K-12 public education (Brady & Pijanowski, 2007). In this alternative, the lottery reserve fund would be split evenly between the Great Outdoors Colorado Fund, K-12, and higher education, amounting scholarships to around $15 million, plus a split between the sum of the leftover funding. As a result, the net-present value is the same quantity as that of status quo. The net-present value of Option 2 is $1,833,819,409.06. The cost-effectiveness measure of Option 2 is 3,791.04. The criteria score for this alternative is 4.

Equity

The growth rate of Option 2 is 11 percent (Kelchen, 2017). Growth rates for Option 2 through Option 5 will also include the status quo growth rate of 10.76 percent; therefore, the true growth rate of Option 2 is 22.9 percent. By 2032, 100,535 Latinx students should graduate, the second highest projection of each alternative. The criteria score for this alternative is 4.

Political Feasibility

Earlier in 2022, the State Senate voted on Senate Bill 22-008, which "would require all public higher education institutions in the state to waive undergraduate tuition and fees for Colorado residents who have been in foster care (Lopez, 2022)." The bill sees almost complete bipartisan support; however, a pair of Republican representatives have voted against it. If a bill targeted towards a subset of the Colorado college student population anticipates borderline support, it is unclear how further funding would differentiate within the group. The criteria score for this alternative is 3.

Ability to Implement Program

As two- and four-year institutions across the state already administer both state and institutional financial aid to students, these schools have the experience, expertise, and technology to continue to do so with additional funding streams. Furthermore, Colorado State University, Pueblo will begin their own test of a promise program in Fall 2022, in which "new first-time Colorado residents with a gross family income of $50,000 or less" will earn free-tuition (Robinson, 2021). Having an example of such an institution will benefit all public colleges and universities in Colorado if the legislature mandates statewide procedures. The criteria score for this alternative is 4.

Option 3: Develop Peer & Faculty Mentoring

College mentoring programs would be implemented starting in the 2022-23 academic year. Rising freshmen, sophomores, juniors, and seniors would be given the opportunity to complete an application in summer 2022 to begin mentoring in the fall. Peer and faculty mentoring is the most favorable alternative cost wise; peers would earn $15 an hour and faculty would enroll in mentoring on a volunteer basis.

Cost-Effectiveness

The net-present value of Option 3 is $1,858,997,893.93. The cost-effectiveness measure of Option 3 is 1,925.18. The criteria score for this alternative is 5.

Equity

The growth rate of Option 3 is 23 percentage points (Georgia State University, 2021); therefore, the true growth rate of Option 3 is 33.76 percent. By 2032, 253,650 Latinx students should graduate, the highest projection of each alternative by greater than twice the second highest projection. The criteria score for this alternative is 5.

Political Feasibility

As the cost-effectiveness measure is favorable for this alternative, it will likely pass in the state legislature. However, state representatives may be indifferent towards the alternative, as it is heavily reliant on institutional implementation rather than state mandated implementation. As a result, this policy alternative might be pushed to the background within the policy arena. The criteria score for this alternative is 3.

Ability to Implement Program

Developing peer and faculty mentoring across institutions would be difficult. It would require immediate action from faculty and students in signing up. Furthermore, it largely depends on the kind of individuals within each institution: whether such persons would be motivated to aid their peers or students. It also might be difficult to get students to enroll in the new program, even if they would see results in emotional and mental well-being. The criteria score for this alternative is 2.

Option 4: Form College Readiness & Preparation Programs

High school resiliency programs would be implemented starting in the 2022-23 academic year. Through collaboration of the Colorado Department of Higher Education and the Colorado Department of Education, program rollout could begin as early as this summer. Rising freshmen, sophomores, juniors, and seniors would be given the opportunity to complete an application to enroll in a free after school programs which would help guide them through the college process.

Cost-Effectiveness

15 mentors would be required per high school, and half of the students in each high school would enroll in the program. Each mentor would receive two hours of overtime pay: a typical teacher salary in Colorado is $60,000 for $28.85 an hour (Will, 2021). Overtime is time and a half, for $43.28 hourly (Colorado Department of Labor and Employment, 2022). This brings the cost of two hours of overtime service for 15 mentors, or teachers, for an individual school to $23,371.

Per school, this is around $43,400. There are 519 public high schools in Colorado (Colorado Department of Education, 2021c), bringing college readiness and preparation programs to about $22 million for the state when combined with mentor salary. Moreover, the net-present value of Option 4 is $1,841,006,076.89. The cost-effectiveness measure of Option 4 is 7,542.66. The criteria score for this alternative is 2.

Equity

The growth rate of Option 4 is 3 percentage points (Georgia State University, 2021); therefore, the true growth rate of Option 4 is 13.76 percent. By 2032, 28,421 Latinx students should graduate, the lowest projection of each alternative. The criteria score for this alternative is 1.

Political Feasibility

This alternative is not cost-effective; it reaches a small number of Latinx students, second only to status quo, but boasts extremely high costs. For these reasons, the state legislature will likely not pass this policy. The criteria score for this alternative is 2.

Ability to Implement Program

Rollout of the program might not be difficult, as materials would be distributed and available online. However, like peer and faculty mentoring, it relies heavily on the motivation of teachers to become after-school readiness & preparation mentors and students to sign up. It also assumes that high schools have individuals with such expertise and time, as well as assuming all high schools and their students have the proper technology to rollout these online materials. However, the Colorado Department of Higher Education has worked with private organizations to create some readiness tools, including a FAFSA information portal, making this policy somewhat possible (Colorado Department of Higher Education, n.d.). The criteria score for this alternative is 2.

Option 5: Determine State Performance & Outcomes Measures

Like the state to student funding alternatives of tuition-free community college, promise programs, and last-dollar scholarships, state performance & outcome measures would be implemented starting in the 2024-25 academic year. A state representative would be required to introduce the legislation, which would have to be passed by both the governor and the state legislature. This processes may take several years to implement, as the CDHE and CCHE would also need to adopt the policies.

Cost-Effectiveness

The net-present value of Option 5 is $11,837,979,408.07. The cost-effectiveness measure of Option 5 is 4,078. The criteria score for this alternative is 3.

Equity

The growth rate of Option 4 is 10 percent (Miao, 2012); therefore, the true growth rate of Option 4 is 21.8 percent. By 2032, 91,068 Latinx students should graduate, a higher than average projection. The criteria score for this alternative is 4.

Political Feasibility

In 2004, Colorado implemented the College Opportunity Fund, a plan for financing higher education through a voucher system (Prescott, 2010). Of the three stipulations in the policy, one affirmed a performance contract, in which institutions would receive a stipend if and when they met "agreed-upon goals relative to access and success, quality, efficient operations, and other activities in keeping with their roles and missions."

However, many conditions within the plan failed to see positive outcomes, including the performance contracts. Today, the College Opportunity Fund provides a stipend directly to undergraduate students, which may be redeemed for compensation for up to 145 class credit hours (Colorado Department of Higher Education, 2022b). For this reason, the state legislature will likely choose not to pass performance & outcomes measures; the criteria score for this alternative is 1.

Ability to Implement Program

The ability to implement for this policy is somewhat indeterminable. Past experiences show that there was little success with such measures; however, decades later, these programs might be easier for the state and individual institutions to implement and may show more promise in improving Latinx graduation rates, especially with a favorable equity criteria score. The state would likely be required to choose to implement these measures and reassess the continuation of the program at least five years after its institution.

However, they also rely on individual institutions to determine what programs would best improve Latinx graduation rates to then receive performance & outcome measure funding. This places a large burden on colleges and universities, especially for institutions that see low levels of state funding with the status quo. The criteria score for this alternative is 3.

OUTCOMES MATRIX

	ALTERNATIVES				
CRITERIA	Option 1: Status Quo	Option 2: Establish Tuition-Free Community College, Promise Programs, & Last-Dollar Scholarships	Option 3: Develop Peer & Faculty Mentoring Programs	Option 4: Form College Readiness & Preparation Programs	Option 5: Determine State Performance & Outcome Measures
Cost-Effectiveness	8,241 - 2	3,791.04 - 4	1,925.18 - 5	7,542.66 - 2	4,078 - 3
Equity	1	4	5	1	4
Political Feasibility	4	3	3	2	1
Ability to Implement	3	4	2	2	3
Final Score	**10**	**15**	**15**	**7**	**11**

RECOMMENDATION

Based on the scores above, it is recommended that the State of Colorado implement **Option 2: Establish Tuition-Free Community College, Promise Programs, & Last-Dollar Scholarships**. This option is scored favorably for both equity and ability to implement, while being the second to most cost-effective. Despite some potential difficulties passing in the state legislature, recent legislation and some institutional-level success with similar policies prove that it could be possible to establish such state to student financial aid across Colorado.

However, it is also recommended that the State of Colorado continues with status quo, along with the new financial aid streams associated with Option 2. Furthermore, in institutions within the bottom 50 percent of Latinx graduation rates in Colorado, it is suggested to establish **Option 3: Develop Peer & Faculty Mentoring Programs** in addition to status quo and Option 2 if Option 2 does not see a margin larger than 10 percentage points of growth within the first five years of its institution. Such negligible success may point to larger institution issues, rather than those concentrated on access to financial aid. Student mental and emotional well-being, as proven through existing evidence, plays just as large a role in student retention as college affordability does. While this option might be difficult to implement, the proper tools and institutional testing may lead to a large impact.

IMPLEMENTATION

To implement **Option 2: Establish Tuition-Free Community College, Promise Programs, & Last-Dollar Scholarships**, the State of Colorado must begin with a state representative sponsoring legislation that introduces such state to student funding. Representative Kyle Mullica, Majority Co-Whip of the Colorado House of Representatives, should introduce the bill, as he is a first-generation college graduate who has recently sponsored successful higher education legislation (Jaschik, 2021).

Once passed by the State General Assembly, Colorado Governor Jared Polis will sign the bill into law. Next, the CDHE and CCHE will begin the implementation process with several reviews and approval processes for institutional budget and program acquisition (Colorado Department of Higher Education, 2022c).

Each school will be required to submit a "plan describing the procedures and schedule for periodic program reviews and evaluation of each academic program" to the two agencies, ensuring that promise program and last-dollar scholarship funds will be distributed equitably at both two- and four-year institutions for both Latinx and low-income students at the risk of dropping out (Colorado Department of Higher Education, 2022c).

Then, the CCHE will determine the split of the programs budgets, and submit this for a final review to the Governor and General Assembly. Once appropriated, public two- and four-year colleges and universities in Colorado, and their students, may begin accessing these state to student funds.

For **Option 3: Develop Peer & Faculty Mentoring Programs**, once passed through the same legislative process as Option 2, the CDHE and CCHE should conduct a test of programs at select institutions. It is recommended to select an equal number of two- and four-year colleges and universities, especially choosing institutions who receive various amounts of status quo state financial aid funding as well as being within the bottom 50 percent of Latinx graduation rates in Colorado. Furthermore, public two- and four-year colleges and universities may apply for the trial of Option 3.

If these institutions encounter success in the growth of Latinx graduation rates, the CDHE and CCHE may offer discretionary adoption of Option 3 for public colleges and universities across the state.

APPENDIX

Calculating Cost-Effectiveness

1. **Project your outcome for your status quo into the future**

Table 6. Growth Rate Latinx Student in Colorado, 2011-21

NUMBER OF LATINX GRADUATES IN…	GROWTH RATE FROM PREVIOUS YEAR
2011	N/A
2012	12%
2013	11%
2014	16%
2015	13%
2016	10%
2017	9%
2018	10%
2019	12%
2020	4%
2021	7%

Table 7. Projection of Latinx Student Graduation with Status Quo, Option 1

NUMBER OF LATINX GRADUATES IN…	WITH GROWTH RATE CALCULATION
2022	12,600
2023	13,784
2024	15,079
2025	16,496
2026	18,046
2027	19,742
2028	21,597
2029	23,660
2030	25,884
2031	28,317
2032	30,978

2. Project the outcomes for all your other alternatives into the future

Table 8. Projection of Latinx Student Graduation with Option 2 Through Option 5

NUMBER OF LATINX GRADUATES IN…	***OPTION 2; 22.9% growth***	***OPTION 3; 33.76% growth***	***OPTION 4; 13.76% growth***	***OPTION 5; 21.8% growth***
2022	12,790	13,920	11,839	12,675
2023	15,718	18,619	13,468	15,438
2024	19,317	24,888	15,321	18,803
2025	23,740	33,267	17,429	22,902
2026	29,176	44,467	19827	27,894
2027	35,857	59,439	22,555	33,974
2028	44,068	79,452	25,658	41,380
2029	54,159	106,203	26,098	50,400
2030	66,561	141,961	29,689	61,387
2031	81,803	189,759	33,774	74,469
2032	100,535	253,650	28,421	91,068

3. Develop the cost for your current policy in the Base Year

Table 9. Base Year, Status Quo Policy Costs

Need based grants, merit-based grants, work-based grants, categorical programs[4] (Colorado Department of Higher Education, 2019)	State spending on student financial aid in Colorado = $182,614,397
Institutional spending on student financial aid in Colorado (Colorado Department of Higher Education, 2019)	$886,330,912
Pell Grant, Federal Loans, Federal Other (Colorado Department of Higher Education, 2019)	Federal spending on student financial aid in Colorado = $1,670,621,810
Number of square feet in capital at public colleges and universities Colorado = 39,100,000 (Colorado Commission on Higher Education, 2004) Average cost per square foot = $6.08 (Colorado Commission on Higher Education, 2004)	Cost of public colleges and universities buildings = $237,728,000
Average cost per square foot in upkeep = $2.30 (Colorado Commission on Higher Education, 2004)	Cost of public colleges and universities buildings in upkeep = $89,930,000
Average professor salary in Colorado = $66,516 Average administrative salary in Colorado = $120,228 Average other college staff salary in Colorado = $47,443 Average number of staff at public colleges and universities = 1,000	Cost of public colleges and universities staff = $2,029,612,000

- Total cost for current policy in base year, 2019 = **$5,096,837,119**

[4] Categorical programs = The Law Enforcement/POW/MIA Dependents Tuition Assistance, The Native American Tuition Assistance Program, National Guard Tuition Assistance Program, Career and Technical Education Grant Program

4. Project your cost for current policy 10 years into the future

Table 10. Ten-Year Projection, Status Quo Policy Costs

State spending = $205,459,458 Institutional spending = $968,759,686 Federal spending = $1,858,399,701 Buildings = $241,840,694 Upkeep = $91,485,789 Salaries = $2,033,468,262	2022 = $5,399,413,590
State spending = $231,162,436 Institutional spending = $1,058,854,336 Federal spending = $2,067,283,827 Buildings = $246,024,538 Upkeep = $93,068,493 Salaries = $2,037,331,851	2023 = $5,733,725,481
State spending = $260,080,856 Institutional spending = $1,157,327,789 Federal spending = $2,299,646,529 Buildings = $28,737,457 Upkeep = $94,678,577 Salaries = $2,041,202,781	2024 = $5,881,673,989
State spending = $292,616,971 Institutional spending = $1,264,959,273 Federal spending = $2,558,126,798 Buildings = $29,234,615 Upkeep = $96,316,516 Salaries = $2,045,081,066	2025 = $6,286,335,239
State spending = $329,223,354 Institutional spending = $1,382,600,485 Federal spending = $2,845,660,250 Buildings = $29,740,373 Upkeep = $97,982,791 Salaries = $2,048,966,720	2026 = $6,734,173,973
State spending = $370,409,195 Institutional spending = $1,511,182,330 Federal spending = $3,165,512,462 Buildings = $30,254,881 Upkeep = $99,677,893 Salaries = $2,052,859,756	2027 = $7,229,896,517
State spending = $416,784,426 Institutional spending = $1,651,722,286 Federal spending = $5,421,316,062 Buildings = $30,778,290 Upkeep = $101,402,320 Salaries = $2,056,760,189	2028 = $9,678,763,573
State spending = $468,924,157 Institutional spending = $1,805,332,458	2029 = $10,500,063,969

Federal spending = $6,030,671,987 Buildings = $31,310,754 Upkeep = $103,156,580 Salaries = $2,060,668,033	
State spending = $527,586,569 Institutional spending = $1,973,228,376 Federal spending = $6,708,519,518 Buildings = $31,852,430 Upkeep = $104,941,188 Salaries = $2,064,583,302	2030 = $11,410,711,383
State spending = $591,688,337 Institutional spending = $2,156,738,614 Federal spending = $7,462,557,111 Buildings = $32,403,477 Upkeep = $106,756,670 Salaries = $2,068,506,010	2031 = $12,418,650,219
State spending = $665,708,547 Institutional spending = $2,357,315,305 Federal spending = $8,301,348,530 Buildings = $32,964,057 Upkeep = $108,603,560 Salaries = $2,072,436,171	2032 = $13,538,376,170

- Growth rate of state spending on financial aid from 2009-2019 (Colorado Department of Higher Education, 2019) = 12.51 %
- Growth rate of institutional spending on financial aid from 2014-2019 (Colorado Department of Higher Education, 2019) = 9.3%
- Growth rate of federal spending on financial aid from 2014-2019 (Colorado Department of Higher Education, 2019) = 11.24%
- Growth rate of added square footage = 1.73% (Colorado Commission on Higher Education, 2004)
- Growth rate of upkeep spending (repairment, improvements, etc.) = 1.73% (Colorado Commission on Higher Education, 2004)
- Growth rate of staff salary = 0.19% (Delfino, 2021)

5. **Generate the cost of all alternatives over the time horizon and add those to your costs of the Status Quo**

Table 11. Policy Alternative Cost Projections

Option 2 = Tuition-free Community College, Promise Programs, and Last-Dollar Scholarships Alternative cost = **$15,000,000**	As the $15 million is derived from the lottery reserve fund, the projected costs for Option 2 for the next ten years is the same as that of the status quo (Option 1)
Option 3 = Peer and Faculty Mentoring Programs Alternative cost = Around 150 peer mentors at 13 four-year institutions and 20 peer mentors at 13 two-year institutions for $15 per hour each (at least 16 hours of mentoring a year) and staff volunteers = **$530,400**	2022 = $5,499,943,990 2023 = $5,734,255,881 2024 = $5,882,204,389 2025 = $6,286,865,639 2026 = $6,734,704,373 2027 = $7,230,426,917 2028 = $9,679,293,973 2029 = $10,500,594,369 2030 = $11,411, 241,783 2031 = $12,419,180,619 2032 = $13,538,906,570
Option 4 = College Readiness and Preparation Programs Alternative cost = **$22,000,000**	2022 = $5,421,413,590 2023 = $5,755,725,481 2024 = $5,903,673,989 2025 = $6,308,335,239 2026 = $6,756,173,973 2027 = $7,251,896,517 2028 = $9,700,763,573 2029 = $1,052,206,396 2031 = $11,432,711,383 2031 = $12,440,650,219 2032 = $13,560,376,170
Option 5 = State Performance and Outcome Measures Alternative cost = $480,000 for 26 colleges and universities **= $12,480,000**	2022 = $5,411,893,590 2023 = $5,746,205,481 2024 = $5,894,153,989 2025 = $6,298,815,239 2026 = $6,746,653,973 2027 = $7,242,376,517 2028 = $9,691,243,573 2029 = $10,512,543,969 2030 = $11,423,191,383 2031 = $12,431,130,219 2032 = $13,550,856,170

REFERENCES

Allen, T. D., Turner De Tormes, L., Eby, T. (2007). "The Blackwell Handbook of Mentoring." *Wiley*.

Associated Press. (2018). *Colorado Isn't Funding Higher Ed Like It Used To, So Students Make Up the Difference*. CPR News. Retrieved from https://www.cpr.org/2018/05/24/colorado-isnt-funding-higher-ed-like-it-used-to-so-students-make-up-the-difference/.

Brady, K. P., Pijanowski, J. C. (2007). "Maximizing State Lottery Dollars for Public Education: An Analysis of Current State Lottery Models." *Journal of Educational Research & Policy Studies, 7*(2). Retrieved from https://files.eric.ed.gov/fulltext/EJ809436.pdf.

Bisht, I. S. (2021). *Is Community College Free? In These 19 States, Yes*. The College Post. Retrieved from https://thecollegepost.com/free-community-college-states/.

Cates, J. T., Schaefle, S. E. (2011). "The Relationship Between a College Preparation Program and At-Risk Students' College Readiness." *Journal of Latinos and Education, 10(4),* pp. 320-334.

Cellini, S. R., Kee, J. E. (1998) "Cost-effectiveness and cost-benefit analysis." *The Genetic Resource, 11*(20), pp. 20-1.

Collier, D. A., Parnther, C. (2018). "Conversing With Kalamazoo Promise Scholars: An Inquiry into the Beliefs, Motivations, and Experiences of Tuition-Free College Students." *Journal of College Student Retention: Research, Theory & Practice, 22*(4). 572-596. https://doi.org/10.1177/1521025118774561.

Colorado Commission on Higher Education. (2004). *Capital Construction Program*. Colorado Department of Higher Education. Retrieved from https://highered.colorado.gov/Publications/Reports/Capital/FY2004/0304_annualrpt.pdf.

Colorado Department of Education. (2019). *Academic Proficiency*. Colorado Department of Education. Retrieved from https://www.cde.state.co.us/fedprograms/academicproficiency.

Colorado Department of Education. (2021a). *News Release. State's four-year graduation rate increases to 81.9%*. CDE Communications Division. Retrieved from https://www.cde.state.co.us/cdereval/2020studentendofyearpressreleaseversionthree.

Colorado Department of Education. (2021b). *Colorado Higher Education*. Colorado Department of Education. Retrieved from https://www.cde.state.co.us/cdecomm/cdehighered.

Colorado Department of Education. (2021c). *Colorado Education Facts and Figures*. Colorado Department of Education. Retrieved from https://www.cde.state.co.us/communications/coeducationfactsandfigures.

Colorado Department of Higher Education. (n.d.). *Student Level FAFSA Completion Status*. Colorado Department of Higher Education. Retrieved from https://www.cde.state.co.us/postsecondary/sccgp-fafsa-update.

Colorado Department of Higher Education. (2018). *Retention Rates (2017-2018)*. Colorado Department of Higher Education. Retrieved from Educationhttps://highered.colorado.gov/Publications/Reports/Enrollment/FY2018/2018_RetentionRates.pdf.

Colorado Department of Higher Education. (2019). *Fiscal Year 2018-19 Financial Aid Report*. Colorado Department of Higher Education. Retrieved from https://highered.colorado.gov/Publications/Reports/FinancialAid/FY2019/201819_FAReport_rel11272019.pdf.

Colorado Department of Higher Education. (2021a). *Colleges & Universities*. State of Colorado. Retrieved from https://highered.colorado.gov/Data/Colleges/Default.aspx.

Colorado Department of Higher Education. (2021b). *CCHE Policies and Procedures*. State of Colorado. Retrieved from https://cdhe.colorado.gov/educators/policy-funding/cche-policies-procedures.

Colorado Department of Higher Education. (2021c). *Commissioners*. State of Colorado. Retrieved from https://cdhe.colorado.gov/about-cche/general-information/commissioners.

Colorado Department of Higher Education. (2021d). *Financial Aid for Students*. State of Colorado. Retrieved from https://cdhe.colorado.gov/students/preparing-for-college/financial-aid-for-students.

Colorado Department of Higher Education. (2021e). *General Information and Eligibility Requirements*. State of Colorado. Retrieved from https://cdhe.colorado.gov/general-information-and-eligibility-requirements.

Colorado Department of Higher Education. (2021f). *Search Data*. State of Colorado. Retrieved from https://highered.colorado.gov/Data/Search.aspx.

Colorado Department of Higher Education. (2021g). *Laws & Regulations*. State of Colorado. Retrieved from https://cdhe.colorado.gov/laws-regulations.

Colorado Department of Higher Education. (2021h). *History*. State of Colorado. Retrieved from https://cdhe.colorado.gov/history.

Colorado Department of Higher Education. (2021i). *Fiscal Year 2020-21, Financial Report*. State of Colorado. Retrieved from https://highered.colorado.gov/Publications/Reports/FinancialAid/FY2021/202021_FAReport.pdf.

Colorado Department of Higher Education. (2022a). *Tuition Fees Report Fiscal Year 2021-22, January 2022*. State of Colorado. Retrieved from https://highered.colorado.gov/Publications/Reports/Budget/FY2022/2022_tuitionfeesreport.pdf.

Colorado Department of Higher Education. (2022b). *The College Opportunity Fund*. State of Colorado. Retrieved from https://cdhe.colorado.gov/programs-services/the-college-opportunity-fund.

Colorado Department of Higher Education. (2022c). *CCHE Policies & Procedures*. State of Colorado. Retrieved from https://cdhe.colorado.gov/educators/policy-funding/cche-policies-procedures#aa.

Colorado Department of Higher Education & College Measures. (2013). *Higher Education Pays: The Initial Earnings of Graduates from Colorado's Colleges and Universities Working in Colorado*. College Measures' Economic Success Metrics Project.

Colorado Department of Human Services. (2021a). *Colorado Works (TANF)*. State of Colorado.

Colorado Department of Human Services. (2021b). *Supplemental Nutrition Assistance Program (SNAP).* State of Colorado.

Colorado Department of Labor and Employment. (2022). *Overtime.* State of Colorado. Retrieved from https://cdle.colorado.gov/wage-and-hour-law/overtime.

Colorado Equity Champions Coalition. (2020). *Report on Educational Equity: Creating a Colorado for All.* Colorado Department of Higher Education. Retrieved from https://highered.colorado.gov/Publications/Reports/Equity/EquityReport_2020.pdf.

Colorado General Assembly (2021). *Senate Committee of Reference, Education.* Colorado General Assembly. Retrieved from https://leg.colorado.gov/committees/education/2021-regular-session.

Cornelius, V., Wood, L., Lai, J. (2016). "Implementation and evaluation of a formal academic-peer-mentoring programme in higher education." *Active Learning in Higher Education, 17*(3), pp 193-205.

Delfino, D. (2021). *Study: For Full-Time College Faculty, Inflation-Adjusted Salaries Up Only 9.5% Since 1970.* Student Loan Hero. Retrieved from https://studentloanhero.com/featured/historical-faculty-pay-study/.

Dickler, J. (2020). *Here's how to go to college for free.* CNBC LLC. Retrieved from https://www.cnbc.com/2020/07/10/heres-how-to-go-to-college-for-free.html.

Dickler, J. (2021). *Free college could become a reality under a Biden administration.* CNBC LLC. Retrieved from https://www.cnbc.com/2021/01/18/biden-administration-free-college.html.

Dutta, P. (2020). *FAFSA Completion in Colorado.* Democrats for Education Reform. Retrieved from https://dfer.org/co/fafsa-completion-colorado/.

Dynarski. S. Libassi, C. J. Michelmore, K. Owen, S. (2018). "Closing the Gap: The Effect of a Targeted, Tuition-free Promise on College Choices of High-achieving, Low-income Students." *National Bureau of Economic Research.*

Eason, B. (2019). *Colorado's universities are catering to out-of-state students. Is their public mission at risk?* The Colorado Sun. Retrieved from https://coloradosun.com/2019/02/25/colorado-universities-out-of-state-enrollment/.

Education Reform Now. (2022). *About Us.* Education Reform Now. Retrieved from https://edreformnow.org/about/.

Excelencia in Education. (2021a). *Latino College Completion – Colorado.* Excelencia in Education. Retrieved from https://www.edexcelencia.org/research/latino-college-completion/colorado.

Excelencia in Education. (2021b). *Latino College Completion – Nebraska.* Excelencia in Education. Retrieved from https://www.edexcelencia.org/research/latino-college-completion/nebraska.

Excelencia in Education. (2021c). *Latino College Completion – Oregon.* Excelencia in Education. Retrieved from https://www.edexcelencia.org/research/latino-college-completion/oregon.

Excelencia in Education. (2021d). *Latino College Completion – Washington.* Excelencia in Education. Retrieved from https://www.edexcelencia.org/research/latino-college-completion/washington.

Gandara, P., Mejorado, M. (2005). "Putting Your Money Where Your Mouth Is: Mentoring as a Strategy to Increase Access to Higher Education." In W.G. Tierney, Z.B. Corwin, and J.ED. Colyar (Eds.) *Preparing for College: Nine Elements of Effective Outreach*, pp. 89–110. Albany, NY: SUNY Press.

Georgia State University. (2021). *Leading with Predictive Analysis*. Georgia State University. Retrieved from https://success.gsu.edu/approach/.

Gonzales, J. (2020). *CU Boulder struggles to enroll low-income students. That has consequences for Coloradans' social mobility*. Chalkbeat. Retrieved from https://co.chalkbeat.org/2020/11/30/21720926/university-of-colorado-boulder-enroll-low-income-pell-students-social-mobility.

Gonzales, J., Meltzer, E. (2021). *Colorado's 2022 budget boosts K-12 spending, restores higher ed cuts*. Chalkbeat. Retrieved from https://co.chalkbeat.org/2021/4/5/22368977/colorado-proposed-34-billion-budget-k-12-higher-ed-funding-increase.

Hannifin, J. (2022). *What's a Land Grant University, and Why Should I Care?* Colorado State University Online. Retrieved from https://blog.online.colostate.edu/blog/uncategorized/whats-a-land-grant-university-and-why-should-i-care/.

The Henry J. Kaiser Family Foundation. (2017). *Medicaid's Role in Colorado*. The Henry J. Kaiser Family Foundation.

Hindi, S. (2021). *Colorado putting $275 million to help make childcare centers, preschool programs more affordable*. MediaNews Group, Inc.

Jaschik, S. (2021). *Legacy Admissions Banned in Colorado*. Inside Higher Ed. Retrieved from https://www.insidehighered.com/admissions/article/2021/06/01/colorado-bars-public-colleges-using-legacy-admissions.

Kelchen, R. (2017). *A Review of College Promise Programs: Evidence from the Midwest*. Midwestern Higher Education Compact. Retrieved from https://files.eric.ed.gov/fulltext/ED587430.pdf.

Levine, A., Nidiffer, J. (1996). *Beating the Odds: How the Poor Get to College*. San Francisco, CA: Jossey-Bass.

Lopez, M. (2022). *Bill would provide free college tuition to Colorado youth in foster care*. Denver News, ABC 7. Retrieved from https://www.thedenverchannel.com/news/local-news/bill-would-provide-free-college-tuition-to-colorado-youth-in-foster-care.

Miao, K. (2012). *Performance-Based Funding of Higher Education*. Center for American Progress. Retrieved from https://files.eric.ed.gov/fulltext/ED535548.pdf.

Meltzer, E., Robles, Y. (2021). *CMAS results: Colorado students lost ground during year of disrupted learning*. Chalkbeat Colorado. Retrieved from https://co.chalkbeat.org/2021/8/12/22621936/cmas-results-colorado-students-lost-ground-pandemic-remote-learning-covid-state-tests.

National Center for Education Statistics. (n.d.). *Graduation rates*. U.S. Department of Education. Retrieved from https://nces.ed.gov/fastfacts/display.asp?id=40.

Ortagus, J. C., Kelchen, R., Rosinger, K., Voorhees, N. (2020). "Performance-Based Funding in American Higher Education: A Systemic Synthesis of the Intended and Unintended Consequences." *Educational Evaluation and Policy Analysis, 42*. pp. 520-550.

Page, L. C., Scott-Clayton, J. (2016). "Improving college access in the United States: Barriers and policy responses."*Economics of Education Review, 51*. pp. 4-22. https://doi.org/10.1016/j.econedurev.2016.02.009.

Prescott, B. T. (2010). *Is Colorado's Voucher System Worth Vouching For?* Taylor & Francis Ltd.

Rice University & Houston Education Research Consortium. (2020). *Will tuition-free college increase college graduation rates?* Houston Education Research Consortium. Retrieved from https://files.eric.ed.gov/fulltext/ED607679.pdf.

Robinson, H. S. (2021). *Colorado Promise Offers Free Tuition to Students in Colorado with Family Income of $50,000 or less*. Colorado State University Pueblo. Retrieved from https://www.csupueblo.edu/news/2021/12-1-colorado-promise-offers-free-tuition-to-students-in-colorado-with-family-income-of-50,000-or-less.html.

Santos, S. J., Reigadas, E. T. (2002). "Latinos in Higher Education: An Evaluation of a University Faculty Mentoring Program." *Journal of Hispanic Higher Education*, *1*(1), pp. 40-50.

Savidge, N. (2018). *California students find tuition discounts, less-crowded campuses out of state*. EdSource. Retrieved from https://edsource.org/2018/california-students-find-tuition-discounts-less-crowded-campuses-out-of-state/605431.

Snyder, M., Fox, B., Moore, C. (2016). *State Finance Policy Best Practices*. National Commission on Financing 21st Century Higher Education. https://millercenter.org/issues-policy/us-domestic-policy/national-commission-on-financing-21st-century-higher-education.

Stanton-Salazar, R. (2001). *Manufacturing Hope and Despair: The School and Kin Support Networks of U.S.-Mexican Youth*. New York, NY: Teachers College Press.

Terenzini, P. T ., Pascarella, E. T., Blimling, G.S. (1996). "Students Out-of-class Experiences and their Influence on Learning and Cognitive Development: A Literature Review." *Journal of College Student Development*, *37*, 149–162.

United States Census Bureau. (2019). *QuickFacts Colorado*. U.S. Department of Commerce. Retrieved from https://www.census.gov/quickfacts/fact/table/CO/RHI725219#RHI725219.

Urban Institute. (2021). *Higher Education Expenditures*. Urban Institute. Retrieved from https://www.urban.org/policy-centers/cross-center-initiatives/state-and-local-finance-initiative/state-and-local-backgrounders/higher-education-expenditures.

Welton, A. D., Martinez, M. A. (2014). "Coloring the College Pathway: A More Culturally Responsive Approach to College Readiness and Access for Students of Color in Secondary Schools." *Urban Review*.

Will, M. (2021). *Teacher Salaries Are Increasing. See How Your State Compares*. Education Weekly. Retrieved from https://www.edweek.org/teaching-learning/teacher-salaries-are-increasing-see-how-your-state-compares/2021/04.