October 2019

Strategic Finance Plan for Virginia

Aligning Higher Education Finances and Strategies

Prepared by Strategy Labs in partnership with the State Council of Higher Education for Virginia

STATE COUNCIL OF HIGHER EDUCATION FOR VIRGINIA

STRATEGY LABS
State Policy to Increase Higher Education Attainment

SUPPORTED BY Lumina FOUNDATION

Acknowledgements

This report was developed with the support of Lumina Foundation's Strategy Labs. Lumina Foundation is an independent, private foundation in Indianapolis that is committed to making opportunities for learning beyond high school available to all. The foundation envisions a system that is easy to navigate, delivers fair results, and meets the nation’s need for talent through a broad range of credentials. Lumina’s goal is to prepare people for informed citizenship and for success in a global economy. Strategy Labs is Lumina Foundation's platform for supporting state policy and leadership to increase postsecondary attainment.

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EXECUTIVE SUMMARY

Postsecondary education is crucial for Virginia's sustained economic prosperity and for individual Virginians' success in the workforce. Policymakers, businesses and educators have a stake in ensuring that every Virginian can achieve a high quality and affordable postsecondary education, with a goal of obtaining a workforce credential, certificate or degree. Recognizing this, in 2014, the State Council of Higher Education for Virginia (SCHEV) developed The Virginia Plan for Higher Education (The Virginia Plan). Its objective is straightforward: by 2030, Virginia will be home to the best-educated population in the nation, thereby enhancing the civic and financial health of the Commonwealth and well-being of its people. To reach this goal, Virginia estimates that 70% of the working-age population (ages 25-64) will need a workforce credential or degree (certificate, associate, bachelor's or greater).

To help policymakers better align finance strategies with The Virginia Plan's goal, SCHEV partnered with HCM Strategists, a national higher education policy organization, with support from Lumina Foundation's Strategy Labs, to develop this report, a *Strategic Finance Plan for Virginia.* Key results show that:

- Virginia's cost per degree is lower than the national average and has decreased over time—for each additional expenditure, Virginia's public institutions, on average, provide a better return on investment than other states and over time.
- When assessing degree demand compared to degree estimates by institution, the state may not meet the 70% attainment goal without increased focus on credentials, certificates and associate degrees. For bachelor's degrees, the expected degree estimates align with demand, but shortages could continue in specific occupational areas, such as teaching, health care and technology.
- Gaps in access and success by race and ethnicity, income and regions of the state threaten Virginia's ability to reach its attainment goal. Closing these gaps must be considered in any funding strategy.
- To meet this goal, an estimated $400 million in additional annual expenditures (from any source) will be needed, based on current dollars, using SCHEV-specific cost data.
- Virginia could begin to address these gaps by implementing funding strategies in three areas: (1) aligning existing funding with completion priorities (2) increasing affordability (3) providing support to target populations.

While Virginians are rightly proud of the Commonwealth's system of higher education, current finance strategies could be better aligned with the goals of The Virginia Plan and existing needs to reach the 70% attainment goal. Improved access to and completion of postsecondary education programs by underrepresented populations (those who are low-income, minority race/ethnicity or from areas of the state with low attainment rates), affordability and workforce alignment are three examples of areas needing attention.

For instance, Virginia's current methodology to assess base operational funding needs (referred to as base adequacy) relies heavily on inputs such as the number of students enrolled, faculty salaries and faculty/student ratios. It does not incorporate outcomes such as the numbers of degrees awarded or differentiate funding based on underrepresented populations. Such groups often require additional resources.

Furthermore, supporting postsecondary education is easier during periods of economic growth. Students and families' incomes are higher, state revenues are stable or growing and private investment returns tend to be strong. When an economic downturn occurs, those trends can reverse quickly. Virginia could do a better job preparing for downturns and ensuring that the system is as efficient as possible.

This report is a first step in meeting the state's 70% attainment goal and focuses on the basic needs, populations and operational costs associated with meeting the goal. Financial aid, institutional support, capital construction and policy alignment can be focal points for SCHEV in the future.

The report contains six sections:

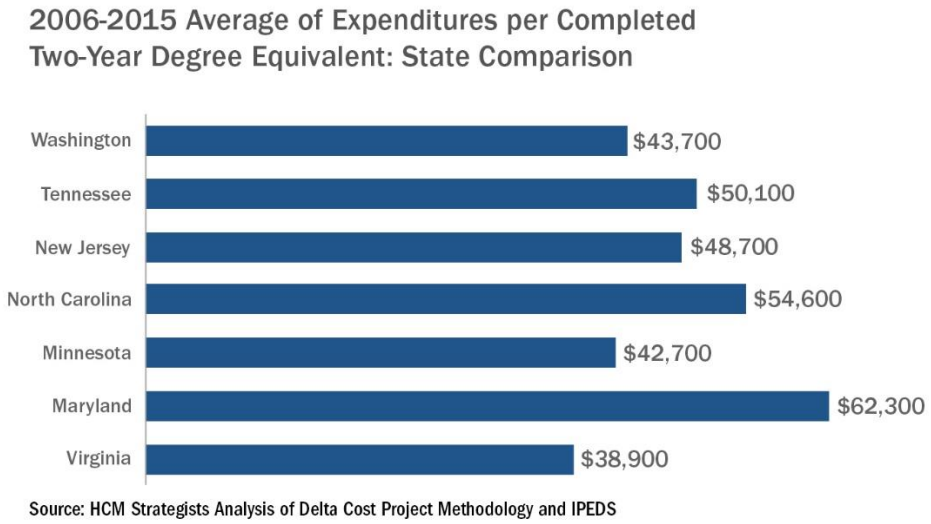
1. A review of Virginia's attainment goal and current status;
2. An analysis of the cost of postsecondary education with comparisons to other states and over time;
3. Estimates of demand and degree production to reach the goal;
4. The estimated cost to achieve Virginia's goal;
5. A discussion of the concept of "shared responsibility" for the cost of education; and
6. A list of effective programs and policy levers to consider as Virginia strives to meet its goal of having the best-educated population in the nation by 2030.

To estimate costs, this report uses a relatively new standardized cost measure, the ***cost per degree year***. This measure compares Virginia's cost per degree to other states and through time, and explores various factors that raise and lower the cost.

The cost per degree year can be expressed formulaically as:

$$\text{Cost per degree year} = \frac{\text{Total postsecondary Education and General Program expenditures}}{\text{\# of degrees conferred} * \text{Standardized time required to complete}}$$

Comparing this calculation to other states, Virginia's postsecondary system is relatively cost efficient. Despite recent increases in expenditures from the state's general fund and increases in the cost borne by students and families, the system confers degrees at a lower standardized cost than other states.



To meet its goal, Virginia must identify proven strategies. New strategies must consider access and success for students from populations and regions of the state traditionally less likely to enroll and succeed in higher education. The strategies also should be evaluated based on their ability to increase the number of graduates at a lower cost per degree.

The strategies described in this report serve as a menu of options for Virginia as it identifies the best investments and policy changes to meet its goal. The options include both financing and state-level policy strategies. Some of the finance strategies relate to institutional allocation, financial aid and other resources to help students offset costs. Virginia also can make policy-level changes that increase attainment. Some of these strategies include campus-based student support services, meta-majors and guided pathways, reverse transfer and online options.

Working with the Council and other policymakers, this plan can help develop strategies, evaluate the costs and returns of different programs, and work with state policymakers and stakeholders to identify current and future opportunities to leverage other funding sources to reach the state's attainment goal.

A STRATEGIC FINANCE PLAN FOR VIRGINIA

Virginia faces a future in which some form of education beyond high school, be it a certificate of value, a credential, an associate degree or a bachelor's degree and above, will be increasingly important. Virginians will need deeper and broader knowledge and skills to be productive participants in the Commonwealth's evolving economy. At the same time, the demographics of the emerging generation are changing. More young people will come from populations that are historically underrepresented in higher education, and they are underrepresented in sectors of the workforce requiring advanced education and training. These changes are happening at a time when the cost of attending college has increased beyond the capacity of many Virginians.

Staggering statistics, such as those listed below, document the need for action:

- Half of the state's cities and counties have a degree attainment level 20 percentage points below the state average of 54%, with attainment of at least a two-year degree ranging from 14% to 84% of a locality's population;
- For the 2017 high school class, low-income (eligible for free/reduced lunch) high school students enroll in college at a rate of 56%, 15 percentage points below the state average of 71%. African-Americans enroll at 64%, and Hispanic students do so at 63%.
- The vast majority, 99%, of good jobs created since the Great Recession require more than a high school education; and
- From 2007 to 2017, college tuition and fees at Virginia's public colleges and universities have increased each year by an average of $578, or 6 percent.

In 2014, the State Council of Higher Education for Virginia (SCHEV) developed The Virginia Plan for Higher Education (The Virginia Plan) with the objective of having the nation's best-educated population by 2030. The Virginia Plan is designed to identify trends that the Commonwealth must address if it is to prosper and succeed. It establishes a common framework for Virginia's future. The Virginia Plan's premise is that all partners in the higher education system must work together to help Virginia and all of its citizens meet the Plan's goals. The General Assembly endorsed The Virginia Plan by passing joint resolutions in 2015.

Building off The Virginia Plan and the support provided by policymakers, this report, a *Strategic Finance Plan for Virginia*, is the next step in helping Virginia meet its goal. It estimates the investment needed to meet the state's educational needs and helps ensure that current and future investments are made so that they efficiently advance the necessary outcomes and close attainment gaps.

The development of this strategic finance plan involved a stakeholder process led by HCM Strategists, in support of Lumina Foundation, and included consultation with a workgroup

(the workgroup) consisting of the staffs of SCHEV, the House Appropriations and Senate Finance Committees, the Governor's office (including the offices of the Secretary of Education, Secretary of Finance and the Chief Workforce Advisor), and the Department of Planning and Budget. The workgroup examined the social and economic forces driving Virginia's attainment goal, discussed whether adjustments were needed and considered options available to Virginia in its quest to become the best-educated state. The workgroup also met with institutional representatives for a "Day of Dialogue" to gain their perspective on attainment opportunities and challenges.

Sections of the report closely examine the operating costs of providing postsecondary certificates and degrees at the Commonwealth's public colleges and universities. Capital costs and non-educational costs are part of a total analysis and may be appropriate for review at another time. Private institutions play an important role in the state's attainment. In 2017-18, private institutions granted over 17,000 bachelor's degrees, almost 1,300 associate degrees and nearly 400 certificates, helping the state work toward its goal.[1] However, for the purposes of this report, the analysis of operating costs to produce credentials does not include the private institutions.

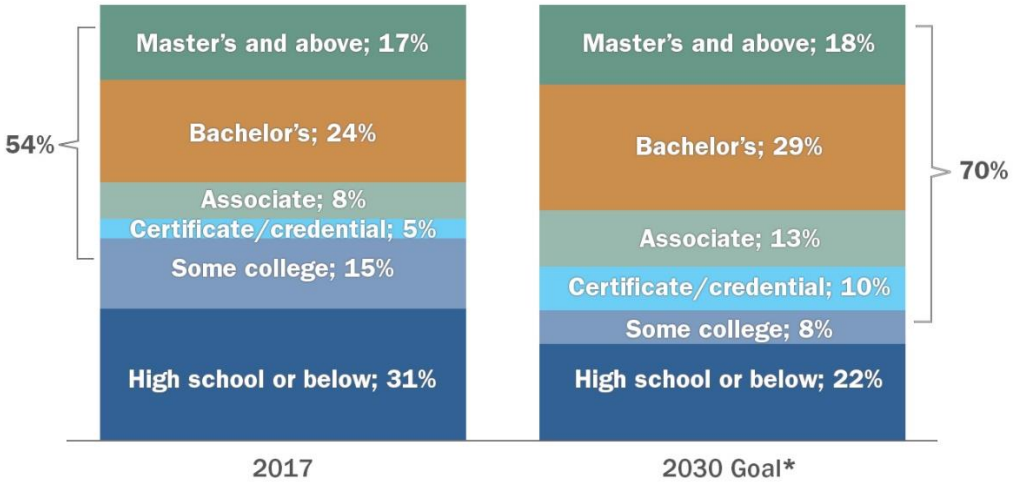
[1] State Council of Higher Education for Virginia, *Completions Summary SCHEV Research Report CO1*.

MAKING THE CASE FOR INCREASED ATTAINMENT

To meet economic demands, the country needs to educate more citizens beyond a high school diploma. Lumina Foundation estimates that 60% of the population will need a postsecondary credential by 2025 to meet workforce demands. The Virginia Plan is based in part on the economic conditions the Commonwealth wants to develop through higher educational attainment.

Virginia's goal is to be the best-educated state by 2030 with an attainment rate of 70%. Based on 2017 data, Virginia's attainment rate is 53.9%, ranking it sixth nationally. The graph below shows current attainment by degree and the 2030 Goal. Estimating the optimal mix of the credentials needed is challenging. The estimates used in this graph rely on current attainment levels, degree projections reported by institutions, third-party forecasts and labor market demand. They show an increase of five percentage points each for certificates, associate degrees and bachelor's degrees.

Virginia's Education Attainment by Degree Level - Current & 2030 Goal



* SCHEV Staff Analysis of Current Degree Trends, Institutional Projections and the Georgetown Center for Education and Workforce

The four priorities of The Virginia Plan are:

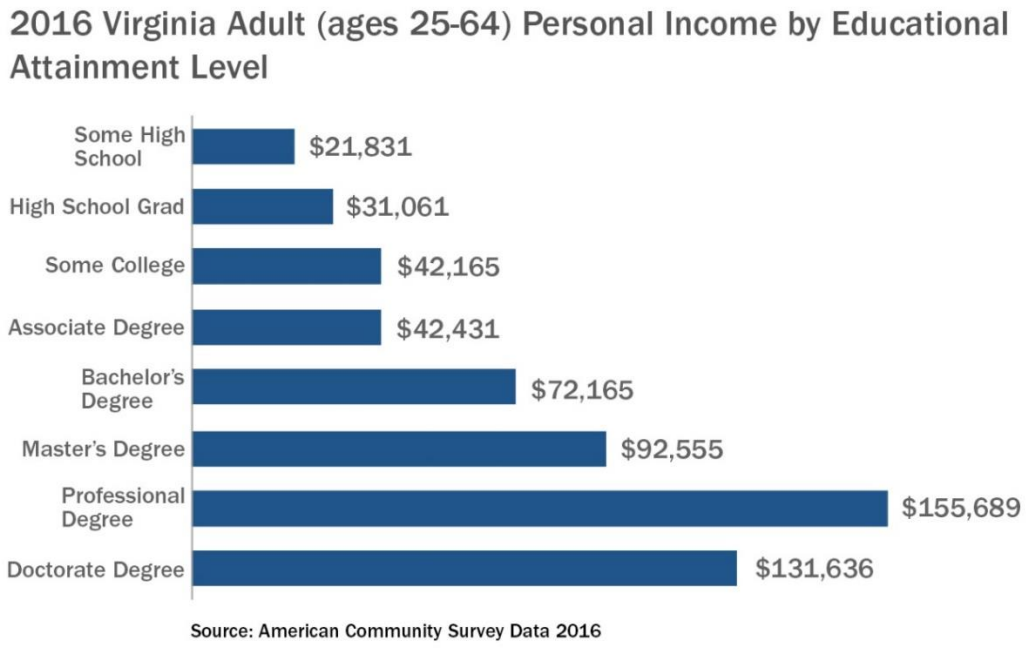
- Access and affordability
- Student success
- Investment and innovation
- Economic and cultural prosperity

These priorities recognize that members of traditionally underrepresented populations need increased access to higher education and attainment of a certificate or degree. Meeting the needs of these groups is critical to Virginia's success.

The Broader Case for Attainment: Social and Economic Imperatives

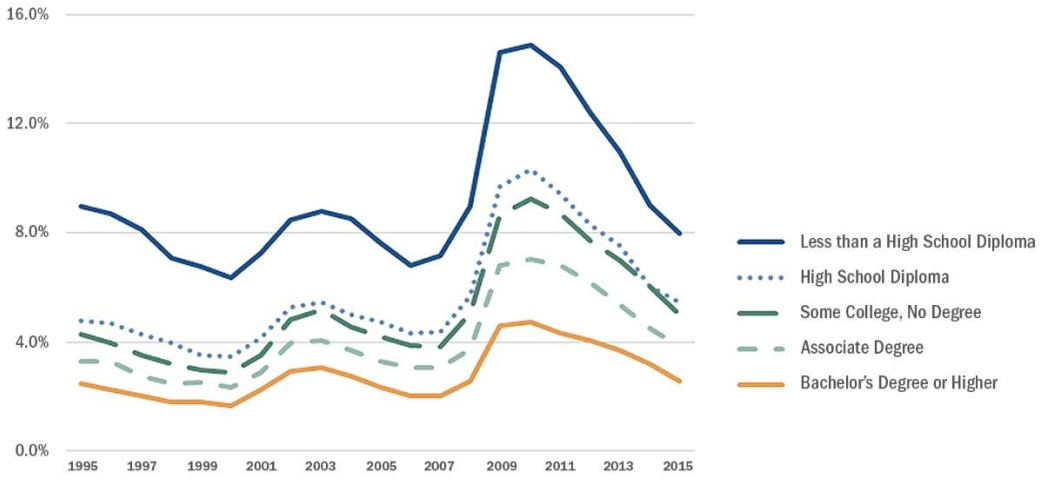
Virginia's goal is to provide benefits to individuals and the Commonwealth (society). Higher education often has been seen as benefitting the individual, but an educated citizenry significantly benefits the state.[2] Virginians directly benefit from increased attainment in the form of higher earnings. The higher earnings potential for postsecondary graduates can lead to increased tax revenues for the Commonwealth.

Virginia employment data show that the average annual earnings for an individual with a bachelor's degree are more than two times greater than the average annual earnings for an individual with a high school diploma and more than three times greater than for those without a high school diploma.



[2] Ma, Jennifer, Matea Pender and Meredith Welch, *Education Pays 2016: The Benefits of Higher Education for Individuals and Society*.

National Unemployment Rates of Individuals Age 25 and Older, by Education Level, 1995-2015



The College Board 2016 Education Pays Report
https://trends.collegeboard.org/sites/default/files/education-pays-2016-full-report.pdf

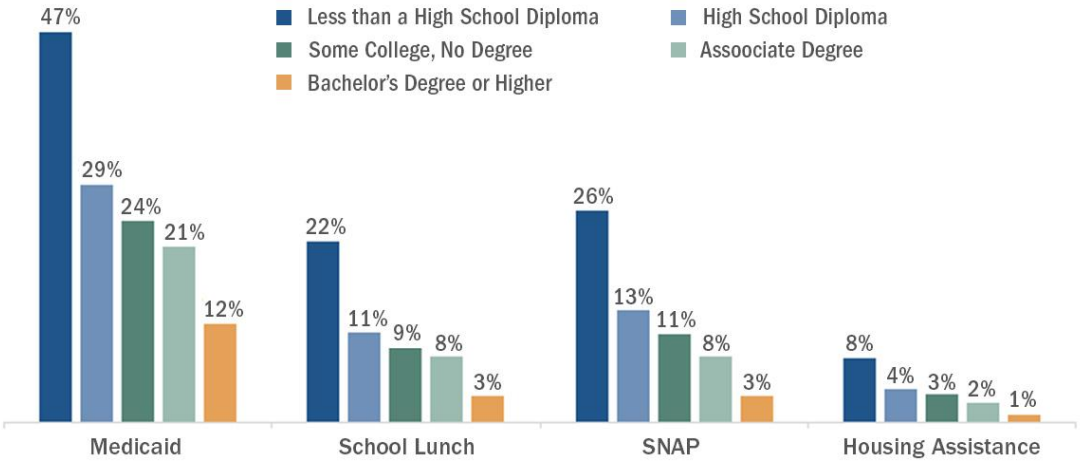
Nationally, the unemployment rate for individuals age 25 and older with at least a bachelor's degree has been consistently about half of the unemployment rate for high school graduates.[3] This trend holds true in Virginia, where individuals with a postsecondary degree are less likely to be unemployed.[4]

There are compelling positive societal impacts to the Commonwealth of increased attainment. As illustrated in the graph on the following page, individuals with a two-year degree use public services at a lower rate than students with a high school diploma and students with less than a high school diploma. This trend holds for students with a bachelor's degree and above as well.

[3]Ma, Jennifer, Matea Pender and Meredith Welch, *Education Pays 2016: The Benefits of Higher Education for Individuals and Society*.

[4] U.S. Bureau of Labor Statistics, *Unemployment Rate 2.5 Percent for College Grads, 7.7 Percent for High School Dropouts*, January 2017. TED: The Economic Daily. February 7, 2017.

National Percentage of Individuals Age 25 and Older Living in Households that Participated in Various Public Assistance Progams, by Education Level, 2015



The College Board 2016 Education Pays Report
https://trends.collegeboard.org/sites/default/files/education-pays-2016-full-report.pdf

As the graphs on national trends show, there is a strong economic case to increase attainment. Employment outcomes are better for those with some form of postsecondary degree and with less reliance on government services.

Meeting Virginia's Attainment Goal By Working With Underrepresented Populations

In some areas of the state, attainment already exceeds 80%, so much of the gain needed will come from underrepresented regions and from low-income and minority populations that have the largest numbers of residents without postsecondary credentials. This section reviews the impact of migration on the state's population, highlighting the need to focus on Virginia residents instead of in-migration. The next sections focus on the groups of Virginians who can be targeted to increase attainment, from the high school population to traditionally underserved groups, such as racial and ethnic minorities, rural residents and adults.

The Impact of Migration and the Need to Focus on Virginia Residents

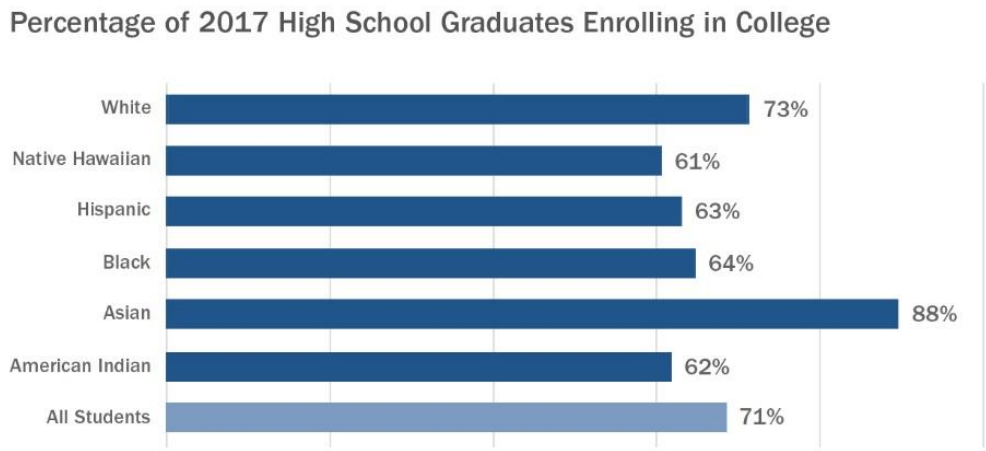
Migration has a varying impact across Virginia, and its impact on attainment is mixed. According to the Weldon Cooper Center for Public Service, the state's overall population growth has slowed, partially due to outmigration. While births are still outpacing deaths, Virginia residents are, on aggregate, leaving the state. From 2012-13 to 2016-17, about 10,000-20,000 Virginians moved away. This is a change from previous years when the state

benefitted from in-migration.[5] More importantly, these shifts highlight the need for Virginia to focus on its resident population because the state is no longer a net importer of individuals who could buttress the state's attainment numbers.

Migration has particularly affected rural Virginia. Since 2010, the Virginia counties bordering North Carolina, Tennessee and Kentucky declined in population. These declines are largely due to people moving and an aging population.[6] The population shift out of rural communities mirrors the state's attainment, which is higher in urban areas and the northern counties. This highlights the need to focus on Virginians in all parts of the state.

Virginia's High School Pipeline

The recent pattern of outmigration underscores the importance of increasing attainment by encouraging high school graduates to continue their education; through the traditional pipeline from high school to postsecondary education. Virginia's demographic trend is similar to the nation's and shows that the number of high school graduates will increase until 2025 and then start to decline. In the short-term, this is positive for Virginia as the number of traditional-aged postsecondary students increase for the next several years.[7] However, after 2025, the state cannot rely on an increasing traditional-aged population.



Source: Virginia Department of Education, *Postsecondary Enrollment* report
https://p1pe.doe.virginia.gove/postsec_public/postsec.do?dowhat=LOAD_REPORT_C11

Based on current college enrollment rates, shown in the graph above, the increase in high school graduates naturally will increase the number of postsecondary enrollments. However,

[5] Lombard, Hamilton, *Out-migration from Virginia Continues for the Fifth Consecutive Year, Pushing Population Growth Below National Levels*. StatChat.

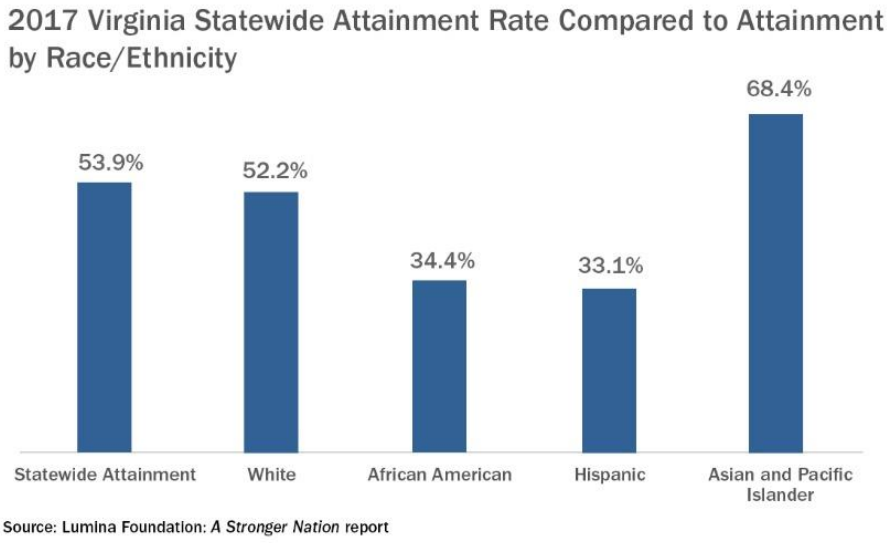
[6] Ibid.

[7] Bransberger, Peace, and Demaree K. Michelau, *Knocking at the College Door: Projections of High School Graduates*.

this impact will be relatively minimal. Using these numbers, the high school class of 2025 would only increase the number of postsecondary enrollees by between 3,500 and 4,500 over current enrollments. Enrolling and supporting these students is critical, but strategies also must consider ways to increase college enrollment rates for students from populations and regions of the state which are home to those less likely to enroll in postsecondary education immediately after high school. Indeed, the percentage of Native American, Hispanic and African American recent high school graduates attending college is more than 10 points lower than that of white recent high school graduates.

Virginia's Underrepresented Populations

Postsecondary success has not been equal in Virginia. Collectively, Hispanic, African American and American Indian/Alaska Native populations do not pursue postsecondary education or earn a credential or diploma at the same rate as other populations. The graph below shows the most recent attainment by race/ethnicity.

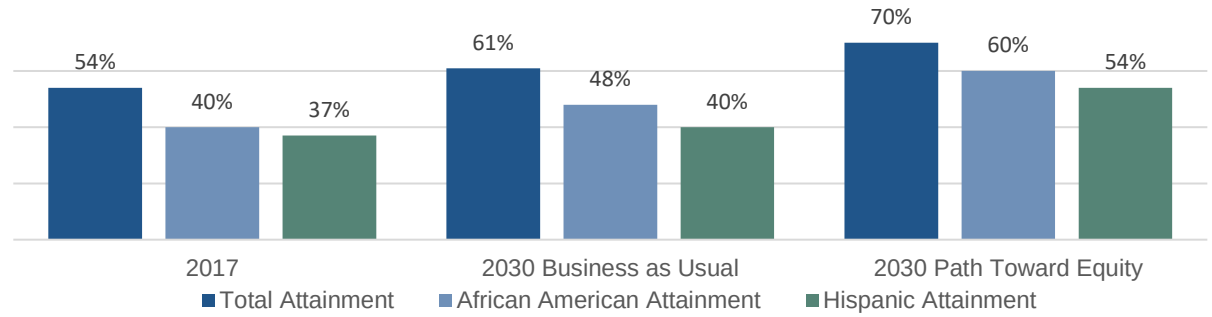


Source: Lumina Foundation: *A Stronger Nation* report

Lumina Foundation's *A Stronger Nation* report shows a way for Virginia to achieve 70% attainment that prioritizes equity for underrepresented groups.[8] The graph below shows that by 2030, gaps are expected to persist in a "business as usual" scenario, if no changes are made. A "path toward equity" approach enhances the marginal attainment increase for underrepresented populations and helps Virginia achieve its overall attainment goal. To meet its goal and to advance equity across the Commonwealth, Virginia will need to make substantive changes to better serve these populations.

[8] Lumina Foundation, *A Stronger Nation: Lumina Foundation. How Virginia Can Reach 70% Attainment by 2030*.

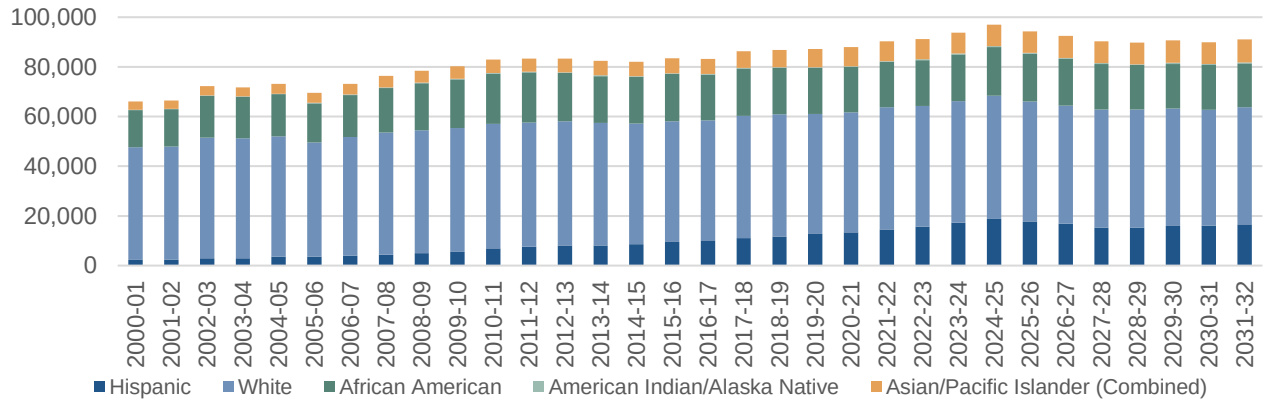
Virginia's Attainment Gaps by Race/Ethnicity: Current and Two 2030 Scenarios



Source: Lumina Foundation: *A Stronger Nation* report

Strategies that support Virginia's underrepresented minority students are vital given the changing demographic trends among high school graduates. Between 2012-13 and 2031-32, the percentage of white students will decrease from 60% of Virginia's high school graduates to 52%. In that same period, the number of non-white students will increase by about 10,700. This shift is predominately due to a doubling of the number of Hispanic high school graduates. The graph below shows the high school graduates from 2000-2032 by race and ethnicity.

Virginia's Recent and Projected High School Graduation Rates by Race/Ethnicity, 2000-01 to 2031-32



Source: Western Interstate Commission for Higher Education, *Knocking at the College Door: Projections of High School Graduates.*

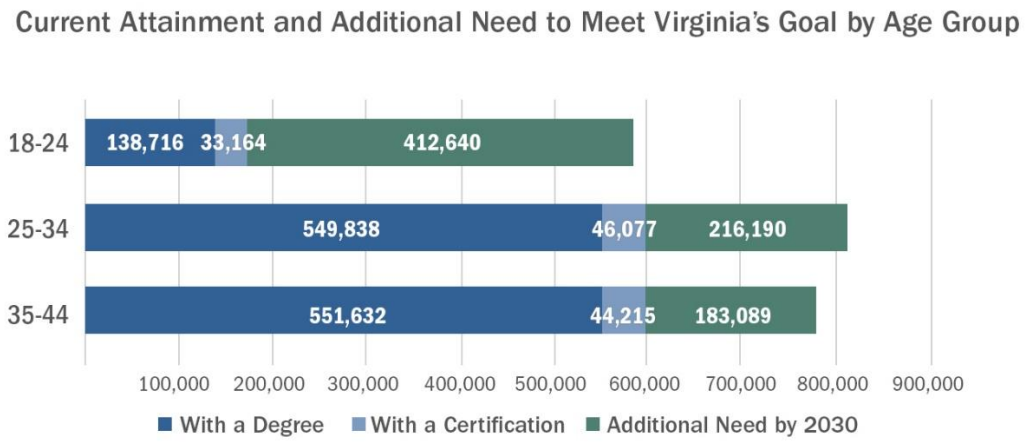
Additionally, a significant proportion of the state's non-student population, those who aren't enrolled and do not have a degree, are members of minority populations. Building institutional capacity to serve these students and increase their success is pivotal to the state's prosperity.

Virginia's rural regions also are underrepresented in the postsecondary system, and their attainment levels are lower than more developed parts of the state. As outlined in the migration section, rural Virginia is losing people, while most urban areas are not. The graph below shows the attainment rate by locality.

A disproportionate number of counties with lower attainment are in rural Virginia, with the gap being 70 percentage points between Greensville County (14% attainment) and Falls Church City (84% attainment). Strategies that increase attainment and access for rural Virginia also are critical as the state works to eliminate barriers for underrepresented populations.

Virginia's Adult Population

Virginia's adult population provides another opportunity to increase attainment. Based on 2016 American Community Survey data, approximately 1.4 million Virginians ages 18 and 44 do not have a degree and are not enrolled in a postsecondary program. The graph below shows the number of adults in each category with a degree or a certificate and the number needed to meet the goal.



Source: American Community Survey, 2016

As illustrated, there is a need and an opportunity to reengage Virginia's adult population. Some 18-24-year-olds are in the process of obtaining a credential, so to increase Virginia's attainment among adult students, strategies should target the 25-44 age group.

VIRGINIA HIGHER EDUCATION: A SYSTEM WORTHY OF INVESTMENT

Virginia's 15 public four-year institutions and 24 two-year institutions (the 23 community colleges and Richard Bland College) consistently rank among the best in the nation in faculty-student ratios, graduation rates and post completion wages.[9] Virginia ranks second nationally for its graduation rates from four-year public institutions.[10] And despite recent increases in expenditures from the state's general fund and increases in the cost of attendance facing students and families, Virginia's postsecondary system produces degrees at a lower standardized cost than other states. That rate has declined in recent years. This section introduces a relatively new standardized cost measure, *the cost per degree year*. It also compares Virginia's cost per degree to other states and through time and explores the various factors that cause costs to increase or decrease.

What Is a Reasonable Cost Estimate for Additional Degrees?

Discussions of postsecondary education costs tend to focus on student affordability (tuition, fees and other costs) or public investment in the system (state appropriations and financial aid). Both are important, but neither captures the complete cost to produce postsecondary credentials. This Strategic Finance Plan starts by describing in detail the cost to provide an education *regardless of who finances it.*

By starting with the total cost, Virginia can have a more informed discussion about what is needed, the cost to provide the quality of education Virginians need, and how to ensure that institutions and state agencies are good stewards of student and taxpayer dollars.

Measuring Costs and Relative Efficiency

In developing a strategic finance plan to support a state's attainment goal, understanding the cost of producing postsecondary credentials is a logical first step. With this knowledge, Virginia will be able to direct and align its resources to increase attainment.

The critical cost measure is not tuition, nor is it state appropriations per student. The key measure is the cost per completed credential or degree. This cost measure is determined by the total annual higher education expenditures, the time required to complete a degree and the total number of degrees produced each year. To avoid the volatility of the business cycle and enrollment spikes, aggregating 10 years' worth of data provides a more stable measurement.

[9] Miller, Derek, *Top States for Higher Education – 2019 Edition*. SmartAsset.

[10]"Virginia Public Colleges (4-year), *The Chronicle of Higher Education: Completion.*

The cost per completion provides a sense of the operating expenditures required for institutions to graduate students within the state's current postsecondary education system. The estimates are determined by:

- Summing the total education and related expenditures (state and family shares combined) over a 10-year period.
- Summing the state's total completions (total number of degrees and certificates awarded) over a 10-year period;
- Multiplying the completions by the standard number of years needed for each type of degree (e.g., two for an associate degree) to get the completed degree years; and
- Dividing total expenditures by the standardized total completions. This relationship can be expressed formulaically as:

$$\textit{Cost per degree year} = \frac{\textit{Total postsecondary Education and General Program expenditures}}{\textit{\# of degrees conferred} * \textit{Standardized time required to complete}}$$

For Virginia, the result is a $19,400 cost per "degree year" of postsecondary education, based on the Delta Cost Project Analysis and Integrated Postsecondary Education Data System (IPEDS) data from 2006-2015. This result generally equates to the cost of a one-year certificate, and it can be scaled to the cost for an associate degree and a bachelor's degree. This general estimate is best used for state-level planning purposes and state comparisons.

Converted to 2018 dollars, the average institutional costs per degree in Virginia were approximately:

- $77,700 for a bachelor's degree
- $38,900 for an associate degree
- $19,400 for a one-year certificate

The table below provides the specific calculations for Virginia's cost per degree. These estimates are the basis for the cost analysis in this report. The calculations are based on Virginia's Education and Related[11] expenditures over the 10-year period from 2006 to 2015.

[11] Education and Related Expenditures are linked to specific institutional spending categories. These categories include: instruction, student services, academic support, operations and maintenance, and institutional support. For additional information, please refer to the Delta Cost Project.

Virginia Cost per Completion 2006-2015	
Average Education and Related Expenditures Per Year	$5,836,334,813
Postsecondary Credentials (certificates, associate and above)	108,088
Completed Degree years (weighted by number of years to complete credential)	300,385
Education and Related Spending per Degree Year	$19,430
Cost per Two-Year Degree ($19,430 x 2)	$38,859
Cost per Four-Year Degree ($19,430 x 4)	$77,718

Virginia's costs are slightly lower than national and regional averages. The graph below compares the state's cost per two-year degree to the national average and the state's regional counterparts under the Southern Regional Education Board (SREB).

2006-2015 Average of Expenditures per Completed Two-Year Degree Equivalent: National and Regional Comparisons

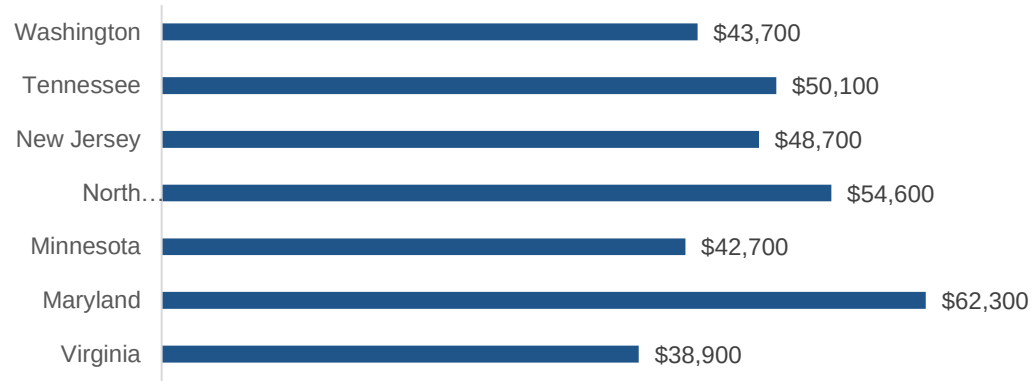
Source: HCM Strategists Analysis of Delta Cost Project Methodology and IPEDS.

Similarly, in 2014, the Joint Legislative Audit and Review Commission (JLARC) completed its multi-part report on the Cost of Public Higher Education in Virginia. The report on academic spending, *Review of Academic Spending and Workload at Virginia's Public Higher Education Institutions*, found that "spending on instruction and research is substantial but not above national averages."

Virginia's cost per completion is also lower, on average, than Maryland, North Carolina and Tennessee. The state's cost per completion is also lower than Minnesota, New Jersey and Washington, states that resemble Virginia in having a similar mix of public, private, four-year and two-year institutions. It reinforces the fact that Virginia's cost per degree compares favorably to its neighbors and to states with similar higher education systems.

The following graph illustrates these comparisons for two-year degree equivalents.[12]

2006-15 Average of Expenditures per Completed Two-Year Degree Equivalent: State Comparisons



Source: HCM Strategists Analysis of Delta Cost Project Methodology and IPEDS Data

While Virginia's cost per completion is relatively low, it is important to note that these numbers do not include students' non-tuition costs, such as room and board, books and supplies. These costs are important to consider, especially as Virginia embarks on a financial aid evaluation.

Differences between measuring costs per FTE and completions

An important distinction between the cost per completed year and the cost per student (or cost per FTE) is that the cost per completed year incorporates the costs for students who take more or less time to graduate, as well as students who do not complete. In Virginia, the cost per student averaged $13,200 from 2006 to 2015.

In an academically "perfect" postsecondary system, meaning no students dropped out and no students took extra time to complete, the cost per FTE and the cost per completed year would be equal. However, some students take more time and some do not complete, so the relative efficiency of a system can be measured by taking the percentage of the cost per full-time equivalent (FTE) relative to the cost per completed year. For Virginia, the percentage is 68% ($13,200/$19,400), which is comparable to other states.

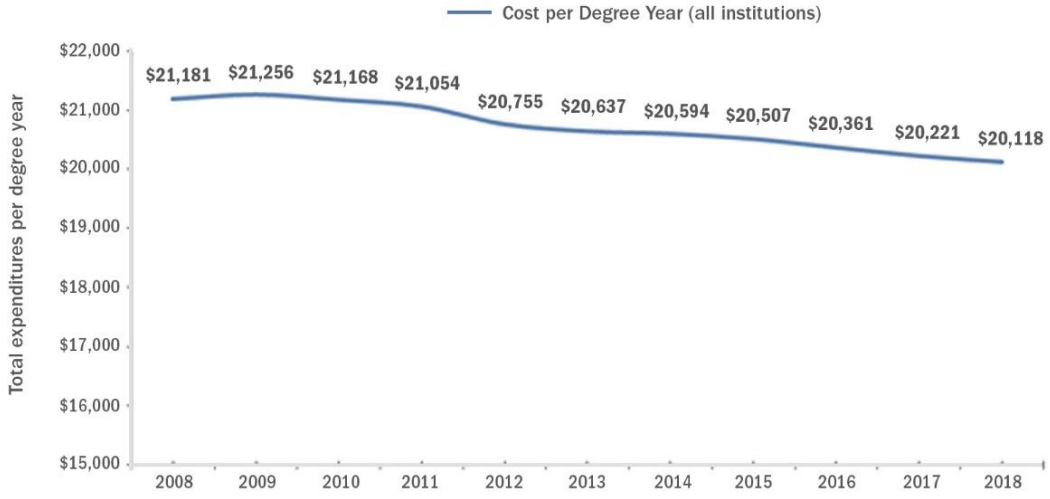
Systems, particularly a postsecondary system that values flexibility, are never perfectly efficient. However, as Virginia strives to become the best-educated state in the nation by 2030, it is important to note that increased efficiency (e.g., faster time to earn a degree, fewer stop- and drop-outs) could generate savings that could be reinvested in proven strategies to support additional students and increased attainment. Some of these strategies are discussed in the *Investing in Virginia's Goal* section later in this report.

[12] The comparison states were chosen based on geography (Tennessee, North Carolina and Maryland) and states with a similar postsecondary system (Minnesota, New Jersey and Washington).

Strategic reinvestment of institutional savings is essential for Virginia as it works to better serve its underrepresented populations. Institutions must invest in proven student success strategies to increase attainment for the state's low-income, racial and ethnic minorities, and rural students. As noted, supporting these Virginians is central to achieving the state's goal.

While comparing Virginia to other states and national averages is informative, so is the efficiency through time. To establish a trend, the same method of aggregating 10 years of expenditures and degrees produced was performed, creating 10-year rolling averages spanning 1998 to 2018. When adjusted for inflation, the total cost per degree year in Virginia declined over the last decade.[13] The averages minimize volatility due to budget cuts and subsequent reinvestments in state appropriations. This decline can be partially explained by the growth in enrollment during the Great Recession, subsequent degrees produced a few years later and budget cuts following federal budget sequestration. But controlling for those short-term factors makes it easier to understand the system's efficiency. Furthermore, Virginia's high degree efficiency can be attributed to its completion rates.

Virginia's Total Higher Education Expenditures per Degree Year all Institutions, Adjusted for Inflation



Total expenditures and degrees aggregated for 10-year averages. Degree year calculated by weighting level of award based on typical time to complete. Dollars adjusted for inflation.
Source: SCHEV historical financial records and SCHEV Research

[13]In order to compare Virginia's total expenditures per degree to other states, the authors used IPEDS data. To analyze Virginia's historic performance, the authors used internal SCHEV data. There is only a slight difference between the two: $20,118 per degree year using SCHEV and $19,400 per degree year using IPEDS.

Since 2001-02, more of the responsibility for paying for higher education has shifted from the state to the student. As the state share of the cost of education has declined, the student share of the cost has increased. However, for the 2019-20 academic year, tuition and mandatory educational and general (E&G) fees (those fees related to instruction and supported by the state) did not increase for the majority of in-state undergraduate students, primarily as a result of additional state funding. As a result, for 2019-20, undergraduate students paid, on average, 52% of the cost of their education. The state share for those same in-state undergraduate students is 48%, a 19-percentage point difference from the policy goal, stated in the Code of Virginia, that the state should support 67% of the cost of education and the undergraduate Virginia student should support 33% of the cost.

According to the *State Higher Education Executive Officers Association SHEF: FY 2018 State Higher Education Finance* report,[14] Virginia's state appropriations per FTE (constant adjusted 2018 dollars) decreased 18.7% between FY 2008 and FY 2018. Virginia ranks below the U.S. average in:

- the percent of tax revenues allocated to higher education,
- higher education support per $1,000 of personal income, and
- higher education support per capita.[15]

Virginia consistently ranks low compared to other states in investment in higher education per student (37th at $5,799 per student), more than $1,800 below the 2017 national average of $7,642.

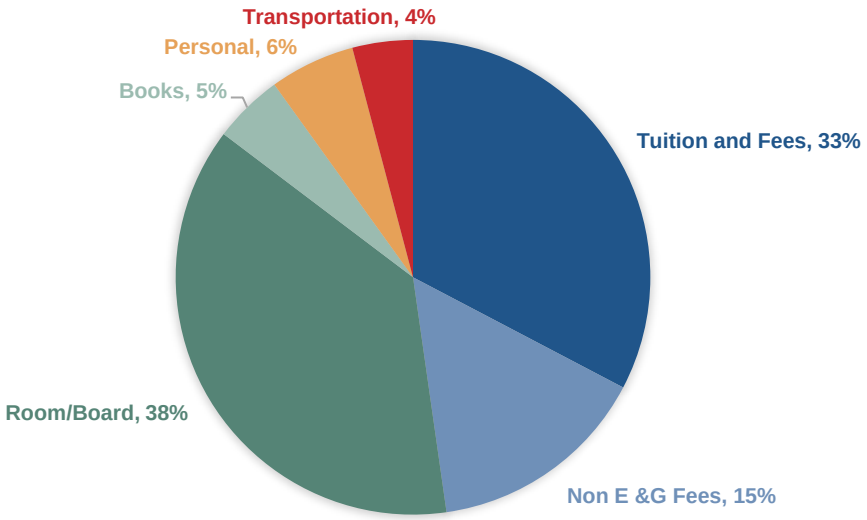
Student Costs

This report focuses on the state's investment related to degree attainment. It does not include student indirect costs when estimating cost per completion. However, these costs affect students and should be considered when estimating a reasonable amount for students and families to contribute. Additionally, these costs can be greater than tuition and fees. The charts on the following page show the average student costs, including tuition, for 2019-2020. At both Virginia's public two-year and four-year institutions, the cost of room and board is higher than tuition and fees.

[14] State Higher Education Executive Officers Association. State Higher Education Finance: 2018, *SHEF: State Higher Education Finance Report. 2019.*

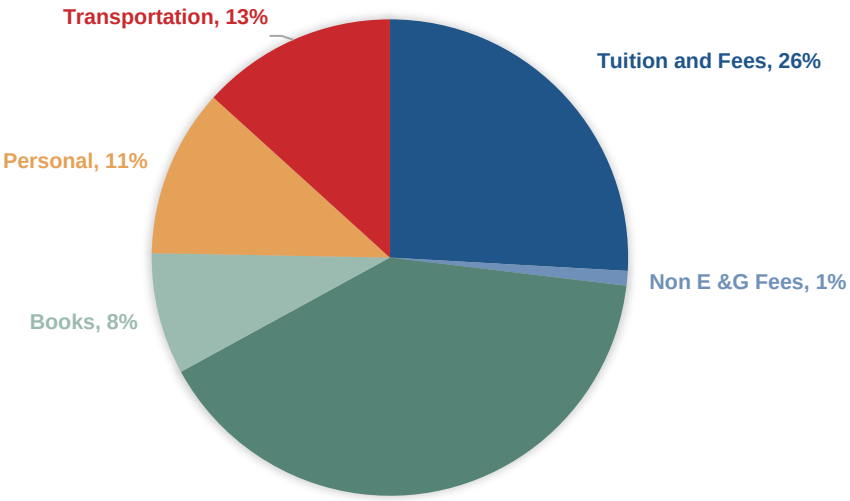
[15] State Higher Education Executive Officers Association, "State Higher Education Finance: 2018." SHEF: State Higher Education Finance Report. 2019.

2019-20 Average Student Budgets, Four-year Institutions
(rounded to nearest percentage)



Source: SCHEV Student Budgets

2019-20 Average Student Budget, Two-year Institutions
(rounded to nearest percentage)



Source: SCHEV Student Budgets

As Virginia identifies strategies to increase attainment, the state should consider how these additional costs create barriers for students in their efforts to obtain a postsecondary credential. Additionally, the state should consider strategies that address the opportunity cost for students.

Cost per Completion Factors

The $19,400 cost estimate is based on a 10-year average (2006-2015) and includes all institutions and all degree programs. Some degrees have a higher cost than others. STEM degrees typically are more expensive than average. These programs often require specialized equipment and higher-paid faculty, which increase the cost per Full-time Equivalent (FTE) and the cost per completion. Some of these costs may be hard to avoid. But the programs also may have high attrition rates or high rates of major-switching which increase the cost per degree. There is often room for improvement in calculating these types of "academic efficiency" measures, which is discussed in a following section.

The cost per credit hour differs by institution, course level and program. Research institutions tend to offer more high-cost programs, which drives up their cost per credit hour. Generally, upper-level credit hours, regardless of discipline, tend to cost more than lower-level credits. Similar to degree types, credit hours in certain fields of study, such as STEM and health care programs, tend to be more expensive.

Location also affects the cost per completion. Programs in rural parts of the state may have higher costs due to one set of factors, while programs in expensive, urban areas may cost more due to other factors. Since these factors influence the cost per completion, it is important to understand the main cost drivers.

Higher Education Cost Drivers

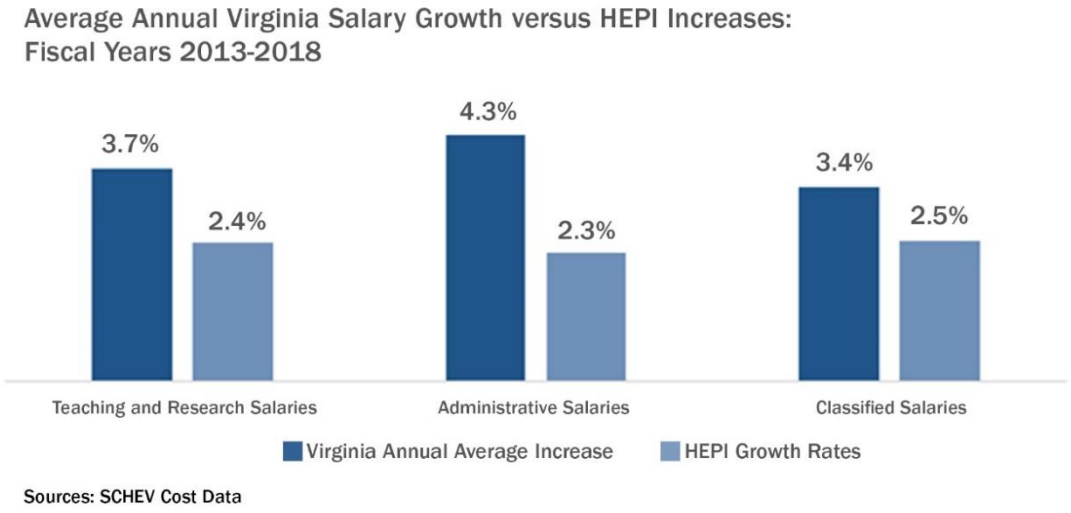
Underlying Virginia's expenditures are cost drivers that impact the resources it takes to deliver a postsecondary education. For a public postsecondary system, cost is different than tuition and fees. For example, if a program costs $10,000 to deliver, but the state subsidizes the cost with $5,000, students, or a combination of other resources, would need to cover the remaining $5,000 cost through tuition and fees. Over time, institutional expenditures track closely with core revenues, so it is important to understand the cost drivers that affect expenditures.

Personnel and Salaries

Institutional expenditures are largely driven by personnel costs and salaries. While utilities, supplies, professional services and other operational costs can influence total expenditures, personnel costs are the largest single factor. Based on Virginia's 2018 Education and General spending, personnel costs accounted for 66% of expenditures ($3.2 billion out of $4.8 billion). Spending more or less per student on personnel for the same number of students would raise or lower the cost per completion.

Salaries are a significant portion of personnel expenditures. Since Fiscal Year 2013, spending on Teaching and Research Faculty salaries, Administrative Faculty salaries, and Classified Personnel salaries have increased. These increases have placed upward pressure on the cost per degree, but if the increased investment in personnel is met with increased graduates, the effect may be neutralized.

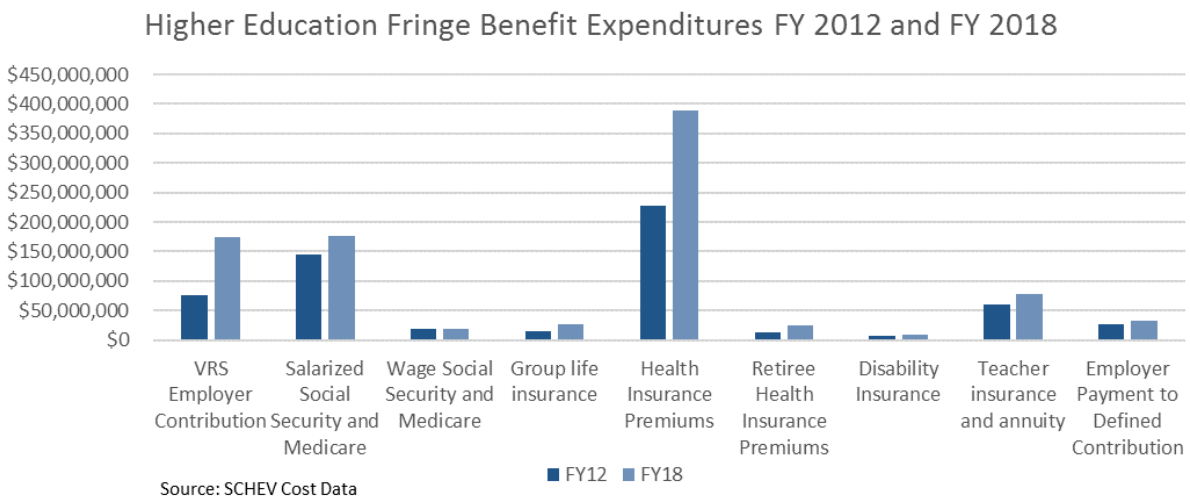
However, the state should be aware that cutting salaries or reducing personnel costs in the name of savings could jeopardize the quality of Virginia's higher education system. Additionally, to maintain its status as a high-quality system of higher education, Virginia's institutions may need to increase salaries beyond inflation to compete in the labor market. The state must remain aware of how personnel drives costs, but instead of cutting salaries or positions, the state should look to maximize degree production efficiency. The graph below shows annual average salary increases and compares them to their respective Higher Education Price Index (HEPI) rates.



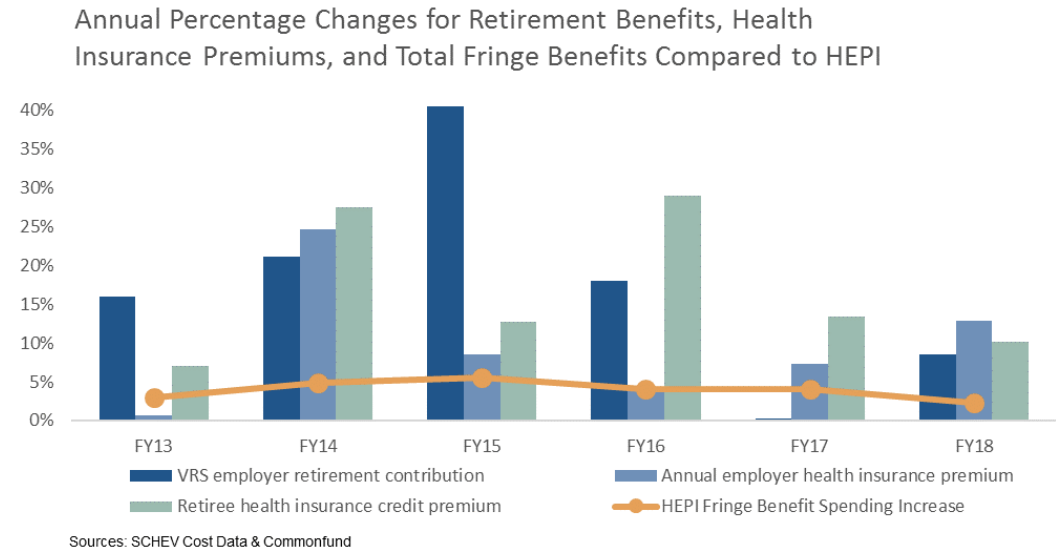
Using historical costs or averages to estimate the total cost to achieve Virginia's attainment goal assumes that the state's postsecondary system will have roughly the same types of services, and that students will enroll in a similar mix of courses and programs of study. Should these patterns change, or should personnel costs accelerate faster than inflation, as Virginia has experienced, there could be additional upward pressure on personnel expenditures.

Benefits

Salaries are the most significant share of personnel costs, but benefits are also a considerable cost for institutions. In fiscal year 2012, fringe benefit spending was about $590 million. This grew to $930.5 million in FY 2018, a 58% increase. The numbers are not adjusted for inflation, but still show a significant increase in fringe benefit spending. The graph on the following page shows the increase by benefit category between FY 2012 and FY 2018.



As shown above, fringe benefit growth was largely driven by increases in Virginia Retirement System (VRS) contributions and health insurance premiums. Growth in these two areas was about $261 million of the total $340.5 million increase in fringe benefit expenditures. The graph below illustrates the annual percentage increases in retirement contributions, health insurance premiums and total fringe benefits compared to the annual Higher Education Price Index changes for fringe benefits. Fringe benefit costs, particularly VRS and health care, are likely to continue to put upward pressure on costs.



Past Spending Studies

In 2013, the Joint Legislative Audit and Review Commission (JLARC) conducted a series of evaluations on cost growth in Virginia's higher education system. The reports focused on academic spending and non-academic spending. In the *Review of Academic Spending and Workload at Virginia's Public Higher Education Institutions*, JLARC found that academic

spending was substantial but not above national trends. The report suggested that Virginia could adopt funding methods that accounted for differing institutional situations.

The JLARC studies found that Virginia institutions generally overspent on auxiliaries and non-education related items. Auxiliary enterprises accounted for over half of the cost growth between 2002 and 2012.[16] Since the release of the reports, SCHEV has implemented controls to reduce auxiliary costs, which included an initial 5% cap on non-E&G fee growth. In 2017, SCHEV recommended that this cap be reduced to 3% starting with the 2019-20 academic year. That recommendation passed in the final budget.

Cost Pressures

As Virginia identifies potential investments to increase attainment, the cost of each proposal should be weighed against the historical cost per completion. Proposals may identify cost savings, but other proposals targeted toward specific, higher-cost credentials or traditionally underrepresented populations may have higher than average costs. The state must weigh the outcomes relative to the per degree cost and not simply reject a proposal based on the sticker price. The outline below lists factors that can raise or lower costs.

Upward Pressures:

- Increasing services that support underrepresented populations.
- Prioritizing specific degrees with higher than average costs in order to meet economic demands.
- Personnel costs rising faster than inflation due to labor market pressures, budgets or policy choices.
- Costs associated with the Virginia Retirement System and health care.

Downward Pressures:

- Improved degree efficiency through academic advising or wrap-around support.
- Economies of scale for under-used programs or institutions that would allow more students to be served for the same cost.
- New programs with lower than average costs.
- Institutional efficiencies (e.g., consolidating back-office functions).
- Investments that reduce time-to-degree.

[16] Joint Legislative Audit and Review Commission, *Report to the Governor and General Assembly of Virginia: Addressing the Cost of Public Higher Education in Virginia*. November 2014.

MAPPING DEGREE DEMAND

Virginia's attainment goal includes all four-year, two-year and shorter-term credentials across different fields and specializations. Focusing on a single type of credential could yield increased attainment, but it could fail to satisfy broader workforce demands.

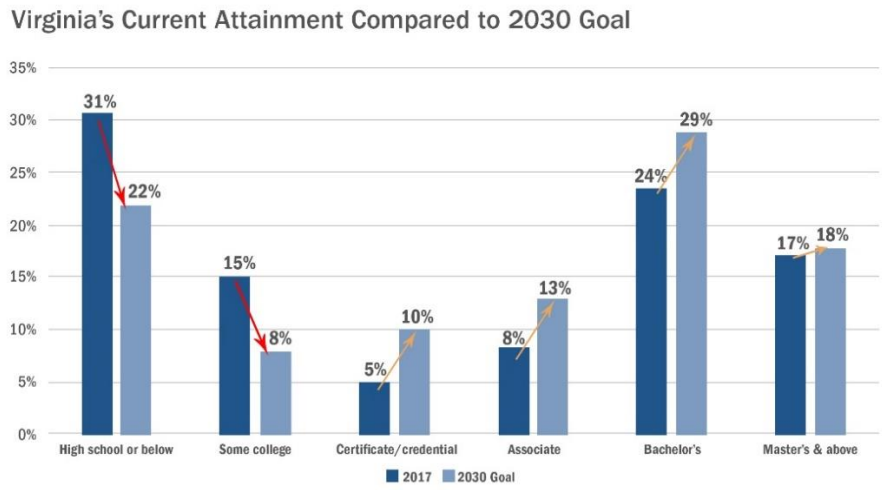
The attainment goal is tied to becoming the best-educated state in the nation, but the degree breakdown also should reflect the state's economic needs. As those needs change, or as new opportunities arise, Virginia may have to adjust the mix of credentials that students and employers most need, while keeping the important overarching goal of being the best-educated state.

Current Attainment

Before estimating the number of credentials needed to meet Virginia's goal, it is important to understand the state's current attainment. Statewide postsecondary attainment is currently 54% for Virginia's working age adults (25-64-year-olds), an increase of more than 10% since 2008.[17] However, the state's goal is to increase attainment by an additional 16% by 2030. To do so, Virginia needs to target underrepresented students.

Estimating Degree Demand

To keep pace with state needs and labor force demands, estimates are that 10% of working age adults will need a certificate of value (generally requiring less than two years), and 60% will need a postsecondary degree. A majority of the degrees are undergraduate degrees, but graduate degrees also are in demand.[18] The graph below shows Virginia's current attainment compared to the 2030 goal.



Source: SCHEV Staff Analysis of Goal, Economic Demands and Projections

[17] Lumina Foundation, *A Stronger Nation: Lumina Foundation. Virginia's Progress Toward the Goal*.

[18] Graduate degrees are out of reach unless Virginians have first attained an undergraduate credential.

The population of those who have a high school diploma or below and those with some college but no degree needs to decrease. To meet the goal, attainment for certificates must effectively double, and degrees (associate and bachelor's) must increase by 5% each. It should be noted that projecting the number and types of degrees needed is challenging. These projections are based on current attainment trends, third-party projections and labor market demand analysis.

To provide a cost estimate to meet Virginia's 2030 attainment goal, the percentages need to be translated into numbers. In 2030, the state's working-age population (adults ages 25-64) will be approximately 4.7 million people.

- 70% of this population needs a credential, or about 3.3 million Virginians.
- 60% of this population, or roughly 2.8 million people, will need an associate or bachelor's degree.
- An additional 10% of the population, or about 470,000 people, will need a certificate.

Some certificates and degrees already have been produced. Calculating the additional number of degrees and certificates requires a baseline on current attainment levels. SCHEV staff analyzed 2016 American Community Survey (ACS) data for the 18-54- year-old population. This population will be the 25-64-year-olds in 2030, so their current attainment is necessary to estimate the number of additional degrees. The table below shows the breakdown of current degrees, the 2030 Goal and the projections of additional degrees needed. SCHEV collects degree projections from institutions. That data helps determine if degree production is on track.

The Number of Additional Credentials Needed to Meet Virginia's 2030 Goal

Credential Type	Current Attainment (18-54)	2030 Attainment	Additional Credentials Needed*	On track based on projections
Certificate	94,443	467,828	373,386	No
Associate	336,836	608,177	400,695	No
Bachelor's	1,552,021	2,198,793	646,772	Yes

* The number of associate degrees is increased by 20% of the Bachelor's degrees needed to reflect the students who will continue on to a Bachelor's degree.

To meet its goal, Virginia needs about 1.4 million additional credentials. This figure reflects an increase in the number of additional associate degrees to account for students who will continue on to receive a bachelor's degree. About 46% of what is needed are bachelor's degrees, another 28% is associate degrees and the remaining 26% is certificates. Virginia is projected to meet its bachelor's degree demand, but is not on track to meet the number of

associate degrees and certificates. For the cost estimates, this report uses the total number of bachelor's degrees projected in 2030, which is approximately 715,000.

The 1.4 million additional credentials represent the total amount needed, not the incremental amount beyond what Virginia's higher education institutions project being able to provide between now and 2030. The estimates also include the invaluable contributions of Virginia's private institutions. However, for the purposes of estimating the costs in the next section, the scope will narrow to Virginia's public institutions.

THE COST TO REACH VIRGINIA'S ATTAINMENT GOAL

This section uses the concept of cost per degree and degree data from the previous sections to estimate a Virginia-specific total and annual cost to meet the state's attainment goal. In this section, *the cost per degree calculation methodology is used, but the data now comes from SCHEV Education and General data, not IPEDS.* It is then adjusted for inflation. This allows for a direct comparison between the current resources that are being spent in Virginia's public postsecondary system and the total estimated amount based on the number of degrees needed.

The estimate used in this section is the $20,100 cost per degree year, based on a rolling average from 2008-2018 of SCHEV-specific cost data and is adjusted for inflation, as was used previously. Using this figure, the estimate for an associate degree is $40,200 and $80,400 for a bachelor's degree.

Two additional calculations are needed in this section to determine the cost estimates. The first step is to account for the most recent degree production in Virginia. The data on attainment and attainment rates of the population do not include the 2017-18 degrees. To generate the best estimate of future degrees needed, this report removes the 2017-18 credentials from the estimates. The table below shows the new credential estimate based on 2017-18 credential completion.

The Number of Additional Credentials Needed to Meet Virginia's 2030 Goal Accounting for 2017-18 Credentials

Credential Type	Estimated Degrees Needed by Type	2017-18 Completions by Type	Additional Credentials Needed
Certificate	373,386	15,010	358,376
Associate	400,695	19,535	381,160
Bachelor's*	715,260	55,020	660,240

* Virginia projects to meet its Bachelor's degree target. This analysis uses the projected total instead to avoid the notion of reducing the number of Bachelor's degrees.

The second calculation that is needed to estimate the total costs is to subtract the percentage of degrees that Virginia's private institutions generate. Based on 2017-18 data, private institutions account for 3% of the state's certificates, 7% of the associate degrees and 31% of the bachelor's degrees.

The table below shows the total degrees, the public degrees and the cost estimate for the public institutions.

Cost Estimates to Meet Virginia's Attainment Goal (2018 Dollars)			
	Total Degrees Needed by 2030	**Public Degrees Needed by 2030**	**Public Institution Cost Estimates by Degree Type**
Number of Certificates	358,376	347,625	$6,987,256,872
Number of Associate Degrees	381,160	354,479	$14,250,047,760
Number of Bachelor's Degrees	660,240	455,566	$36,627,474,240
Total	1,420,853	1,157,669	$57,864,778,872

The estimated total cost to meet Virginia's goal is roughly $58 billion in 2018 dollars. Annualizing this estimate spreads the total over 12 years, the number of years between the 2017-18-degree production and 2030, to generate a single-year cost estimate for undergraduate awards. The annual cost estimate is approximately $4.8 billion. Based on SCHEV's estimates, the 2019-20 undergraduate share of Education and General expenditures is $4.4 billion. An additional $400 million is needed to meet the state's goal. As Virginia determines its share, it should direct higher-education investments in a strategic manner, supporting student affordability and meeting the state's 2030 goal and degree demand.

INCREASING ATTAINMENT IS A SHARED RESPONSIBILITY

As Virginia identifies strategies to increase attainment, understanding the available funding sources is of paramount importance. The four major sources of funding are: students and families; state appropriations; private donations and investment; and reallocations of state/institutional resources. Private donations are a larger part of the budget at some institutions than they are at others. However, relative to tuition and state appropriations the available revenue is small, so for the purposes of this report, the focus will be on students and families, state appropriations and reallocation of resources.

- **Students and families** finance higher education through tuition and fees. Students may receive varying levels of support from their families depending on the family's ability to pay. Federal, state and third-party resources also exist to support students in offsetting the cost of tuition and fees.
- **States and taxpayers** directly invest in higher education through state and local appropriations. These appropriations can go directly to institutions to offset the cost of providing a postsecondary education. State and local governments also can support students through financial aid.
- **Reallocation of state and institutional resources** is not a new investment, but it highlights the role of policymakers and institutions to ensure that resources are allocated strategically. For institutions, savings is similar to new revenue, allowing institutions to reinvest that revenue and potentially reduce the cost per degree.

Additional degrees require additional resources. This section outlines the resources available to support the additional costs needed to increase Virginia's attainment. It examines student and family contributions, federal resources that can support students, state appropriations and institutional reinvestments.

Students and Families: Ability to Pay

For students and families, there is a direct link between income and the ability to pay for college. On average, 17% of a family's income is needed to cover the net price at a two-year institution. The percentage increases to 32% for four-year institutions.[19] While net price includes costs beyond tuition and fees, such as room, board and books, these percentages illustrate the resources students and families need to pursue a postsecondary education.

[19] Institute for Research on Higher Education, *College Affordability Diagnosis: Virginia*, 2016. Institute for Research on Higher Education, Graduate School of Education, University of Pennsylvania.

For low-income populations, the percentage of family income needed to pay for postsecondary education is even higher. For families making less than $30,000, it takes 37% of family income to attend a two-year college full time and 67% at a four-year institution.[20] Middle-income families also will likely face a significant burden in paying for college.

For the adult population without a credential and not currently enrolled, their income level affects their ability to pay. Based on 2016 American Community Survey (ACS) data, of the roughly 1.4 million Virginians who fall into this category, about 80% earn less than $40,000, and only 8% of this population earns more than $60,000. In general, the Expected Family Contribution (EFC) will vary for people in this group, and a large proportion would qualify for federal Pell grants.

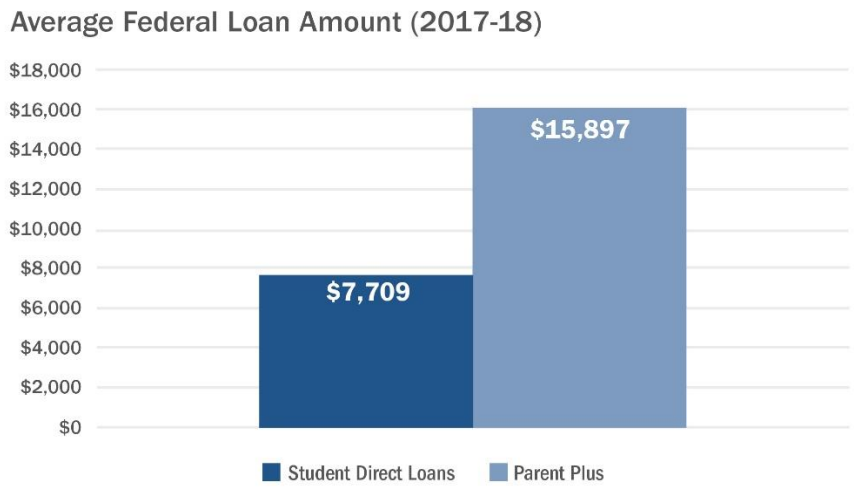
An affordable postsecondary education should be one of Virginia's foremost goals. Policymakers thoughtfully and carefully consider student and family incomes, additional resources such as college savings plans, and potential future incomes when making policy choices like those outlined in this report. However, determining a specific amount that Virginia's students and families should contribute toward a postsecondary education would require additional analysis and stakeholder engagement. This could be done either independently, as a separate project or as part of another SCHEV report that focuses on affordability.

Student Debt

Debt is another tool that students and families can use to finance a postsecondary education. For 2017-18, the average direct federal loan made to Virginians was slightly less than $8,000. The average Parent PLUS loan was almost $16,000. The graph on the following page shows the average amount borrowed by loan type based on SCHEV's Trends in Annual Borrowing by Student Level data.[21]

[20] Institute for Research on Higher Education, *College Affordability Diagnosis: Virginia*. 2016. Institute for Research on Higher Education, Graduate School of Education, University of Pennsylvania.

[21] State Council of Higher Education for Virginia, *FA 19: Trends in Annual Borrowing by Student Level*.



Source: SCHEV Trends in Annual Borrowing by Student Level.

Federal undergraduate loans to Virginians were about $900 million in 2017-18, an increase of about $275 million since 2008-09. Total federal borrowing in Virginia, including graduate students, was about $1.2 billion in 2017-18. Reducing the amount of debt would require Virginia to find significant additional funding to offset the substantial amount of loans coming into the system. As with determining a reasonable amount for students and families to contribute, Virginia may want to explore a target for debt.

Additional Federal Resources to Support Students

Federal resources can help offset the cost of a postsecondary degree. When looking at policy levers and investments, Virginia should consider the additional federal revenue that can be generated to support potential students. For low-income students, the main federal support is the Pell Grant, which annually provides as much as $6,100 to offset tuition and other costs. The Supplemental Nutritional Assistance Program (SNAP), can also help low-income students offset food costs. Middle-income Virginians are better positioned to take advantage of the American Opportunity Tax Credit (AOTC), which can provide up to $2,500 annually. The table below depicts the current flow of federal resources into Virginia.

	Pell Grant	SNAP	AOTC
Current Total	$630 Million	$85 Million	$520 Million
Estimated Percent Eligible	60%	20%	80%
Estimated Average	$3,000	$1,500	$1,500

Any eligible student or family can qualify for these federal entitlement programs. This gives Virginia significant potential income to help support students in their postsecondary attainment efforts. A majority of the 1.4 million Virginians who are not enrolled and do not have a degree would qualify for a substantial Pell Grant. The 80% who earn less than $40,000 could qualify for about $5,400 in Pell grants, close to the maximum allowable amount. A quick analysis for illustrative purposes shows that if this 80%—roughly 1.12

million Virginians—all qualified for the average grant of about $3,000, an additional $3.36 billion would flow into the state. Other factors also influence the amount of the grants, but this shows the amount of resources that could flow into the system if this population were encouraged to seek postsecondary education.

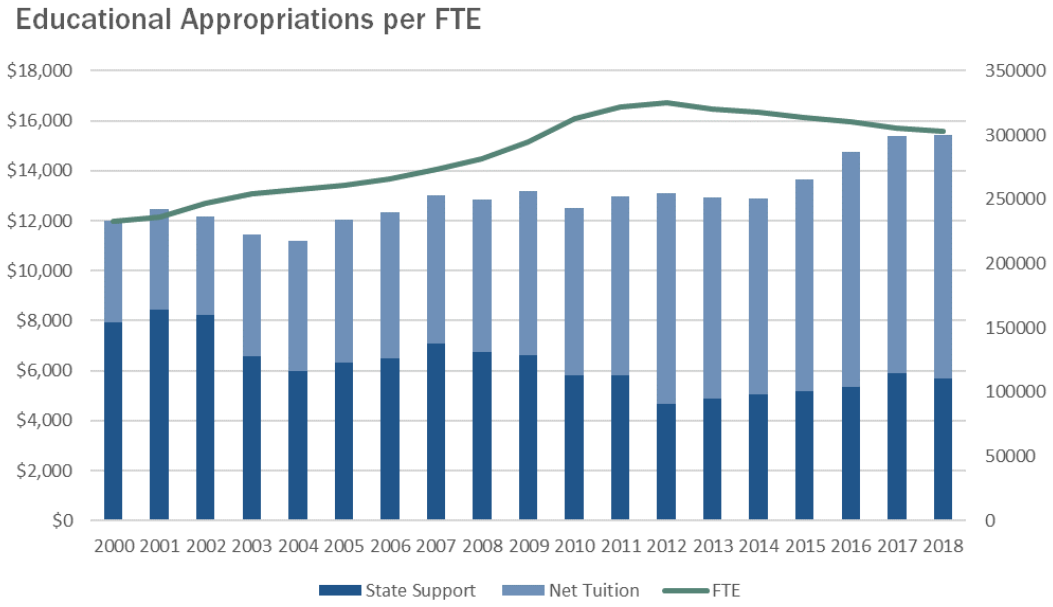
About 21% of the same population is eligible for SNAP, so identifying SNAP-eligible education and training programs, and increasing eligibility awareness would allow the state to maximize the federal investment available through SNAP and Pell.

For middle-income Virginians, the return is bigger for the AOTC. For those with an income between $40,000 and $79,000, the AOTC would be about $2,100. In the $80,000 to $120,000 income bracket, the AOTC would be about $2,500.

The additional income generated by these programs would support students and help offset their costs. Additionally, these resources could reduce the potential amount Virginia would need to provide to support students in attaining a credential.

State and Local Investments

State and local appropriations directly support institutions by offsetting costs. Generally, costs are met by these appropriations or by tuition, so the level of state support directly affects how tuition is determined. Since 2000, Virginia relied more heavily on tuition to offset costs. The graph below shows the inflation-adjusted net tuition and educational appropriations per FTE since 2000. The state's share shrank from 66% to 36% during that period. Reversing this trend is a goal of the current strategic plan.



Virginia has the 11th highest net tuition per FTE in the country and has seen a nearly 17% increase in net tuition in the last five years. Conversely, Virginia's appropriations per FTE are about 70% of the national average. Appropriations have increased in the last five years, but the state has yet to return to its pre-recession level of funding per FTE.

In addition to institutional support, the state can help students offset the cost of postsecondary education through financial aid. In 2017-18, the state provided roughly $191 million in total need-based financial aid. According to SCHEV staff analysis, the average award was about $4,300 at four-year institutions and $640 at two-year institutions.

A finite amount of revenue means there is a trade-off between investing in direct subsidies to institutions or supporting students through financial aid. If the state does not support institutions to offset costs, tuition could rise at a rate faster than increases in state financial aid. However, state financial aid can directly support students by offsetting higher education costs. As Virginia identifies and adopts strategies to increase attainment, it must weigh the benefits of different investments. A 2019 study of financial aid in Virginia is being undertaken and will provide further insights.

Reinvesting Institutional Savings

Increases in institutional efficiency—in the number of degrees produced relative to FTE—would decrease the cost per degree. This and other efficiencies would give institutions the opportunity to redeploy resources for the benefit of students. Generally, institutions can increase their overall efficiency by increasing business and academic efficiencies.

Business Efficiencies

Higher education is a people-intensive industry, so identifying business efficiencies can be challenging. One option is to look at internal shared services. Institutions should identify ways to create incentives for departments to share resources such as equipment, materials and personnel. Sharing more services will reduce the cost or allow institutions to redeploy resources to better serve students.

On a broader scale, there may be an opportunity for the state to encourage institutions to share services. Virginia's institutions should consider whether cost savings and efficiencies can be generated by consolidating back-room functions across institutions and giving institutions additional resources to increase student support and attainment.

Academic Efficiencies

In addition to business efficiencies, academic efficiencies can increase attainment, thereby reducing the cost per degree. The initial investments needed to improve academic efficiency may increase the cost per FTE but decrease the cost per degree through increased student success.

One option for institutions to investigate is online program delivery. This method can increase flexibility in delivering courses and potentially increase access for people who are

unable to attend on-campus courses. Once the infrastructure is in place, institutions could use revenue from online programs to support students in other ways.

Similar to online courses, institutions could find efficiencies in hybrid programs that combine online and on-campus instruction. This would potentially save on capital costs by reducing capital infrastructure needs or through higher increased utilization of existing buildings. These programs also would reduce the opportunity cost to students by allowing them to better match course schedules to their needs.

Academic efficiencies also can reduce the time needed to attain a degree. Institutional focus on advising and creating clear pathways can ease a student's route to a degree. Additionally, institutions can better utilize summer programs and alternative schedules. By using resources more frequently, providing additional opportunities for credit accrual and being more flexible in scheduling, institutions can achieve efficiencies and potentially increased enrollment. More broadly, institutions can use predictive data to identify students who may need additional support. This will increase completions of current students and make the system more efficient.

Institutions and the state should continue to examine carefully academic programs. Some high-cost, low-enrollment courses could be closed, allowing institutions to reinvest those resources in additional student support or other programs with a high demand. SCHEV currently is working with institutions on a productivity study, which also provides an opportunity to continue to improve program efficiency.

Regardless of how institutions achieve cost savings, those resources can be reinvested to increase degree output. As SCHEV and other policymakers work with institutions, there should be a concerted effort to align current and future investments with proven strategies to increase attainment.

INVESTING IN VIRGINIA'S GOAL: CURRENT CONTEXT AND IDENTIFYING EFFECTIVE PROGRAMS AND POLICY LEVERS

Previous sections of this report examined Virginia's investment in higher education and estimated the number of students needed to meet the 2030 attainment goal. This next section identifies strategies that support the state's goal. Virginia's policymakers will need to weigh investments, reinvestments and policy choices against potential outcomes within the state's specific higher education context. *This report intends to serve as a starting point for those discussions. The programs, investments and policy choices that follow contain many potential options.* To serve as a starting point for analyzing different funding strategies and policy approaches, the next sections outline Virginia's current higher education context and priorities to increase attainment.

The Shifting Cost Burden

The cost of producing degree equivalents is comparatively low in Virginia. However, in the last two decades, the majority of that cost has shifted from the state to students and families. In 2014, Virginia took steps to analyze this shift through the Joint Legislative Audit and Review Commission's (JLARC) multi-part report, *Addressing the Cost of Public Higher Education in Virginia*.[22] The JLARC report found that Virginia's public institutions are, on average, among the nation's most expensive. It also found that auxiliaries (e.g., room and board, dining, athletics and others) were the primary driver of higher spending per student, not educational and related operating costs. The report also noted that the state's approach to providing operating funds did not sufficiently reflect varying situations at institutions, nor did it reflect the differing abilities of institutions to raise tuition.[23]

All of these issues affect affordability. JLARC's 2014 report offered several options to consider which are still relevant today. They are outlined in the table on the following page.

[22] Joint Legislative Audit and Review Commission, *Report to the Governor and General Assembly of Virginia: Addressing the Cost of Public Higher Education in Virginia*. November 2014..

[23] Ibid.

Operating funding: Major JLARC options

JLARC options	Improve affordability & access	Increase state costs	Prioritize academics	Limit institutional autonomy
Option 2: Revise funding policy to account for characteristics that limit ability to generate additional revenue	✓	✓	✓	
Option 3: Allocate higher proportion of funding to the institutions least able to fund operations and those with students least able to afford tuition	✓		✓	
Option 5: Limit tuition increases; provide additional general funds	✓	✓		✓

Funding Priorities

Recent higher education investments have been made with a better understanding of how the cost burden has shifted to students, and further investments were made to mitigate some of this shift. The Governor and the General Assembly took steps in 2019 to invest in higher education and stabilize tuition rates by investing more than $134 million in higher education, including appropriations for:

- Tuition Moderation, $52.5 million, designated for In-State Undergraduate Affordability.
- Tech Talent Investment Fund, $16.6 million, designated for the implementation of performance-based pilots.
- Need-Based Financial Aid, $15.5 million, to increase student financial aid at public colleges, universities and community colleges along with $3.5 million in increased Tuition Assistance Grant funding.
- Workforce Credential Grant Program, $4 million, to increase funding for workforce credential grants.

These actions halted the increase in tuition for the next year and started the realignment of state/student responsibility for education-related costs. Strategies should be developed to continue the realignment. Policymakers also directed SCHEV to conduct a comprehensive review of the state's need-based financial aid and provide a report by November 2019.[24] These investments and directives provide an opportunity for Virginia to shift its financing structure toward a more deliberate approach that increases attainment and helps the state meet its goal. In doing so, the state should adopt a framework that weighs investment proposals, budget cuts and policy changes.

[24] Virginia Legislative Information System, *Budget Bill - HB 1700 (Chapter 854)*. State Budget.

Specific Policy Levers

Virginia has a unique variety of policy "levers" to encourage institutions to increase postsecondary attainment. These include:

- Top Jobs Act 2011
- Six-Year Planning process
- Institutional performance measures
- SCHEV's enrollment and degree projection processes
- The Virginia Plan for Higher Education and its required annual report on progress

Several additional levers have recently been created:

- Tech Talent Fund
- Innovative Internship Fund
- Institutional Performance Partnership Agreements
- Tuition Moderation Fund

With or without additional funding, these policy levers can help align policymakers' goals with institutional actions and reporting.

A Framework for Evaluating Investments and Policy Changes

Developing a framework to evaluate investment and policy proposals is challenging because new issues and opportunities constantly arise as funding approaches change. However, there is one practice that should be applied consistently when identifying strategic financing solutions. Each proposed spending increase or cut should be evaluated in terms of the gains likely to be produced relative to the cost of the proposal as well as the impact on Virginia's underrepresented populations. In this context, cost has two related components: 1) the "sticker price" of the program, initiative or request, and 2) the cost or savings resulting from the impact of the proposal on base spending. Key questions for evaluating proposals and their trade-offs include:

- What is the estimated cost of the proposal?
- How many additional degrees or "degree years" will the program generate?
- What is the estimated cost of instruction and support services for those additional degrees for students and the state?
- Is the cost of the proposed program included in the student cost or the state cost of the program?
- How does that compare to the historical average cost?
- How does the proposal impact underrepresented populations?

When weighing options, Virginia policymakers should keep this framework in mind as postsecondary education investments are made.

Identifying Effective Programs

As part of its efforts to further align policy and funding to meet the Commonwealth's goal for higher education, SCHEV engaged institutions in a "Day of Dialogue "in the spring of 2019 to identify institutional practices that could be scaled and ideas for investments. The group discussed four topics:

- Increase access: students enrolling in postsecondary programs through the pre-K-12 pipeline, and engaging adults with some or no college.
- Improve completion: retention, graduation and time-to-degrees, especially for those from underrepresented populations.
- Identify stable funding models: cost and tuition predictability, efficiencies and innovations.
- Align economic and cultural prosperity efforts: matching programs with demand, work-based learning, internships and keeping students employed in Virginia to meet workforce demands.

At the Day of Dialogue, participating institutions vocally supported changing the state's funding allocation processes in ways that could lead to increased affordability and attainment, including:

- Giving high-priority, at-risk populations greater weight in funding allocations.
- Rewarding institutions for affordability.
- Seeding college saving plans for young children.
- Creating early awareness of financial aid programs and also offering financial aid awards early: Similar initiatives have shown positive results in Indiana, Washington, Oklahoma, Kentucky and New Brunswick, Canada. In Virginia, there are several examples of successful early award programs, including the University of Mary Washington's Rappahannock Scholars and James Madison University's Valley Scholars.
- Re-evaluating the balance of institutional support vs. state financial aid in total state investment.
- Looking at free or debt-free academic and certificate programs for jobs in high demand.
- Giving institutions more flexibility to enroll out-of-state students in exchange for graduating more in-state students.

Using institutional suggestions and national best practices, this report identifies initiatives that, if adopted or scaled, could align funding policies more directly with the state's goals. In

weighing these options as part of future budget recommendations, Virginia's policymakers should apply a framework like the one outlined previously that weighs costs against returns.

Initiatives and Proposals for Increasing Attainment

These proposals are not comprehensive. The funding and policy strategies outlined are designed to give Virginia's policymakers and SCHEV options that will advance higher education attainment. Many suggestions emerging from the Day of Dialogue align with the report's proposals. There may be other policy levers that are not included. As policymakers debate increased attainment, and costs versus benefits, this report offers guidelines for making strategic investments and changes in the state's higher education system. Making budget requests and legislative presentations, and seeking the views and opinions of stakeholders, will help SCHEV select the best strategies to recommend and implement.

Investment Strategies

This section outlines some initiatives from different states and within Virginia to serve as a starting point to evaluate future investments to support Virginia's 2030 attainment goal. Other strategies may be identified going forward, and the ones provided do not reflect any official recommendations. Strategies are grouped into three broad areas: aligning funding with completion needs, increasing affordability and supporting access and success of equity populations.

Align Funding with Completion Priorities

As Virginia researches funding mechanisms that support its goal, one option is to start by aligning current institutional subsidies with the state's completion priorities.

Outcomes-based funding: This strategy provides an alternative to "base adequacy." It can be accomplished by using existing resources, drawing from its own community college system's practices and from national examples. It aligns resources with outcomes and allows Virginia to prioritize equity and specific types and levels of credentials.

> **Virginia Examples:** The community college system began phasing in an outcomes-based funding model several years ago. Its purpose is to support VCCS's strategic goal of tripling the number of credentials that students earn annually. The program requires colleges to enroll and retain more students and provide them with pathways for earning degrees, certificates and credentials that have value in the workforce. By FY 2019-20, VCCS will award 20% of its state allocation funding to colleges based on performance. Colleges receive points based on the progress, retention, completion and four-year-college transfer rates of their students.
>
> Virginia's FY 2019-20 budget allocated $28.4 million in additional funding to universities in the second year of the biennium if each university met specific degree production targets. While this is not a formulaic approach to outcomes-based funding, it prioritizes institutional outcomes through investment.

Amendments to the budget in the 2019 session provided $16.6 million to be allocated to help institutions increase technology-related degrees by at least 25,000 by FY 2038-39. Institutions will receive funds based on their performance. Finally, in the 2019 session, Virginia appropriated $52.5 million in a Tuition Moderation Fund. It awarded monies to institutions only if 2019-20 tuition remained at 2018-19 levels

National examples: A number of states are working to improve desired outcomes by focusing on affordability, specific populations and progress and completion rates. They have adopted outcomes-based funding to help achieve these goals.[25] Tennessee, Louisiana, Indiana and Arkansas have well-regarded statewide models. Oregon developed a model for four-year institutions that emphasizes equity. Texas and Washington have strong models in the two-year sector.

Increase Affordability

In weighing funding options, Virginia can invest in student affordability by increasing student aid and leveraging other resources that help offset costs.

Investments or changes in need-based financial aid: SCHEV is evaluating its need-based financial aid program. The evaluation includes studying the distribution of state aid to different groups of students and measuring the effective net prices students face compared to different models of reform. Additionally, the state could look at the impact of increased need-based aid on access and attainment and recommend more student aid funding.

Free or debt-free college programs: Investing state resources to completely offset the cost of higher education for students in certain programs or income ranges is another opportunity for Virginia. Tennessee and at least 19 other states have implemented free college programs. For Tennessee's Promise programs, most of the additional aid leveraged by "free community college" is federal aid that comes from the vast expansion of financial aid application submissions. [26]

Leveraging public benefits/addressing comprehensive student needs: Virginia can also leverage existing federal resources to help offset the cost of postsecondary education. This is a new and quickly emerging strategy. States align public benefits policies to further support access for low-income students and create a more comprehensive financial aid support system, one that sees students through to completion. State leaders are well positioned to facilitate these programs and strategies, identifying barriers to access and success for students, such as transportation, healthcare, housing, and childcare, and fostering cross-agency and stakeholder processes to address those barriers.

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[25] Snyder, Martha, and Scott Boelscher, *Driving Better Outcomes: Fiscal Year 2019 State Status & Typology Update*.

[26] Carruthers, Celeste, *5 Things to Know about the Tennessee Promise Scholarship*. Brookings.

New Jersey recently changed SNAP eligibility, allowing all SNAP-eligible students enrolled at least half-time in approved career and technical education (CTE) programs at New Jersey community colleges to count that enrollment toward work requirements for SNAP, which makes them eligible for SNAP benefits. The benefits offset the broader cost of attendance and reduce barriers to completion.

Washington's Basic Food Employment & Training (BFET) and SNAP E&T programs provide a third-party match model for federal SNAP 50-50 funds. It is managed as a reimbursement. For community colleges participating in BFET, expenditures on BFET students for tuition, most fees, and the time and effort of staff supporting their BFET programs, are all considered to be administrative costs that can be covered by either 100 percent or 50-50 matching funds. It is primarily used in non-transfer, professional- technical programs.

As noted previously, Virginia receives approximately $85 million in federal SNAP funds, and it is estimated that about 20% of Virginia's postsecondary students would be eligible to receive those benefits. Virginia Commonwealth University (VCU) and the VCCS are examining ways to assist students who have food and housing insecurities. The schools also are looking at federal and state programs that provide benefits in order to help students access those resources.

Support Access and Success of Underrepresented Populations

While aligning current investments with completions, developing effective policies and investing in affordability can support Virginia's underrepresented populations, the following strategies specifically target those groups.

Early award of financial aid: As part of the state's review of financial aid, Virginia could evaluate the impact and cost of early awards for financial aid. These awards could be made within existing resources, depending on the structure of any changes, and they would target Virginia's low-income population.

Indiana, Washington and Oklahoma have programs that allow low-income middle school students to receive early commitments of state financial aid. In Kentucky almost all high school students earn scholarships starting in 9th grade by completing semesters successfully. Once students are "in the door," those with lower incomes qualify for more scholarships. In New Brunswick, Canada, a random experiment found that a dollar of aid that at-risk ninth grade students "receive" can double graduation rates compared to the same dollar received as college freshmen.

Adult promise programs: Virginia's adult population can help the state meet its goal. Using a "free college" approach, Virginia could implement an adult promise program. Indiana's program serves between 3,000 and 6,000 students annually.[27] Cost estimates vary for

[27] Indiana Commission for Higher Education, *2017 State Financial Aid Summary*. Reports and Analysis.

adult reengagement programs due to their size and scope. As Virginia researches this measure, it could start with a smaller program ($1-$5 million range), then analyze the return and scalability of the program in future years.

Emergency completion and retention grants: Creating a state-level program to help support students who encounter emergencies during their schooling would improve Virginia's degree efficiency. This could be done at a relatively low cost to the state and directly supports low-income students without access to other funds in the event of an emergency.

To help address the needs of the most at-risk students (those who already have taken advantage of financial aid and Pell grants), Minnesota provides state-based emergency grants to assist students when serious unforeseen events threaten credential attainment. At least one Virginia institution University of Virginia – Wise, has implemented an emergency aid program focused for students who are close to completion. The institution reported a 2% increase in its graduation rate the year the program was implemented.

Campus-based intensive student supports: Virginia and its higher education institutions could invest in robust campus-based student support programs, including intrusive advising. These deliberate intervention programs often support underrepresented students who need assistance in navigating postsecondary institutions. These efforts could start as pilot projects and then be scaled.

The City University of New York Accelerated Student in Associate Program (CUNY ASAP) helps students earn associate degrees by offering a wide-range of supports. Students are required to meet regularly with their advisor and attend full time. While the program has a higher cost per FTE, the cost per degree produced is lower than the traditional population. Various Virginia institutions have developed, or are developing, strong supports for students by using data analytics and the most up–to-date communications tools to help keep them enrolled and on track for graduation. VCU's vice provost for strategic enrollment management, Dr. Tomikia LeGrande, recently testified before Congress about "pioneering strategies that empower students to access and complete college programs that fit their needs." Dr. LeGrande noted that VCU's four- and six-year graduation rates have increased by more than 14 percentage points since 2012 and are now higher than the national average. She noted that VCU's Hispanic, African American and Pell-eligible students graduate at nearly the same rate as classmates who have more advantages.[28]

Guided pathways/meta-majors: Investing in guided pathways or meta-majors would enable Virginia to partner with institutions to help create and strengthen student success rates.

[28] Gresham, Tom, "*Tomikia LeGrande testifies to congressional committee about VCU's student success efforts*. VCU News, Thursday, June 20, 2019.

California established a $150 million Guided Pathways Award Program to support planning and implementation of guided pathways strategies.

Near-completer initiatives: Finding and engaging students who are close to a credential, through a statewide campaign, is one lower-cost way to help Virginia achieve its goal.

These students require fewer credits, so a marketing campaign would help attract these populations. Mississippi's Complete 2 Compete uses intensive marketing and data to target students who are close to a degree. Complete Florida focuses on the state's adult population that has some college but no degree. The online program partners with institutions to provide instructional materials. SCHEV made a recommendation in 2018 to consider a similar program. The cost estimates could be updated if policymakers decide to study this initiative.

Policy Strategies

The following policy strategies support Virginia's goal. The Governor's Office, the Legislature, other interested policymakers and SCHEV have many options before them to consider before formal recommendations are adopted. The strategies in this section are generally cost neutral beyond the time and materials needed to implement and change policies. However, each should still be weighed against a framework that evaluates the return on investment. While some of these strategies may benefit specific underrepresented populations, they generally reflect system-wide reform.

Prior learning and pathways: Developing defined pathways and credit for prior learning can make the overall cost (in dollars and time) more economical for students. Florida recognizes Defense Activity for Non-Traditional Education Supports (DANTES) and Defense Language Proficiency Test (DLPT) subject exams.[29] The VCCS, George Mason University and VCU are some of the institutions that have increased their efforts to assist veterans transfer military learning into college credit. Other Virginia institutions also are developing similar supports.

Improved transfer policies: Virginia has a relatively low transfer rate from two-year to four-year institutions. The 2018 Virginia General Assembly passed legislation requiring institutions of higher education to work together to develop plans to ensure standards and procedures that will provide a more efficient transfer process.

Transfer Virginia, a collaborative partnership between SCHEV, the VCCS, the Aspen Institute, HCM Strategists and Sova is a result of this legislation. It is a three-year initiative with explicit strategies to award an additional 6,600 bachelor's degrees to transfer students each year.[30]

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[29] Florida Department of Education. *Articulation Coordinating Committee: Credit by Exam Equivalencies*.

[30] Virginia Community College System Blog, *Transfer Virginia Launches – Goal Is to Ensure That Students Are Able to Make the Jump from Community College to the State's Four-year Universities More Efficiently*.

Reverse transfer: Traditionally, credit hours earned at four-year institutions have not counted toward a diploma from a two-year institution. The reverse transfer process allows a student who has earned credit hours from a four-year school to apply those credits toward an associate degree. This is an opportunity for Virginia to help students who have some four-year credits and some two-year credits achieve a credential at a lower cost by allowing credits to count differently. Colorado's reverse transfer program allows students to combine two-year and four-year credits into an associate degree.

Online options: In the United States, 28 million (1 in 7) college students are completing a bachelor's degree online. The Online Virginia Network (OVN) targets adult learners, many of whom have some college credits but no bachelor's degree. The OVN makes it easier for Virginians to complete their undergraduate degrees online. OVN is a collaboration between GMU, Old Dominion University (ODU) and the VCCS.

Increased access and messaging: Increasing access and success, particularly for underrepresented students, is essential to meeting Virginia's goal. Finding ways to streamline and support student access matters immensely. Many of these suggested changes were part of a 2018 SCHEV recommendation. The recommendation included both technology and non-technology solutions.

Expanding SCHEV access efforts would centralize the coordination and development of state access efforts and resources. It also would provide a one-stop-shop for student access, similar to what is being done by the College Success Arizona and the Maryland Higher Education Outreach and College Access programs.

Direct outreach to students, through either student advising programs or informal efforts, also can help increase access and success. Replicating the success of West Virginia's Txt 4 Success program statewide, or working with one of the Virginia colleges that has developed a nudging program would provide a blueprint for this endeavor. Additionally, The Virginia College Advising Corps or the VCCS High School Career Coaches program, both of which use near-peer advising to support college access for underrepresented students, could be scaled into a statewide policy to increase access to advising.

Universal college application and FAFSA completion: Partnering with Virginia Department of Education to help increase FAFSA completion will help Virginia students understand the resources that are available to them to offset college costs. This likely will help low-income students. Having these materials available in languages other than English also would reduce barriers for underrepresented populations. Initiatives in these areas have proven effective in Idaho and Tennessee.

Convening institutions and other interested parties to share best practices: Meetings, such as the Virginia Workshop on Social Mobility, help institutions and other stakeholders share best practices and create partnerships that enhance college enrollment, student

access and student success. SCHEV also could create materials that encourage college enrollment in school districts where it lags. The Council also could develop successful student support strategies for underrepresented students and focus on student advising efforts. To increase institutional participation, SCHEV could work with the legislature to create a competitive grant program that supports institutional initiatives and identifies best practices.

CONCLUSION

In the 1950s, policymakers sought ways to provide higher education to all Virginians in order to maintain an educated and economically progressive and competitive citizenry. With concerns about the state's competitiveness in postsecondary enrollment and employability, and limited college and university capacity to serve more students, the 1954 General Assembly charged the Virginia Advisory Legislative Council to study the state's opportunities in higher education. Virginia students lagged behind the national average and other states in postsecondary enrollment, and advances in early technology begged for a more educated workforce. However, many Virginia high school graduates could not afford to enroll in the state's colleges and universities, and the number of high school graduates was expected to increase.

In the early 1960s, Virginia responded to those needs by creating the State Council of Higher Education to promote efficiency, collaboration and coordination of efforts.

Existing college services were expanded, laying the foundation for the development of new institutions and opportunities for higher education in Virginia, including the creation of the Virginia Community College System.

Today, Virginia's demographics and economic realities are changing again. There are significant differences in postsecondary enrollment and completion, but this time the disparity exists within the geography of the Commonwealth and between subpopulations. Technology once again demands a higher-skilled workforce. Middle- and low-income families who see the cost of college as a barrier to postsecondary enrollment are concerned about rising student debt. They now question the once resolute value of higher education. And Virginia's high school population is not growing.

As was true more than 60 years ago, Virginia finds itself at a pivotal moment in higher education, only slightly different from that which motivated those leaders to make sweeping changes in higher education.

Based on current demographics and economic imperatives, it is again time for Virginia to take stock of its educational resources and needs, to be proactive in planning and support, and to make investments to strengthen the services and resources that improve access to and completion of valued higher education credentials. Not unlike the circumstances and challenges faced by prior leaders, Virginia must develop an action plan to provide equitable access to higher education for all students, one that helps ensure a prosperous economy and active citizenry. Based on the direction shown by the Joint Subcommittee on the Competitiveness of Higher Education in Virginia, budget language in recent legislative sessions, and a Day of Dialogue with representatives from all of Virginia's public colleges and universities, the workgroup developed this report on a statewide higher education finance plan. It incorporates the priorities articulated by all concerned stakeholders and provides ways to develop strategies that will achieve greater education attainment outcomes.

APPENDIX A: EXAMPLES OF FRAMEWORKS FOR EVALUATING INVESTMENTS AND POLICY CHANGES

The report outlines a general method or framework to evaluate investments, budget cuts and policy changes. Policymakers can ask a series of questions as they decide which approaches are best, but generally each proposed spending increase or cut should be evaluated in terms of the gains relative to the cost of the proposal and the impact on Virginia's underrepresented populations. This appendix provides three examples of different strategies that Virginia can evaluate. They are:

- Example 1: Investment in Need-Based Financial Aid;
- Example 2: Accelerated Study in Associate Programs; and
- Example 3: A Reduction in Student Support Services.

These examples do not constitute recommendations. Additionally, the dollar amounts used in each example illustrate how the framework and analysis can be applied to different scenarios. In identifying strategies that will lead the state to its goal, Virginia needs to determine the appropriate spending amounts for each proposal.

The examples provided use the Delta Cost Project and the IPEDS cost per degree estimate of $19,400 as a baseline for the cost per degree year estimates, not the SCHEV estimate of $19,900. While this is important to note, it does not change the framework for evaluating different programs. The examples are provided below.

Example 1 illustrates the impact of a $1 million increase in need-based aid. The specific assumptions built into this analysis are in a footnote, but generally, need-based aid has been found to increase enrollment and completion. This new investment generates additional degree years, and the cost of those degree years is estimated at $300,000 ($1,000,000/30). Some of the additional instructional costs are borne by the state, but the cost to students is reduced because of the increased aid. The net cost to the state is used to generate a cost per degree for these new degrees, which is compared to the Delta Cost Project and IPEDS estimate provided previously in this report.

Example 1: Investment in Need-Based Financial Aid[31]

Estimated size of investment:	$1,000,000
Impact on completed degree years:	30*
Estimated cost of additional degree years:	$300,000**
Net cost to state:	$1,150,000***
Net cost to students:	$ -850,000****
Total net cost to Virginians:	$300,000
Cost per additional completed degree year:	$10,000
Per degree year cost savings	$ 9,430

Underrepresented Populations: Need-based financial aid programs encourage more low-income students to pursue postsecondary education.

This example shows that financial aid can produce a positive return. The estimated cost per degree year is about $19,400 currently. With increased financial aid, the cost per degree year declines to $10,000 for the students affected. More degrees at a lower cost would drive down Virginia's cost per degree.

Additionally, need-based financial aid programs target low-income students, one of Virginia's underrepresented populations. While this example relies on many assumptions, this type of analysis would give SCHEV the ability to evaluate investment and program returns.

Example 2 illustrates the impact of a significant investment in student support services like the ones provided in the City University of New York Accelerated Study in Associates Program. The specific cost assumptions in this analysis are outlined in the footnote, but generally this example shows how a large-scale investment impacts completed degree years and the cost per degree.

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[31] *Rigorous experimental and quasi-experimental research has found a roughly 3-5% increase in the odds of completion for every $1,000 reduction in unmet financial need, so 1,000,000 divided by 1,000 = 1,000 times .03 = 30.

**Assumes half of additional completed degrees result from using earned credit hours that previously would not have been used due to attrition, and half comes from additional enrollments that increase instructional costs.

***Assumes half additional instructional and support costs are covered by state funds (appropriations) and half by tuition and fees. $1,000,000 state investment in financial aid plus state share of additional instruction and support ($150,000)

****Students' additional costs of $150,000 minus the $1,000,000 in financial aid received.

Example 2: Accelerated Study in Associates Program (ASAP)[32]

Estimated size of investment:	$200,000,000
Impact on completed degree years:	20,000*
Cost of additional degree years:	$200,000,000**
Net cost to state:	$300,000,000***
Net cost to students:	$0****
Total net cost to Virginians:	$300,000,000
Cost per additional completed degree year:	$15,000
Per degree year cost savings:	$4,430

Underrepresented Populations: The ASAP program can support access and affordability for several underrepresented populations, including low-income and adult students. This program provides comprehensive student supports and has been shown to increase attainment. Compared to Virginia's current cost per degree year of $19,430, this example shows an estimated savings of about $4,430. Compared to Example 1, the cost per degree year is higher, but the total number of degrees produced is also higher. It will be up to policymakers to weigh the advantages and disadvantages of the two programs when making recommendations. However, this type of analysis provides SCHEV with tools to produce program-level returns and compare investment strategies to target resources.

Example 3 highlights a budget cut scenario that reduces student support services. The specific assumptions are presented in a footnote, but generally the reduction in student support services reduces the number of completed degree years. The cut also reduces instructional costs under this scenario since fewer students will earn credits. This reduction emphasizes the magnitude of the reduction.

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[32] *Based on costs of $2,000 per year per student served (assumed to be lower than CUNY costs due to location, scale and efficiency from experience implementing elsewhere), with 100,000 students served annually at 20 percentage point increased odds of completion.

**Assumes half of additional completed degrees result from using credit hours that previously would not have been used due to attrition, and half comes from additional enrollments that increase instructional costs.

***Assumes half of additional instructional and support costs are covered by state funds (appropriations) and half by tuition and fees. $200,000,000 state investment in ASAP services plus state share of additional current base-level instruction and support ($100,000,000).

****Student costs offset either by Pell grants or financial aid component of ASAP program.

Example 3: Reduction in student support services[33]

Estimated size of reduction:	-$10,000,000
Impact on completed degree years:	-1,000*
Estimated cost of degree years:	$10,000,000**
Net savings to state:	-$15,000,000***
Net savings to students:	-$ 2,500,000****
Net savings to Virginia:	$17,500,000
Cost per additional degree year:	$36,930
Increased Cost per degree year:	$17,500

Underrepresented Populations: Underrepresented populations tend to need more student support services, so this reduction will likely be at the expense of those populations.

This example shows a savings to the state and to students through both the direct cut and the ripple effect of reducing instruction costs. However, this example shows an increase in the cost per degree nearly double the $19,400 estimate used as the baseline for this example, and the reduction does not increase attainment or access for underrepresented populations. Evaluating proposed cuts and their impact on cost per degree year will help policymakers better understand how a reduction in funding impacts Virginia's ability to meet its goal. This approach also gives policymakers a framework for evaluating different budget cuts during a recession.

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[33] *Based on 20% reduction in odds of completion for every $2,000 cut in student support services.

**Assumes half of lost degree years from reduced instruction and half from under-used credit hours.

***Assumes state share of savings from reduced instruction is 50%

****Assumes student share of savings from reduced instruction is 50%, and 50% of that was covered by federal grant aid.