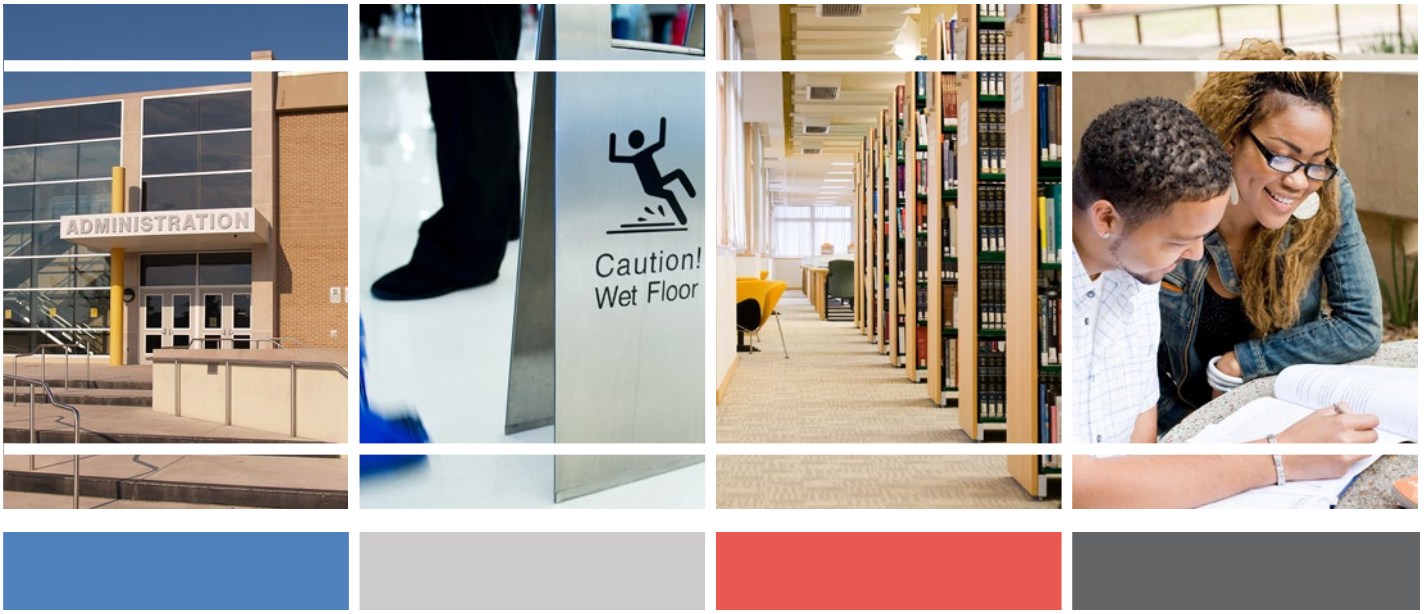
Report to the Governor and the General Assembly of Virginia

Support Costs and Staffing at Virginia's Higher Education Institutions



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JOINT LEGISLATIVE AUDIT AND REVIEW COMMISSION

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COMMONWEALTH of VIRGINIA

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April 2, 2015

The Honorable John C. Watkins, Chair
Joint Legislative Audit and Review Commission
General Assembly Building
Richmond, Virginia 23219

Dear Senator Watkins:

In 2012, the General Assembly directed the Joint Legislative Audit and Review Commission to study the cost efficiency of the Commonwealth's institutions of higher education and to present options and recommendations for reducing the cost of public higher education in Virginia (HJR 108). This is the fourth report in a series of reports released during 2013 and 2014. This report was briefed to the Commission and authorized for printing on October 14, 2014.

On behalf of Commission staff, I would like to thank the staff of the State Council of Higher Education for Virginia, Department of Human Resource Management, and Department of General Services for their assistance during this review. I would also like to acknowledge staff at Virginia's 15 public higher education institutions, who were very accommodating to our research teams.

Sincerely,

Hal E. Greer

Hal E. Greer
Director

Contents

Abbreviations

Christopher Newport University	CNU
College of William and Mary	CWM
George Mason University	GMU
James Madison University	JMU
Longwood University	LU
National Center for Education Statistics	NCES
Norfolk State University	NSU
Old Dominion University	ODU
Radford University	RU
University of Mary Washington	UMW
University of Virginia	UVA
University of Virginia – Wise	UVA-Wise
Virginia Commonwealth University	VCU
Virginia Military Institute	VMI
Virginia State University	VSU
Virginia Tech	VT

Summary: Support Costs and Staffing at Virginia's Higher Education Institutions

WHAT WE FOUND

Spending on support functions has increased, but rate of increase has been declining

Spending on support functions at Virginia's 15 public higher education institutions increased 28 percent from 1991 to 2010, when adjusted for enrollment and inflation. This increase accounted for 17 percent of the growth in total higher education spending. The rate of increase varied substantially across institutions, and some institutions experienced reductions. The rate of increase across all institutions has declined, though, since most of the increase occurred between 1991 and 2000. Support spending increased six percent between 2000 and 2010, less than the 11 percent increase in instructional spending.

Most Virginia institutions spend less than comparable schools nationwide, but several spend substantially more

Eleven of Virginia's 15 institutions spend less than similar institutions nationwide. Six of these (JMU, ODU, VCU, Radford, Virginia State, and Virginia Tech) spend less than 75 percent of other similar public institutions. In contrast, UVA, VMI, and William and Mary spend more than 75 percent of other similar institutions.

WHY WE DID THIS STUDY

The General Assembly directed JLARC to study the cost efficiency of the state's institutions of higher education and to identify opportunities to reduce costs. Interest in this topic was spurred by substantial increases in tuition and fees in recent years and the high debt load of Virginia students. This report, which is the fourth in JLARC's higher education series, focuses on support functions, including information technology and procurement (HJR 108, 2012).

ABOUT SUPPORT FUNCTIONS AT FOUR-YEAR PUBLIC INSTITUTIONS IN VIRGINIA

Virginia has 15 four-year public higher education institutions. Collectively, their spending on support functions totaled $1.2 billion, or one-fifth of total spending.

Support functions facilitate an institution's core academic mission by providing services to students and faculty and for general operation of the institution. Academic and general administration, libraries, and building repair and maintenance are the largest support functions in terms of spending and number of staff. Support functions are funded mostly through tuition and fees and state general funds.

Virginia institutions emphasize academic support

Virginia institutions allocate the largest proportion of support spending for academic support, which includes spending for libraries, curriculum development, and academic administration. Institutions report that academic support is important for student retention and graduation. Ten institutions spend more on academic support than similar schools around the country, and eight of these also have higher retention and graduation rates than comparable schools.

Institutions could potentially reduce costs by reviewing organizational structure

Spans of control analysis

Used in the corporate world and more recently by colleges and universities in working toward organizational efficiency, spans of control analysis helps streamline organizational structures by identifying areas with many layers of management and high numbers of supervisors relative to employees.

For this study, JLARC staff used "spans of control" analysis to identify opportunities to improve the efficiency of support functions at four-year public institutions in Virginia. In some organizations, there are too many supervisors, which may lead to unnecessary layers of management between front-line employees and top executives. These layers can slow decision making and unnecessarily increase costs. It appears Virginia institutions have a disproportionately high number of employees in supervisory positions. In fact, more than half of supervisors at Virginia's higher education institutions supervise three or fewer employees; 24 percent supervise only one.

These narrow spans of control (i.e. too few employees per supervisor), which sometimes point to structural inefficiency, are not unique to Virginia and have been found at other higher education institutions nationwide. Several institutions outside Virginia have increased their spans of control and reported reducing their total annual operating costs by 0.5 to one percent. Such reductions, if achieved by Virginia institutions, could potentially reduce costs by several hundred dollars per student, per year.

TABLE
Virginia institutions could reduce costs by increasing spans of control

	Average annual savings ($M)		Average savings per FTE student	
Institution	*Low*	*High*	*Low*	*High*
Outside Virginia	*$3.2*	*$20.0*	*$203*	*$790*
Virginia baccalaureate	0.3	0.5	157	314
Virginia master's	0.9	2.0	104	215
Virginia doctoral	3.8	7.5	176	353

Source: JLARC staff analysis of findings and estimated savings achieved at institutions outside Virginia, NCES data, and institutions' FY 2012 financial reports.
Note: Operating expenditures exclude hospital and medical center expenditures at VCU and UVA. Low and high average annual savings are based on 0.5 and 1.0 percent of total annual operating expenditures.

Several procurement strategies could be better utilized to further reduce costs

Procurement is a major expense for Virginia institutions. Cooperative procurement of goods and services is one of the recommended strategies to reduce procurement costs. All Virginia institutions report that they use cooperative procurement. In interviews, it was most commonly mentioned by institution staff as the strategy from which they received the greatest benefit, in terms of both cost savings and reduced staff time.

Current cooperative procurement efforts by Virginia institutions, however, are not as effective as they could be, because the buying power of institutions and state agencies is fragmented. Many cooperative contracts may not maximize cost savings because of the lack of collaboration across institutions during the contract negotiation process.

All Virginia institutions report using another recommended strategy: institution-wide contracts. These allow for better pricing by aggregating the buying power of the individual institution to one or a few vendors. Many Virginia institutions, however, do not strictly enforce the use of these contracts, allowing "off contract" purchases, which may drive up spending. Institutions also are not effectively limiting the variety of goods, such as computers and printers, available for purchase. This hinders an institution's ability to take advantage of favorable pricing and economies of scale.

Institutions could reduce support costs through several other strategies

Several other strategies to improve higher education support functions have also been consistently recommended to improve efficiency and reduce costs. These strategies include centralizing staff and automating processes. Most Virginia institutions already centralize staff performing similar functions and many have automated major support functions, such as financial and human resource systems. Some schools, however, could further centralize certain staff into one office or into one or more "shared service" centers across campus. Processes at some institutions also still remain heavily paper-based. For example, only a few schools have automated systems for time, attendance and leave; performance evaluations; travel reimbursement; and staff recruitment.

Most Virginia institutions have already adopted key IT efficiency strategies. However, some institutions could further require the co-location and "virtualization" of new servers to reduce costs. Larger institutions could further limit the variety of hardware and software purchases, which would enable the institution to buy larger quantities of a specific model and achieve better prices.

WHAT WE RECOMMEND

Legislative action

- Include language and funding in the Appropriation Act for the purpose of hiring a consultant to assess opportunities to reduce costs through cooperative procurement.
- Amend the Code of Virginia to direct institutions, the Department of General Services, and the Virginia Information Technologies Agency to implement the findings of the consultant review.

Boards of Visitors action

- Require a comprehensive review of the institution's organizational structure and work processes to identify opportunities to increase spans of control, further centralize staff, or better use automation.
- Revise human resource policies to eliminate and prevent unnecessary supervisory positions by developing standards for broader spans of control.
- Require policies to maximize standardization of purchases of commonly procured goods, including requirements to use institution-wide contracts.

See the complete list of recommendations on page v.

Recommendations: Support Costs and Staffing at Virginia's Higher Education Institutions

RECOMMENDATION 1

Boards of visitors at all Virginia institutions should direct staff to perform a comprehensive review of their organizational structure, including an analysis of spans of control and a review of staff activities and workload, and identify opportunities to streamline their organizational structure. Boards should further direct staff to implement the recommendations of the review to streamline their organizational structures where possible (Chapter 3, page 31).

RECOMMENDATION 2

Boards of visitors at all Virginia institutions should require periodic reports on average and median spans of control and the number of supervisors with six or fewer direct reports (Chapter 3, page 31).

RECOMMENDATION 3

Boards of visitors at all Virginia institutions should direct staff to revise human resource policies to eliminate unnecessary supervisory positions by developing standards that establish and promote broader spans of control. The new policies and standards should (i) set an overall target span of control for the institution; (ii) set a minimum number of direct reports per supervisor, with guidelines for exceptions; (iii) define the circumstances that necessitate the use of a supervisory position; (iv) prohibit the establishment of supervisory positions for the purpose of recruiting or retaining employees; and (v) establish a periodic review of departments where spans of control are unusually narrow (Chapter 3, page 32).

RECOMMENDATION 4

The General Assembly may wish to consider including language in the Appropriation Act and appropriating funding for a review of cooperative procurement. The review should be performed by a consultant and involve the Auditor of Public Accounts, Department of General Services, Department of Planning and Budget, State Council of Higher Education for Virginia, and Virginia Information Technologies Agency. The review should determine (i) the categories of goods and services for which cooperative procurement would enable higher education institutions to achieve savings; (ii) for each category of goods and services, to what extent institutions would realize greater savings by using the Department of General Services or Virginia Information Technologies Agency, or a higher education cooperative; and (iii) for each category of goods and services, to what extent state agencies would pay higher costs if institutions used a higher education cooperative instead of the Department of General Services or Virginia Information Technologies Agency. Findings from the review should be reported to the Chairs of the House Appropriations

and Senate Finance Committees and the House and Senate General Laws Committees by September 1, 2016 (Chapter 4, page 37).

RECOMMENDATION 5

The General Assembly may wish to consider amending the Code of Virginia, as appropriate, based on the findings of the consultant review of higher education procurement, to direct all higher education institutions in Virginia to participate fully in joint procurement through higher education cooperatives or state contracts negotiated by the Department of General Services and the Virginia Information Technologies Agency (Chapter 4, page 38).

RECOMMENDATION 6

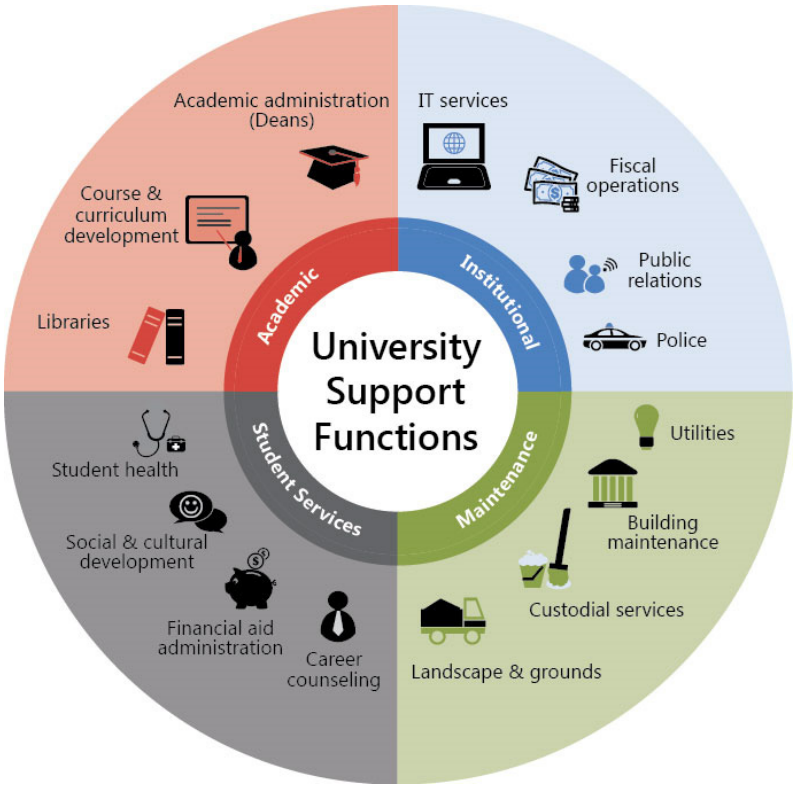
Boards of visitors at all Virginia institutions should direct institution staff to set and enforce policies to maximize standardization of purchases of commonly procured goods, including requirements to use institution-wide contracts (Chapter 4, page 39).

RECOMMENDATION 7

Boards of visitors at all Virginia institutions should consider directing institution staff to provide an annual report on all institutional purchases, including small purchases, that are exceptions to the institutional policies for standardizing purchases (Chapter 4, page 39).

While auxiliary enterprises such as student dining, housing, and recreation can be considered support functions, they are excluded from this study because they were addressed in a September 2013 JLARC report.

FIGURE 1-1
Higher education institutions perform a variety of functions to support faculty and students



Source: JLARC staff analysis of research literature and state chart of accounts.
Note: IT services for classroom and research activities often fall under academic support.

Support functions are funded primarily through tuition, fees, and state general funds

Students, families, and the state are the primary payers for support functions. Tuition and fees paid by students and families represent approximately 41 percent of the revenue used to fund support functions (based on a review of institutions' financial statements and assuming that revenue is distributed evenly across functions). This equates to $3,300 per student, on average, or 33 percent of the average price of tuition and fees for an in-state student. A typical student would pay about $13,200 for support functions over four years. State appropriations represent an estimated 23 percent of the revenue used to fund support functions. Some support services are funded through other revenue, such as grant funding for police departments, investment returns from fundraising, and student fees for health services.

1 Support Functions at Virginia Institutions

SUMMARY Support functions enable an institution's core academic mission by providing services that benefit faculty and students. Support functions account for over one-fifth ($1.2 billion in 2012) of total spending at Virginia public four-year institutions. The largest portion of support spending is for academic support services, which include academic administration, libraries, and curriculum development. Even though support staff represent the majority of staff across Virginia institutions, the number of support staff positions has declined in recent years.

Through the mandate for this study series, the General Assembly directed the Joint Legislative Audit and Review Commission (JLARC) to review the cost efficiency of Virginia's institutions of higher education and identify opportunities to reduce the cost of public higher education. The overarching intent was to assess the major drivers of costs at Virginia's 15 public four-year higher education institutions amid substantial increases in tuition and fees (Appendix A). To address the broad scope of the mandate, JLARC staff is conducting five studies over two years. This fourth study in the series examined costs and staffing for functions that support the academic mission. JLARC staff reviewed research literature on higher education, collected information from each Virginia institution and various national databases, and interviewed key support function staff (Appendix B).

Support functions facilitate an institution's ability to perform its core academic mission

Activities of higher education institutions can be grouped into two broad areas: core academic functions and support functions. Core academic functions, such as instruction, are the mission-critical services addressed in a December 2013 JLARC report. Support functions enable or enhance core academic functions and benefit faculty and students. The four major types of support functions are:

- academic administration, such as course and curriculum development and libraries;
- student services, such as admissions, counseling, and health care;
- institutional support, such as information technology (IT), budgeting, and other administrative services; and
- facilities operations and maintenance (Figure 1-1).

Academic and general administrative services, and building operations and maintenance are among largest support functions

Support functions closely tied to academics, such as academic administration and libraries, account for the largest percentage of spending and staffing for support functions. Other functions that account for large percentages of spending include general administrative services such as human resource services, IT for administrative services, and building repairs and maintenance (Table 1-1).

TABLE 1-1
Ten functions represent most support spending and staffing at Virginia's 15 public four-year institutions (2013)

Functional area	Spending ($M)	Staffing
Academic administration, faculty and curriculum development	$250.5	1,986
Libraries	155.1	916
General administrative services for the institution	124.8	1,485
Building repairs and maintenance	119.5	1,465
Public relations and development	100.0	1,009
Executive management	91.7	723
Computing support for academic services	89.4	713
Student admissions and records	64.7	672
Safety and security	50.4	656
Fiscal operations	47.1	858
Total, 10 largest functions	**$1,093.2 (70.2%)**	**10,484 (70%)**
Total, all other functions	$464.6	4,574
Grand total, support functions	**$1,557.9**	**15,058**

Source: JLARC staff analysis of spending and staffing data provided by all 15 of Virginia's public four-year higher education institutions.
Note: Spending data reflects FY 2013 and staffing data reflects March 1, 2013. Staffing data reflects full-time equivalent positions.

State has limited authority over major support functions at many institutions

Under the Restructuring Act, 13 of Virginia's institutions have been granted autonomy from the state in the operation of some of their major support functions. The Restructuring Act allowed institutions greater autonomy, with the idea that, once free from state policies and procedures, institutions could run more efficiently and dedicate more resources to the core academic mission. The Restructuring Act created a tiered system with three levels of autonomy that eliminated the need for institutions to obtain pre-approval from the state for certain actions. All institutions are granted minimal autonomy in several areas, such as in the disposal of surplus property. Institutions with Level III status have autonomy from the state in six additional func-

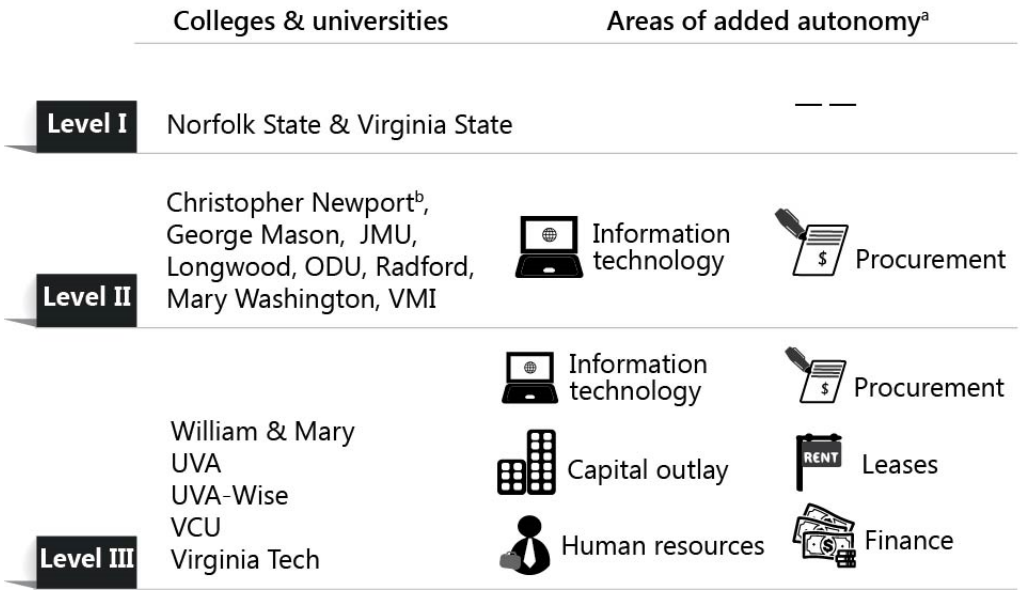
Restructuring Act

The Restructured Higher Education Financial and Administrative Operations Act of 2005 grants higher education institutions three levels of operational autonomy.

Level I institutions have minimal autonomy. Institutions seeking additional autonomy can enter into a memorandum of understanding (Level II) or management agreement (Level III) with the state.

tions, and Level II institutions have autonomy in two functions, as long as they agree to certain conditions (Figure 1-2). Level I institutions (Norfolk State and Virginia State) still must seek pre-approval from the state in all six additional areas.

FIGURE 1-2
Virginia institutions have different levels of autonomy from the state



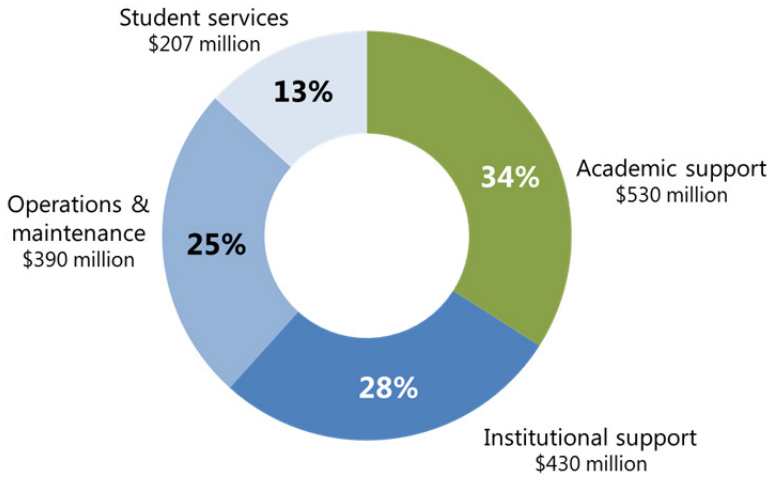
Source: JLARC staff analysis of the Restructuring Act and discussions with staff at each institution.
Note: Institutions seeking Level II status must chose autonomy in two of three areas: capital outlay, IT, and procurement.
[a] In addition to minimal autonomy granted through Restructuring Act. [b] Christopher Newport chose authority in capital outlay and IT. All other Level II institutions chose IT and procurement.

Support spending is one-fifth of total spending, and largest portion is for academic support

Virginia's institutions spent $1.2 billion on support functions in FY 2012. This accounted for 21 percent of total spending by institutions across all functions. The majority (57 percent) of spending by institutions was on core academic functions and the remainder (22 percent) was on other functions, including auxiliary enterprises.

Academic support comprised approximately one-third ($530 million) of total spending on support functions in FY 2013, the largest portion of support spending (Figure 1-3). The second largest portion was for institutional support, followed by operations and maintenance. Spending on student support services, which include services that promote students' emotional and physical well-being and development outside of the classroom, was the smallest portion across institutions.

FIGURE 1-3
Academic support accounts for the largest portion of spending on support functions (FY 2013)



Source: JLARC staff analysis of spending data from Virginia's 15 public four-year institutions.

Numbers of support staff, which include a wide variety of positions, have declined overall

Examining the number of support staff at higher education institutions is important because these positions are a large proportion of total staff, and personnel costs comprise a majority of spending on support functions. Support staff include a wide range of positions:

- provosts, deans, librarians (academic support);
- presidents, vice presidents, finance, information technology, procurement, human resource staff (institutional support);
- registrars, financial aid advisors, career services staff (student services); and
- electricians, plumbers, custodians, landscapers, other skilled workers (operations and maintenance).

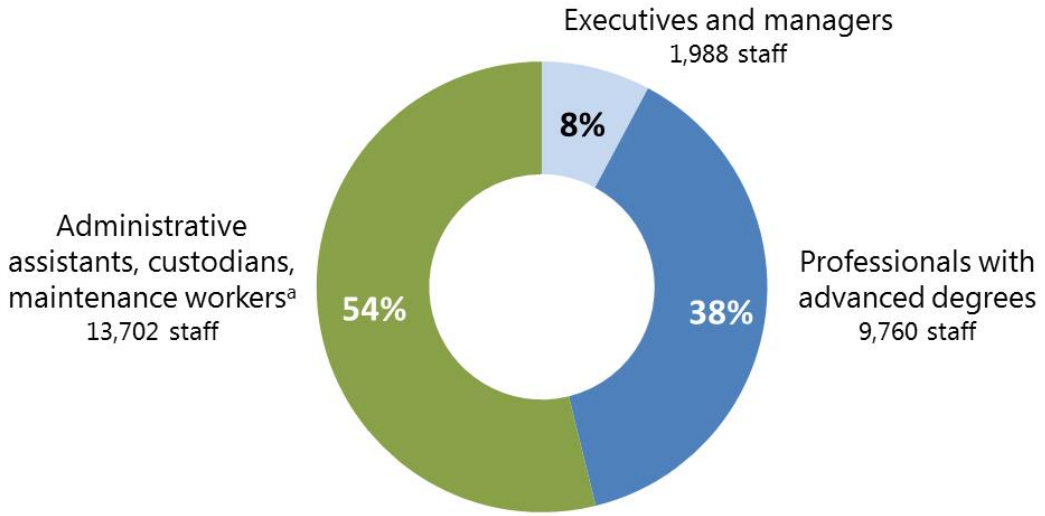
Support and non-instructional staff

NCES staffing data is categorized by occupation code rather than by support function and therefore cannot be divided into academic support, institutional support, student services, and operations and maintenance categories. Auxiliary staff are often included as support staff, but contract staff may not be included. See Appendix B for more information about NCES staffing categories.

Majority of support positions are administrative, custodial, or maintenance staff

Over half of support and non-instructional staff at Virginia institutions were administrative assistants, custodians, or maintenance staff (Figure 1-4). The second largest group included employees with advanced degrees, such as engineers, librarians, computer specialists, accountants, and human resource staff. Less than one-tenth of support staff were executives and managers.

FIGURE 1-4
Administrative, custodial, and maintenance staff comprise majority of support staff (2011)



Source: JLARC staff analysis of NCES data.
Note: 2011 NCES data is used because more recent data does not divide staff into hierarchical categories.
[a] Includes a broad range of technical/paraprofessional, clerical/secretarial, skilled crafts, and service/maintenance staff.

Staffing costs are majority of spending on support functions

Nearly two-thirds of spending on support functions in FY 2013 was for salaries, wages, and benefits. Personnel costs account for a majority of spending in institutional support (83 percent), student services (71 percent), and academic support (68 percent). In the category of facilities operations and maintenance, personnel costs make up only 33 percent of spending because much of the spending in this area is for utilities, debt service, equipment, and property rentals.

Changes over time were analyzed over the 20-year period from 1991 to 2010. The year 2000 was selected as the midpoint of the 20-year period. It is used, therefore, as an endpoint of a period beginning in 1991 and the start of a period ending in 2010.

Support staff make up majority of total staff, but numbers have declined over time

Support staff accounted for nearly two-thirds of staff at Virginia institutions in 2012 (25,628 of 40,040 total staff). However, support staffing at Virginia institutions has decreased over time. The numbers of support and non-instructional positions relative to students at Virginia institutions decreased 26 percent statewide over the past two decades. The decline was fairly consistent in each decade, with relative staffing levels decreasing 13 percent from 1991 to 2000 and an additional 15 percent from 2000 to 2010. The type of support staff that decreased the most were administrative, custodial, and maintenance staff (37 percent) during the 20-year period. In contrast, instructional staffing levels increased four percent statewide between 1991 and 2010.

2 Spending on Support Functions

SUMMARY Growth in spending for support functions accounted for 17 percent of total spending growth at Virginia's institutions between 1991 and 2010. Most of the growth for support functions occurred during the 1990s, and spending for support functions grew less than spending on instruction from 2000 to 2010. Growth in support spending also varied widely by institution. Currently, the majority of Virginia's institutions spend less on support than other similar institutions nationwide; VMI, William and Mary, and UVA, though, spend considerably more. Within total support spending, most Virginia institutions spend more than similar institutions nationwide on academic support, which institutions indicate facilitates better retention and graduation rates. Virginia institutions tend to employ more support staff—a major driver of support spending—than other institutions nationwide, though they are generally paid about the same or less. UVA, VMI, and Virginia Tech pay their top administrators more than similar institutions nationwide.

Prior studies of efficiency in higher education nationwide have found that spending and staffing levels for administrative and support functions have increased significantly over time. As shown in Chapter 1, spending on support functions across all Virginia institutions represents a modest portion of total spending, and the number of staff, although substantial, has actually decreased over time. For this study, spending and staffing levels at each of Virginia's public four-year higher education institutions were further examined to determine if they are high relative to other institutions in the same Carnegie group nationwide. Spending and staffing data were adjusted or assessed in a variety of ways to account for differences in institution size and other factors, such as student-faculty ratios. In most cases, spending or staffing is reported on a per student basis to control for the size of the institution. Where possible, this analysis was performed for the major support functions of academic support, institutional support, student services, and facilities operations and maintenance.

Carnegie group

The Carnegie Classification of Institutions of Higher Education classifies schools as doctorate-granting universities, master's colleges and universities, or baccalaureate colleges, based on the degrees they award. Within those categories, institutions are further classified based on size and research intensity. Carnegie group is also referred to as "similar institutions" for the purpose of this chapter.

Spending for support functions has increased

Spending on support functions across all Virginia institutions increased by 28 percent over the 20-year period from 1991 to 2010, when adjusted for enrollment and inflation, which is more than spending growth for instruction (23 percent). Most of the growth for support spending occurred in the first decade and appears to be slowing. Furthermore, growth for support spending (six percent) was less than growth for instructional spending (11 percent) between 2000 and 2010. Overall, growth of support spending over the 20-year period (1991 to 2010) accounted for 17 percent of spending growth across all functions.

Support functions have not been a major driver of recent increases in the cost of higher education. The 2013 JLARC report on academic spending by Virginia institutions found that spending on instruction did not increase substantially, when controlled for the large increase in enrollment. Spending on support functions grew only slightly more than instructional spending between 1991 and 2010, and grew more slowly than instructional spending in the last decade. Growth in support spending also varied widely by institution, and some institutions experienced declines in spending, when controlled for enrollment growth. Still, spending on support functions is growing at a rate faster than inflation and enrollment and therefore contributes to rising student costs in Virginia. (Several ways in which Virginia institutions may be able to curtail future increases in spending on support functions are identified in Chapters 3 through 5.)

Majority of Virginia institutions spend less on support than similar institutions

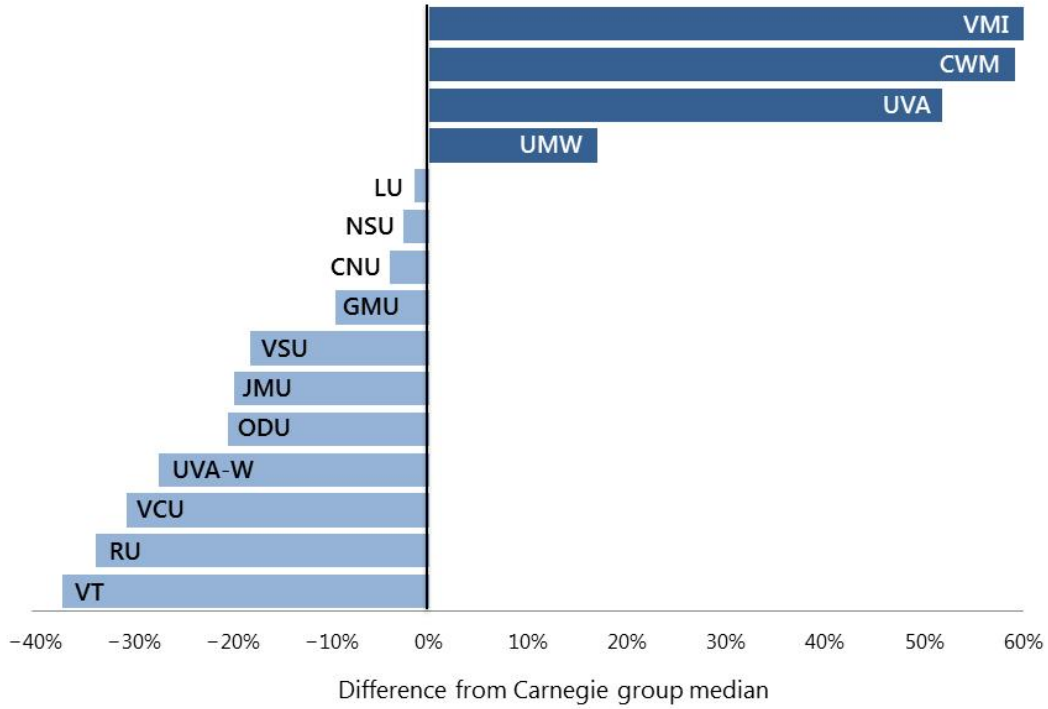
Spending per student on support functions varies greatly across Virginia institutions. The state's research institutions spent more than $9,000 per full-time equivalent (FTE) student for support functions in FY 2013, on average. Baccalaureate and master's institutions spent about $6,900 per FTE student, on average. Spending per FTE student also varies widely for sub-functions. Spending on academic support ranged from $912 at Virginia State, a small master's university, to $6,325 at UVA, a research university. (See Appendix C for detailed information on support spending by each Virginia institution.) Despite the wide range of spending across Virginia institutions, the majority spend less than similar schools nationwide.

Eleven Virginia institutions spend less on support functions than similar institutions nationwide, but four spend more

Spending per FTE student on support functions by 11 Virginia institutions was below the median of their public Carnegie group in FY 2012. All Virginia institutions spent less than the median of their private Carnegie group. Six institutions (JMU, VCU, ODU, Radford, Virginia Tech, and Virginia State) are among the lowest spenders in their public Carnegie group, spending less than 75 percent of other similar public institutions. Some institutions report spending less because of a strategic emphasis on providing support functions efficiently, so that as much funding as possible can be directed to the core academic mission. Other institutions spend less because they have limited resources.

In contrast, Mary Washington, William and Mary, UVA, and VMI were above the median in their public Carnegie group in terms of support spending (Figure 2-1), and three of those were among the highest spenders. Spending at UVA, VMI, and William and Mary was 50 percent greater than the median spending level of their Carnegie group. UVA and VMI spent more than 75 percent of all other institutions

FIGURE 2-1
Mary Washington, William and Mary, UVA, and VMI spent more on support functions than their public Carnegie group median (FY 2012)



Source: JLARC staff analysis of 2012 NCES data.
Note: Excludes institutions with the lowest five percent and highest five percent of support spending per FTE student in order to eliminate outliers. Figures may not match FY 2013 spending provided by individual institutions due to differences between the FY 2013 institutional financial data and FY 2012 NCES data.

in their Carnegie group, while William and Mary spent more than 90 percent of similar institutions.

There is no indication that the size of Virginia institutions relative to the other institutions in their public Carnegie groups influences their ability or inability to achieve economies of scale. Analysis was performed to compare support spending of each Virginia institution with spending by the 15 institutions closest to its student enrollment within its Carnegie group. The same 11 institutions spent less than their size-adjusted cohort, and the same four institutions still spent more. Mary Washington, though, spends more per student than the median of its Carnegie group but enrolls only half the number of students that the other institutions in its Carnegie group enroll, on average.

Institutions cite several factors that lead to higher support spending

The four Virginia institutions that spent more than similar public institutions nationwide cite several factors, such as keeping up with private research institutions, low student-faculty ratios, and high levels of instructional spending, that lead to

higher spending for support functions when measured on a per student basis. All four institutions spend less than their private Carnegie group median and therefore could be perceived as still being more efficient than the private institutions within their Carnegie group. However, the other factors only partially explain higher spending for certain institutions.

When accounting for the number of faculty, William and Mary and Mary Washington were the only two out of the four institutions to spend less than their public Carnegie median. This suggests that the number of faculty at these institutions may be a greater driver of support costs than the number of students. In contrast, both UVA and VMI spend more than their public Carnegie median, when accounting for the number of faculty.

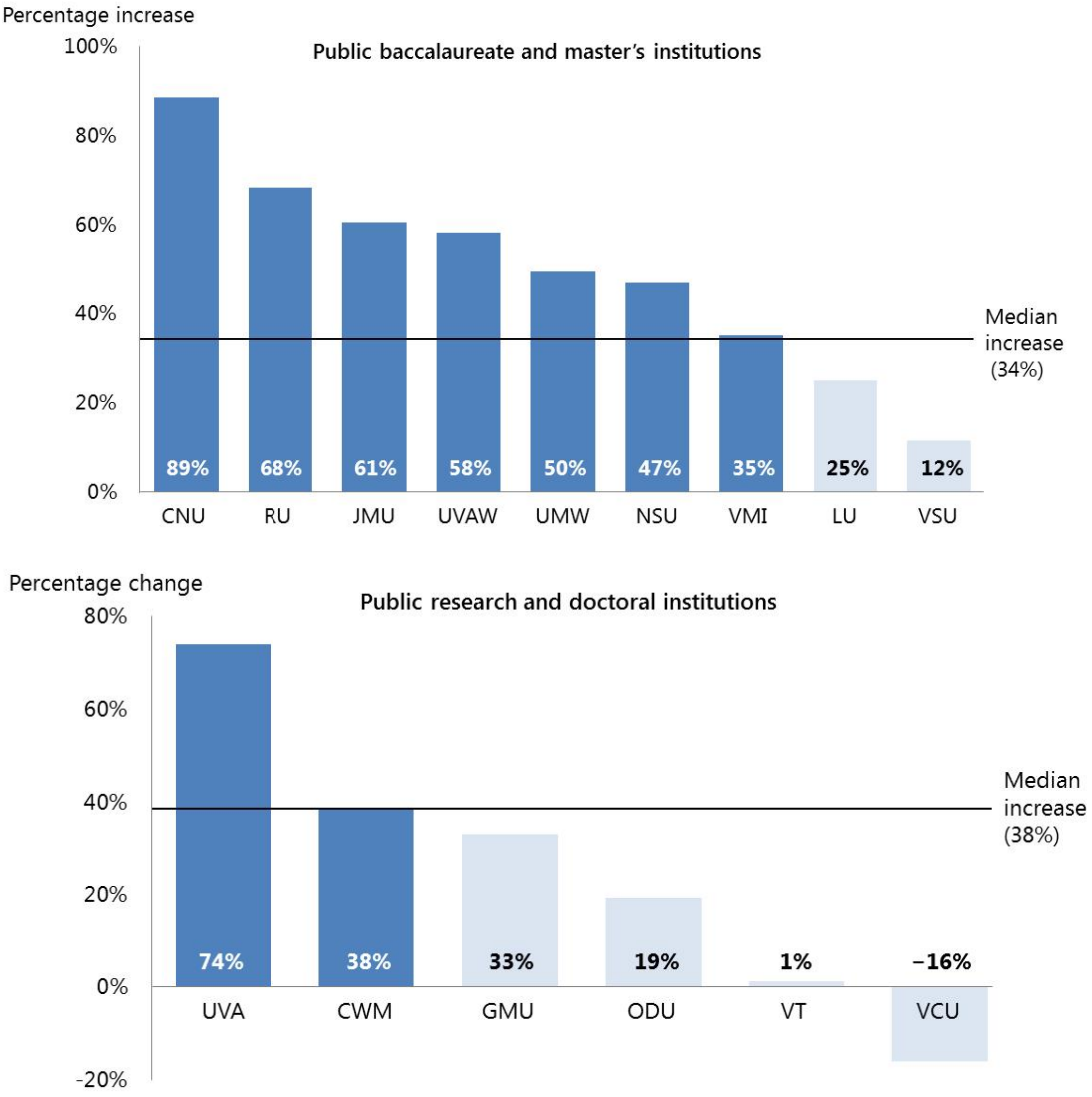
VMI is the only institution of the four for which the ratio of spending for support relative to instruction was lower than the median ratio of its public Carnegie group. Even though VMI spends more than similar institutions on a dollar basis, it does not allocate a greater proportion of spending to support functions. In contrast, UVA, Mary Washington, and William and Mary allocate a greater proportion of their total spending to support than similar institutions, in addition to a greater dollar amount, which may suggest that the cost efficiency of their support functions could still be improved.

VMI staff also indicated that the institution's military structure and high percentage of STEM majors results in higher spending. All students, also known as cadets, are required to live on campus and participate in scheduled military and physical training activities at approximately the same time. Both factors increase demand for some support services, such as academic support services, facilities maintenance and custodial services, laundry, and dining services. Required activities also place additional demands on staff. Fifty percent of VMI cadets major in STEM disciplines, which typically require additional support due to laboratories and demand for IT resources.

Nine institutions increased support spending at a faster rate than similar institutions

Although the majority spend less currently, nine Virginia institutions increased spending on support functions faster than their public Carnegie group median from 1991 to 2010, after adjusting for enrollment growth and inflation. Most were baccalaureate and master's institutions, where growth may have occurred to better position the institution to attract students nationwide (Figure 2-2). Across institutions, staff cited several reasons for the increase in support costs: a demand for more intensive student services and academic support, increased campus safety and security, and greater fundraising efforts. Despite faster growth, five of these institutions (Christopher Newport, Norfolk State, Radford, JMU, and UVA-Wise) still spent below their Carnegie group median in FY 2012.

FIGURE 2-2
Nine institutions increased support spending faster than the median of similar institutions; most are baccalaureate and master's institutions (1991-2010)



Source: JLARC staff analysis of Delta Cost Project data.
Note: Figures are adjusted for inflation and enrollment changes. Median increase is for the broad Carnegie group. Spending on operations and maintenance is excluded.

Three Virginia institutions experienced substantial growth during the 20-year time period: Christopher Newport, Radford, and UVA. For Radford and UVA, spending growth was greater during the earlier portion of this time period (1991 to 2000), but growth for Christopher Newport was greater during the later portion (2000 to 2010). For all three schools, spending growth was greatest for institutional support.

Three of Virginia's research institutions (ODU, VCU, and Virginia Tech) actually experienced decreases in support spending relative to enrollment between 2000 and 2010. VCU staff explained that costs decreased on a per student basis during the

time period because growth in enrollment outpaced growth in support spending. ODU and Virginia Tech staff pointed to funding constraints to explain the need to constrain or reduce spending.

Virginia institutions emphasize academic support

Academic support is the support function for which Virginia institutions spent the most and were likely to spend more than similar institutions nationwide. Institutions devote more financial resources to academic support to help improve student outcomes, such as retention and graduation. Virginia institutions generally spend less than similar institutions nationwide on institutional support, student services, and operations and maintenance.

Majority of Virginia institutions spend more on academic support than similar institutions nationwide

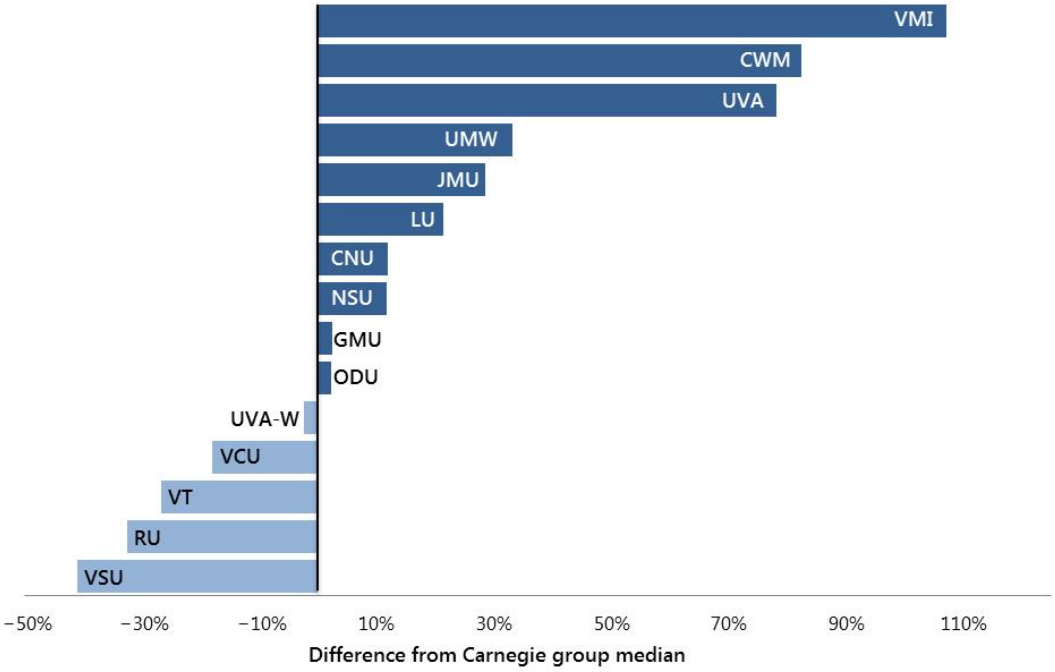
Academic support services are generally those most related to the core mission of higher education and include services such as academic administration, course and curriculum development, and libraries. Ten Virginia institutions spend more on academic support functions than the median of their public Carnegie group (Figure 2-3). William and Mary and VMI, the highest of the group, both spend more than 90 percent of the other institutions in their public Carnegie group, while UVA, JMU, and Mary Washington spend more than 75 percent of the institutions in their public Carnegie group. JMU, VMI, William and Mary, and Mary Washington also spend more on academic support than the median of their private Carnegie group.

Academic support services, according to staff at Virginia institutions, are important for promoting student retention and graduation. All 10 institutions with academic support spending above the median of their public Carnegie group also retained a higher percentage of students than their Carnegie group average. Eight of the 10 Virginia institutions also had graduation rates above their group average. The five Virginia institutions with the highest academic support spending relative to their public Carnegie group also had higher retention and graduation rates than similar private institutions.

Only ODU and Norfolk State spent more on academic support but have below average graduation rates. Staff at both institutions cited the challenges of maintaining and increasing graduation rates while serving more first-generation college students and students with lower socio-economic status, who may not be as prepared for college, than institutions such as UVA and William and Mary.

Several institutions indicated that when reducing spending they tend to shield academic support over other support functions. Further, when they reduce spending in one area of academic support, the savings are often reinvested in another area of academic support. For example, an institution might reduce spending on electronic journal subscriptions and then reinvest the savings for more study space in the library.

FIGURE 2-3
Ten Virginia institutions spend more on academic support than their Carnegie group median (FY 2012)



Source: JLARC staff analysis of 2012 NCES data.
Note: Excludes institutions with the lowest five percent and highest five percent of support spending per FTE student in order to eliminate outliers. Figures may not match FY 2013 spending provided by individual institutions due to differences between the FY 2013 institutional financial data and FY 2012 NCES data.

Seven Virginia institutions spend more on institutional support than similar institutions nationwide, but spending has declined

Institutional support, which comprises executive management, general administration, university advancement, and public safety, represents the second largest category of support spending. Compared to academic support services, institutional support is less directly related to classroom instruction.

Seven Virginia institutions spent more on institutional support than their public Carnegie group median, but most did not spend substantially more. William and Mary was the only institution that spent more than 75 percent of similar institutions in this category, with institutional spending levels that were approximately $1,000 per FTE student above the median. No Virginia institution spent more than the median of their private Carnegie group.

Some institutions have targeted this area for recent spending cuts, because cuts to this area are less likely to impact the core academic mission. Spending for executive management (–1.5 percent), fiscal operations (–10.8 percent) and logistical services (–21.4 percent) all declined between fiscal years 2008 and 2013 (Table 2-2).

TABLE 2-2
Institutional support spending decreased slightly across all institutions from 2008 to 2013

Spending category	Total expenditure 2013 ($M)	Change in spending per FTE student, inflation adjusted 2008–2013
Total institutional support	**$432.0**	**–0.8%**
General administrative services	124.8	6.7
Public relations and development	101.5	3.6
Executive management	91.7	–1.5
Safety and security	50.4	8.5
Fiscal operations	47.1	–10.8
Logistical services	35.6	–21.4

Source: JLARC staff analysis of 2008 and 2013 spending data provided by Virginia institutions.
Note: Change in spending is adjusted for enrollment growth and inflation. Radford spending is not included in the change in spending calculation because 2008 spending data was not available for the institution.

Institution staff interviewed for this study indicated that their schools have not cut spending, and in many cases have increased spending, in two key areas of institutional support: campus security and fundraising. Institutions have increased spending on campus safety and security in response to high-profile safety incidents on campuses and because of federal requirements, such as those established in the Clery Act, that require campuses to compile and publish data on campus crimes. Spending on fundraising, which is part of public relations and development, often yields a return and therefore many institutions have increased fundraising spending. Institutions such as UVA, William and Mary, and Mary Washington were able to demonstrate substantial returns on investment, spending only 10 to 20 cents for every dollar raised.

Majority of Virginia institutions spend less on student services and facilities operations and maintenance than similar institutions nationwide

All but three Virginia institutions spend less on student services (student admissions and records, counseling, and student health), and 10 spend less on facilities operations and maintenance than their Carnegie group median, according to FY 2012 data. Three institutions (William and Mary, UVA, and VMI) spend more per student in both areas. VMI again cited its unique military mission and additional facilities requirements to explain its higher level of spending. UVA and William and Mary again cited the need to compete with private institutions, explaining that students demand extensive student support services such as counseling and career guidance. UVA spent only 43 percent as much on student services as the median institution in its private Carnegie group, while William and Mary spent 63 percent. UVA and William and Mary indicated that their

higher operations and maintenance costs were because of their higher proportion of older and historic facilities, which are more costly to maintain.

Virginia institutions have more support staff but pay lower salaries

Spending for staff is an important driver of support costs at Virginia's public four-year institutions, as noted in Chapter 1. Although the majority of Virginia institutions spend less for support, they tend to employ more people than comparable institutions nationwide. However, the higher employment numbers have not led to higher spending for support functions. (See Appendix C for detailed information on support staffing by sub-category and functional area by institution.)

Majority of Virginia institutions have more support staff than similar institutions nationwide

FTE support staff

A full-time equivalent (FTE) support staff member is equal to one full-time staff member or three part-time staff.

Eleven of Virginia's 15 public four-year institutions employed more FTE support staff per FTE student than the median of their public Carnegie group in 2012. Two of the institutions were research and doctoral institutions, and nine were master's and baccalaureate institutions. The four institutions with fewer support staff than similar institutions nationwide were ODU, VCU, George Mason, and Virginia Tech.

Of the 11 Virginia institutions that employed more support staff than the median for their public Carnegie group, eight employed more support staff than 75 percent of their public Carnegie group, including UVA, William and Mary, and VMI. Both William and Mary and VMI also employed more staff per FTE student than 75 percent of their private Carnegie group. This suggests that the majority of Virginia institutions may have opportunities to reduce staff and improve their efficiency. Options for increasing efficiency and potentially reducing staff include reviewing and making adjustments to organizational structures (Chapter 3) and increasing automation (Chapter 5).

This analysis may place very small institutions at a disadvantage relative to larger institutions within their Carnegie group because a minimum number of support staff must still be employed at small institutions. However, the results are similar when each Virginia institution is compared with the 15 schools closest to its size within its Carnegie group, with one exception. UVA-Wise has slightly fewer staff than the median of the 15 institutions closest to its size.

Although most Virginia institutions had more support staff than their public Carnegie group, not all categories of staff were higher. Nine Virginia institutions had fewer executives and managers—the staff who typically earn the most—than the median for their public Carnegie group in 2011. The largest portion of staff at Virginia institutions are administrative assistants, custodians, and maintenance workers, with all but

TABLE 2-3
Institutional support staff are a large portion of total support staff at several institutions (2013)

Institution	Number of institutional support staff per 100 FTE students	Percentage of total support staff
VSU	2.5	47%
VT	3.0	46
NSU	3.4	44
LU	3.0	44
RU	2.3	43
UMW	3.1	42
CWM	3.3	38
UVA-W	2.8	36
CNU	2.7	35
VCU	2.8	35
GMU	1.8	34
ODU	2.0	30
JMU	2.0	29
UVA	3.6	27
VMI	3.1	24

Source: JLARC staff analysis of data provided by staff at Virginia institutions, 2013.
Note: Staffing numbers reflect FTE staff. UVA's staffing levels include staff who provide support to the medical center and UVA-Wise, which inflates their staffing numbers.

two Virginia institutions having higher levels of these staff than their public Carnegie group. These staff positions generally pay less than positions that require higher qualifications. This may explain, at least in part, why Virginia institutions have higher staffing levels but still spend less than similar institutions.

Institutional support staff is the largest category of support staff across Virginia institutions in terms of numbers of employees. Ten institutions have more institutional support staff relative to students than other types of support staff (Table 2-3), and institutions with the highest proportions include Virginia State, Virginia Tech, Norfolk State, Longwood, Radford, and Mary Washington. Several research institutions, including VCU, ODU, and UVA, have higher proportions of academic support staff than other categories, while JMU and VMI have higher proportions of operations and maintenance staff.

Support staff salaries tend to be near or below those at similar institutions nationwide

CUPA-HR base salary comparisons

CUPA-HR data were used to compare base salaries of support positions at Virginia institutions to those at similar institutions nationwide. The survey provides benchmarks for 480 support positions, but does not include all positions at each institution.

The average salaries of upper- and mid-level support staff at most Virginia institutions tend to be near or below average salaries at similar institutions nationwide, according to a comparison of base salaries reported in College and University Professional Association for Human Resources (CUPA-HR) surveys for 2012-2013. This finding suggests that, in most cases, Virginia institutions are not overpaying support staff relative to other institutions. These comparisons included both top-level administrators, such as college or university presidents, and mid-level professional staff, such as human resource specialists. (Appendix D lists all the positions included in this analysis.)

Although some institutions pay support staff more than others within the same Carnegie group, the differences in compensation are not adjusted for differences in the cost of living. The comparison groups are also broad, encompassing all doctoral, master's, or baccalaureate institutions, depending on the Carnegie group to which each Virginia institution belongs. Institutions often compete for staff with a smaller group of institutions, which may offer higher salaries than the salaries paid by the broad groups used for this analysis.

Majority of Virginia institutions pay top administrators salaries near or below similar institutions nationwide

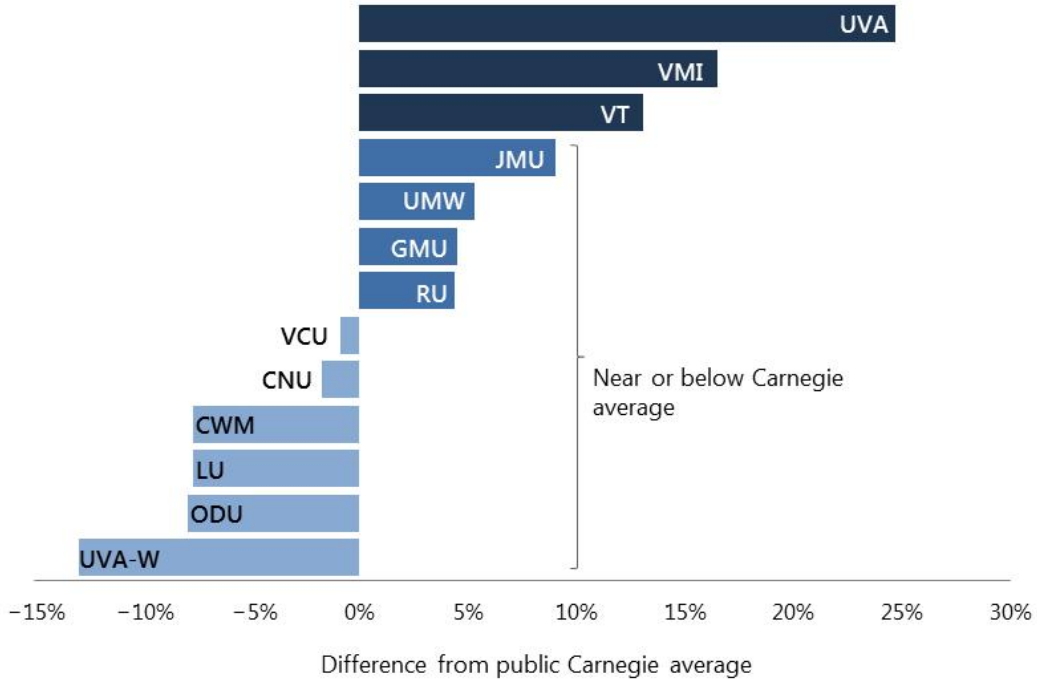
Top administrators

Top administrators include a variety of positions, such as presidents, vice presidents, provosts, deans, and chief information and financial officers.

Ten Virginia institutions paid their top administrators salaries that, on average, were comparable (less than 10 percent above) or below what was paid by public institutions nationwide within the same broad Carnegie group (Figure 2-4). More than half of the top administrators at these 10 institutions were paid average salaries that were comparable to or below average salaries for similar positions at public institutions in the same Carnegie group. More than half of the top administrators at six Virginia institutions (ODU, UVA-W, VCU, Christopher Newport, Longwood, and William and Mary) were paid less than what is paid at similar institutions nationwide.

When compared to private institutions within the same broad Carnegie group, Virginia institutions tended to pay staff in top administrator positions base salaries that were less than or within 10 percent of the average base salaries nationwide. The only exceptions were UVA and JMU, where more than half of top administrative positions were paid base salaries that were at least 10 percent higher than the salaries paid at private institutions within the same Carnegie group.

FIGURE 2-4
Majority of Virginia institutions paid top administrators salaries near or below salaries at similar public institutions nationwide (2012-13)

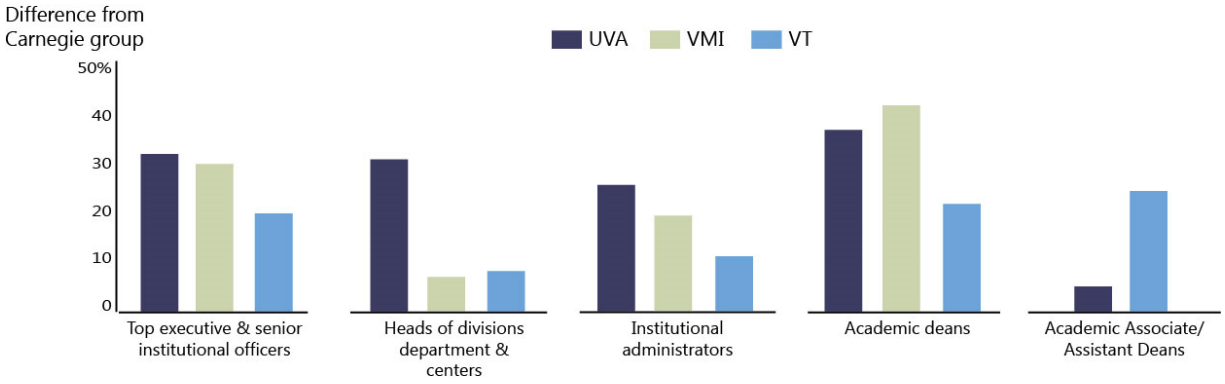


Source: CUPA-HR 2012-2013 Survey of Administrators in Higher Education.
Note: Excludes athletics and research staff. NSU did not participate in the 2012-13 CUPA-HR survey and are not included in the figure. VSU participated in the survey but was unable to provide the data to JLARC staff due to technical issues.

Three Virginia institutions pay top administrators more than similar public institutions nationwide

In contrast with the general trend in Virginia, more than half of the top administrator positions at VMI, UVA, and Virginia Tech were paid salaries that were more than 10 percent higher than those paid at public institutions within the same broad Carnegie group. The base salaries of the top executives, senior institutional officers (e.g., chief budget officers and chief student admissions officers), and academic and associate deans at these institutions appear to be the primary drivers behind the higher-than-average salaries across all top administrator positions (Figure 2-5).

FIGURE 2-5
Average base salaries of top administrator positions at UVA, VMI, and Virginia Tech tend to be higher than public Carnegie average salaries (2012-13)



Source: CUPA-HR 2012-2013 Survey of Administrators in Higher Education.
Note: Excludes athletics and research professionals. VMI did not report employing any academic associate/assistant deans.

Average salaries for mid-level support staff at most Virginia institutions are near or below average salaries at similar institutions nationwide

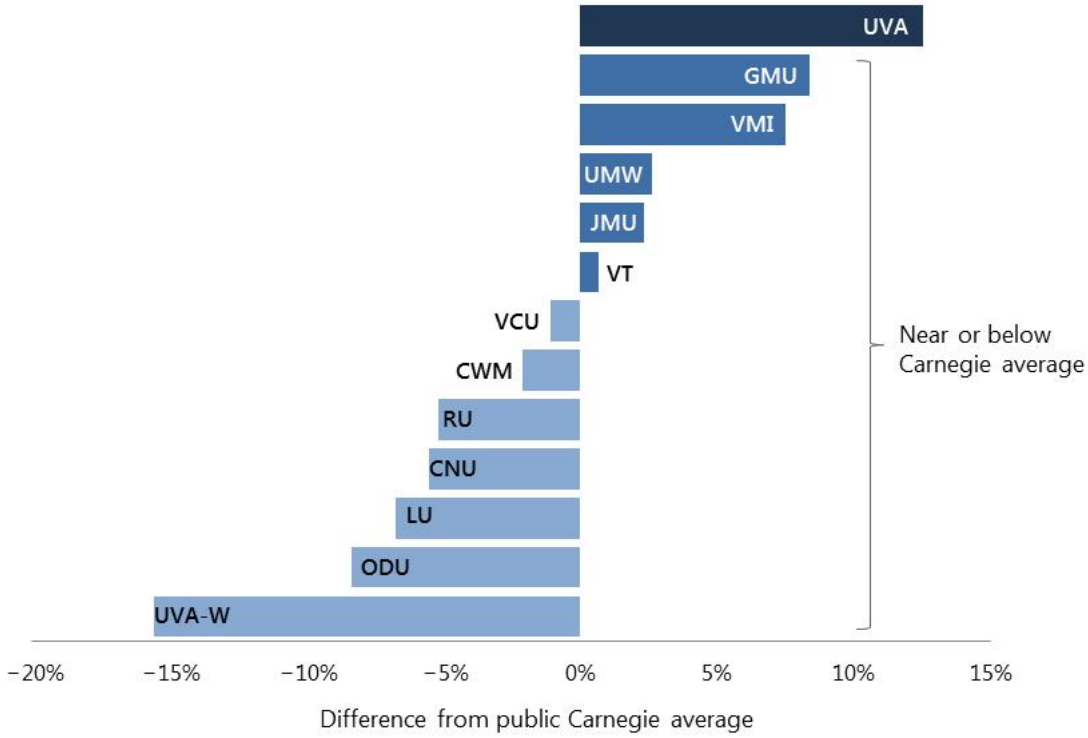
Twelve out of the 13 institutions participating in the CUPA-HR survey paid their mid-level staff salaries that were near or below salaries at public institutions within the same broad Carnegie group, on average. UVA is the only institution where the average difference in salaries between its mid-level support staff positions and salaries of similar positions nationwide was greater than 10 percent (Figure 2-6).

Virginia institutions tended to pay base salaries to mid-level support staff that were comparable to or below the base salaries paid to staff in similar positions at private institutions nationwide. More than 60 percent of mid-level support positions at all Virginia institutions were paid salaries that were comparable to or below average salaries for similar positions at private institutions in the same broad Carnegie group.

Mid-level support staff

Mid-level support staff include a variety of positions, such as accountants, alumni relations officers, assistant registrars, human resource specialists, IT network administrators, maintenance managers, and procurement specialists.

FIGURE 2-6
Most Virginia institutions paid mid-level support staff salaries near or below salaries at similar public institutions nationwide (2012-13)



Source: CUPA-HR 2012-2013 Survey of Professionals in Higher Education.
Note: Excludes athletics and research staff. NSU did not participate in the 2012-13 CUPA-HR survey and are not included in the figure. VSU participated in the survey but was unable to provide the data to JLARC staff due to technical issues.

3 Use of Supervisors in Support Functions

SUMMARY Virginia institutions appear to have a high number of supervisors across support functions. At Virginia institutions, the ratio of supervisors to employees (or "direct reports") is higher on average than the ratio set at several institutions around the country. More than half of supervisors at Virginia's higher education institutions supervise three or fewer employees; 24 percent supervise only one. Too many supervisory positions can adversely affect the efficiency and effectiveness of a function or department and result in higher-than-necessary personnel costs. Narrow spans of control—too few employees per supervisor—are not unique to Virginia and have been found at other higher education institutions nationwide. Several institutions around the country have increased their spans of control to improve the efficiency and productivity of their support functions. Approaches they have used could serve as a guide for Virginia institutions, and schools could potentially save between 0.5 and one percent of total operating expenditures. These savings in Virginia would equate to several hundred dollars per student per year.

In addition to examining spending and staffing levels, higher education institutions outside Virginia have analyzed the number of direct reports per supervisor ("span of control") to assess whether departments could be structured more efficiently to increase productivity and reduce costs. Too few employees per supervisor ("narrow span") often indicates that there are too many staff with supervisory responsibilities, which can adversely affect the efficiency and productivity of an organization. Too many supervisors often results in unnecessary layers of management between front-line employees and the top executive, which may decrease the timeliness of decisions. This can also result in an inefficient allocation of responsibilities, with too much focus on internal reporting through the supervisory chain of command rather than high-value work, such as customer service and student admissions counseling. Costs tend to be higher than necessary when organizations have too many supervisors because they tend to be paid more than non-supervisors.

Span of control

Span of control refers to the number of direct reports per supervisor. For example, if an individual supervises six employees, his or her span of control would be six.

Having too many supervisory positions can detract from the productivity of an organization. Front-line employees may spend less time focusing on their primary and productive work and more time reporting to the various layers of management. Employees are more likely to learn how to carry out their responsibilities efficiently and effectively when they have more time to focus on them.

Institutions may not be using supervisory resources most efficiently or effectively

The spans of control at Virginia institutions appear narrower than benchmarks for several higher education institutions that have undergone a spans analysis. Facing growing financial challenges, such as declining state support and operating losses, UNC Chapel Hill, UC Berkeley, and Cornell University have hired consultants to analyze the spans of control in their support functions. After implementing organizational changes and reforming their human resource policies, these institutions found that increasing the number of direct reports per supervisor in support functions has led to improved efficiency and productivity as well as some ongoing cost savings. Two Virginia institutions, UVA and William and Mary, have recently analyzed their spans of control and started looking into opportunities to increase the number of direct reports per supervisor in their support functions.

Span of control analysis for Virginia institutions

JLARC staff collected human resource data from each institution to perform a spans of control analysis.

Due to data limitations at some institutions, the results of JLARC's analysis should be viewed as an indicator of opportunities, rather than a definitive account of institution-wide spans of control.

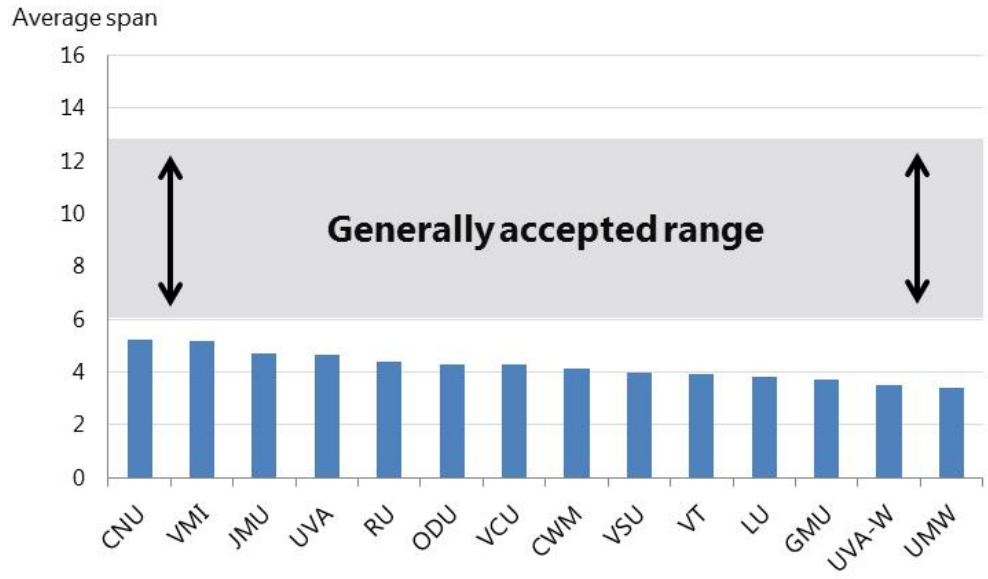
Average spans of control at all Virginia institutions are narrower than benchmarks adopted by other higher education institutions

All Virginia institutions have average spans of control of less than six direct reports per supervisor in their support functions, which is narrower than the benchmarks that certain higher education institutions outside Virginia have generally accepted to be both efficient and effective (Figure 3-1). This finding suggests that institutions may have opportunities to reallocate staff to non-supervisory positions by reevaluating organizational structures and consolidating departments. Appropriate spans of control vary based on a number of factors, including complexity of tasks, geographic distribution of direct reports, workload, and qualifications of the supervisor. The benchmarks adopted by other higher education institutions range from six to seven direct reports per supervisor for complex functions (e.g., human resource, information technology, and procurement services) to 11 to 13 direct reports per supervisor for task-based functions (e.g., maintenance, grounds keeping, and custodial services).

Across institutions, there does not appear to be a particular type of department that causes the average span of control to be narrow. Wider spans are more prevalent in facilities management and maintenance, housekeeping, and dining services, because these are routine and task-based functions. Average spans of control tend to be wider at institutions that do not outsource functions, such as custodial and dining services, because each supervisor in these functions tends to have many direct reports.

The size of an institution does not appear to determine whether the institution has narrow spans of control. George Mason and UVA-Wise have relatively narrow spans of control but are very different in their size (25,061 and 1,884 FTE students respectively in 2012). The three institutions with the widest spans of control—the most direct reports per supervisor, on average—also vary in size (5,088 FTE students at Christopher Newport, 1,664 FTE students at VMI, and 18,980 FTE students at JMU in 2012).

FIGURE 3-1
Spans of control at Virginia institutions are lower than generally accepted range adopted by certain higher education institutions



Source: JLARC staff analysis of institutions' human resource records as of March 1, 2013, or the most recent date available.
Note: Analysis includes all full- and part-time staff except those in the instructional and research areas (those areas that report to the institution's provost or provost-equivalent position) and student workers. The data also excludes hospital employees (UVA), Southwest Virginia Higher Education Center employees (UVA), and cooperative extension employees (VT and VSU). NSU is excluded from the analysis due to human resource data limitations. VCU data includes staff in its Finance and Administration Department, but not all support functions, due to human resource data limitations.

Majority of supervisors have three or fewer direct reports

A driver of narrow spans of control at Virginia institutions appears to be the number of one-to-one reporting relationships across support functions. (See Figure 3-2 for an example of a department at a Virginia institution with multiple one-to-one relationships.) More than half of supervisors in support functions across all Virginia institutions have three or fewer direct reports and nearly one-quarter supervise only one employee (Figure 3-3).

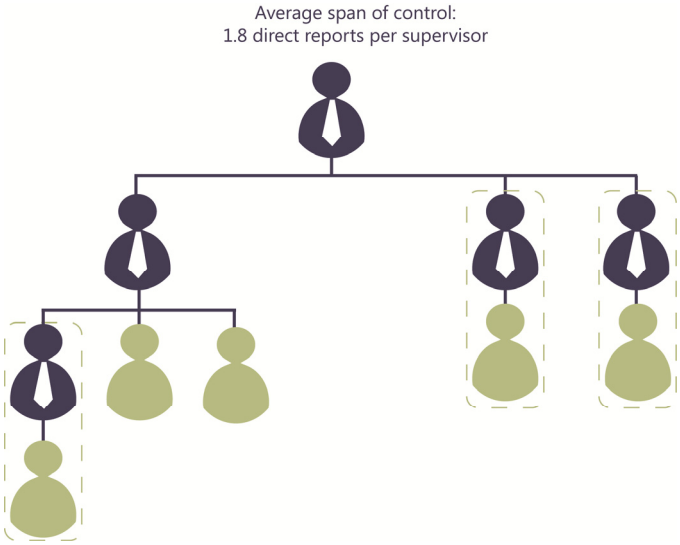
At eight institutions, at least one-quarter of supervisors supervise only one employee (Figure 3-4). These institutions range in size from the smallest (UVA-Wise) to one of the largest Virginia institutions (George Mason), in terms of both the number of students and staff, suggesting that the relatively high frequency of one-to-one reporting relationships is not an inherent result of the size of an institution.

Supervisor

A supervisor is an individual who is responsible for tasks such as performance evaluations and leave approval for one or more employees. Supervisors may perform other non-supervisory tasks for the department to which he or she is assigned.

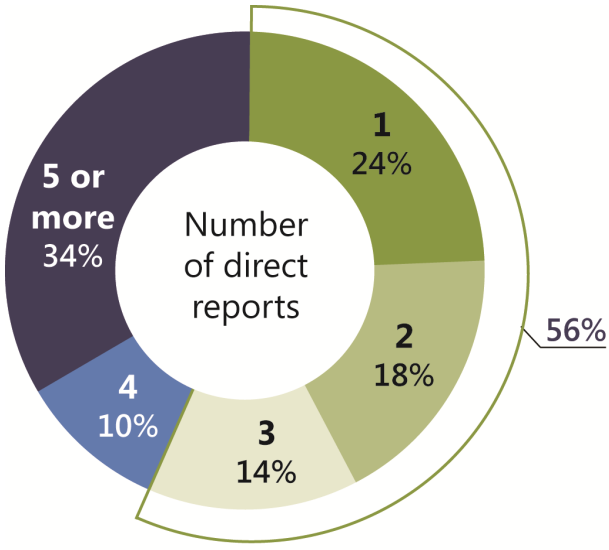
This definition is consistent with the definitions used for the analyses of spans of control at institutions outside Virginia.

FIGURE 3-2
Example department at a Virginia institution with multiple supervisors who oversee only one employee



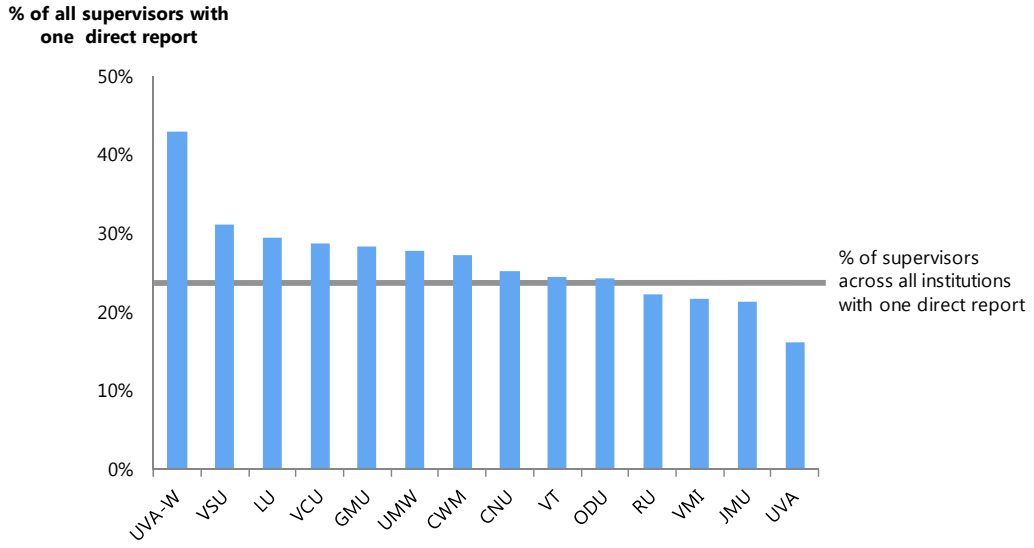
Source: JLARC staff analysis of institutions' human resource data and organizational charts.

FIGURE 3-3
Majority of supervisors in support functions at Virginia institutions supervise three or fewer direct reports



Source: JLARC staff analysis of institutions' human resource records as of March 1, 2013, or most recent date available.
Note: Analysis includes all full- and part-time staff except those in instructional and research areas (those areas that report to the institution's provost or provost-equivalent position) and student workers. The data also excludes hospital employees (UVA), Southwest Virginia Higher Education Center employees (UVA), and cooperative extension employees (VT and VSU). NSU is excluded from the analysis due to human resource data limitations. VCU data only includes staff in its Finance and Administration Department, but not all support functions, due to data limitations.

FIGURE 3-4
More than 20 percent of supervisors in support functions at most institutions only supervise one employee



Source: JLARC staff analysis of institutions' human resource records as of March 1, 2013, or the most recent date available.
Note: Analysis includes all full- and part-time staff except those in instructional and research areas (those areas that report to the institution's provost or provost-equivalent position) and student workers. The data also excludes hospital employees (UVA), Southwest Virginia Higher Education Center employees (UVA), and cooperative extension employees (VT and VSU). NSU is excluded from the analysis due to human resource data limitations. VCU data only includes staff in its Finance and Administration Department, but not all support functions, due to data limitations.

In interviews, staff from UNC Chapel Hill, UC Berkeley, and Cornell University noted that they identified many of these relationships during reviews of their organizational structure and rarely found that a one-to-one supervisory relationship was necessary or efficient. These institutions have consolidated departments, transferred supervisors to other departments, or eliminated supervisory positions to reduce the frequency of one-to-one supervisory relationships.

Narrow spans of control may be necessary and appropriate in some cases, but it is rarely necessary to have so many employees supervising three or fewer direct reports in large organizations, such as many higher education institutions. As mentioned, where tasks are complex and pose a high risk to the organization as a whole, or where supervisors or subordinates are inadequately qualified, narrow spans may be necessary—sometimes even as few as two or three direct reports, according to staff at institutions that have reviewed their spans of control (Table 3-1). Narrow spans of control may also be necessary when there are too few staff to reach the benchmarks and when departments cannot be consolidated due to an unavoidable requirement to separate responsibilities across departments, such as in auditing and financial reporting functions. Wider spans of control are appropriate when supervisors have adequate knowledge and experience and where tasks are routine and low-risk.

TABLE 3-1
Many factors will affect the appropriate span of control for a supervisor

Factor	Appropriate span per supervisor	
	Narrower (6-7 direct reports)	*Wider (11-13 direct reports)*
Nature of day-to-day tasks	Complex, varying, high risk	Simple, standardized, low risk
Degree of public scrutiny	High	Low
Qualifications and experience of supervisors and subordinates	Less than adequate	Adequate
Geographic dispersion of staff	High	Low

Source: JLARC staff analysis of the research literature on spans of control and reviews of spans of control at higher education institutions nationwide.

Institutions report several reasons for narrow spans of control

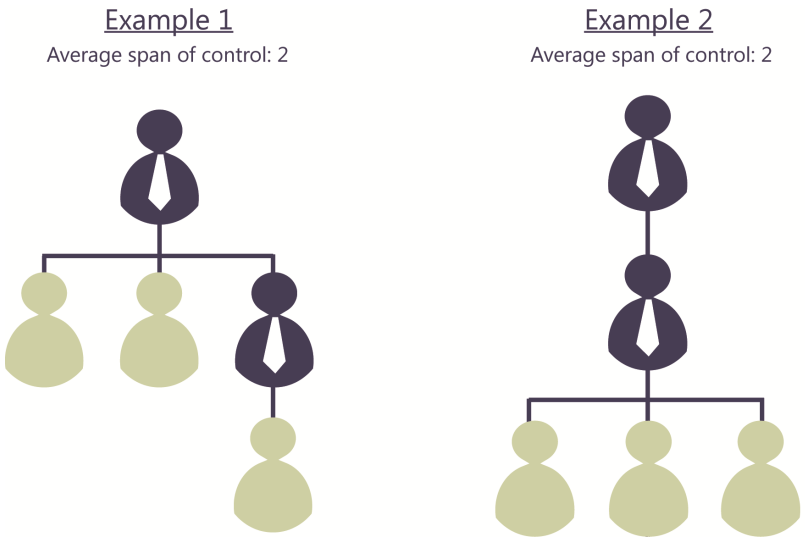
Human resource staff at Virginia institutions cited a number of different reasons for their narrow spans of control, including the complexity of work, the use of working supervisors, and compensation pressures. Outside Virginia, human resource staff reported that, although they were aware of other reasons, compensation pressure was the primary reason for having too many supervisors.

Institutions often create small departments to address complex work

Institutions have many complex and varying responsibilities (e.g., auditing, fiscal analysis, human resources, security, dining), and most appear to have subdivided many of these responsibilities into small departments or offices. When responsibilities are divided in such a way, spans of control are likely to be lower, and individual departments are likely to have very few employees. Some work needs to be separated and subdivided (e.g., financial reporting and auditing), but organizations can consider consolidating functions under one supervisor where responsibilities do not need to be separated.

Small departments with multiple supervisors were found across Virginia institutions (Figure 3-5). When asked about the structure of these departments, staff at Virginia institutions reported that in some cases multiple supervisors are needed because the work performed by the department is complex. Staff noted that the additional supervisor in Example 1 may be necessary because of the area's specialization or because certain aspects of the area are not automated. Staff from one institution noted that one of their departments was structured this way because the top supervisor does not have time or expertise to supervise an administrative assistant or data entry specialist, so a second supervisor is used in the department. Institution staff noted that the structure presented in Example 2 might exist to ensure smooth succession planning or to allow the lower supervisor to focus on internal management while the

FIGURE 3-5
Examples of small departments with multiple supervisors



Source: JLARC staff analysis of institutional human resource data and organizational charts.

upper supervisor focuses on external relations. In either case, these structures are inconsistent with a goal of strategically using supervisors and efficiently managing the personnel costs of an institution.

Institutions have some "working supervisors" and may not always fill positions when vacant

Staff from Virginia institutions noted that some supervisors are "working supervisors," who not only manage employees but also contribute to the high-value work of the department, such as budget and policy development. The employees filling these working supervisor positions may still be needed to perform work of the department. However, other supervisors within the department or functional area could potentially assume supervisory responsibility over their one direct report. Staff at institutions outside Virginia that have reached spans within the benchmark range report that the benchmarks assume that supervisors are working supervisors. These institutions reported being able to address narrow spans of control after examining measures of workload in each department. It is likely, therefore, that this does not fully explain a school's inability to reach benchmarks.

Staff at Virginia institutions, including VCU, noted that narrow spans of control may be the result of attrition and either the inability to fill or decisions not to fill vacant positions. Outside Virginia, staff reported that they look for opportunities to consolidate or reorganize departments when vacancies occur, with the goal of organizing support functions strategically.

In some instances, institutions may use supervisory promotions as means to increase compensation

Some institutions use supervisory positions—with corresponding title and compensation—for employee recruitment or promotion. One Virginia institution reported that it recruited some employees into supervisory roles in an effort to attract particular types of employees rather than because of a strategic need for more supervisors. Staff from three Virginia institutions noted that they were aware of instances when employees were promoted to supervisory positions to increase their compensation, not because their department needed another supervisor. If these practices are common at Virginia institutions, they may contribute to abnormally low spans of control, add unnecessary costs, and contribute to an inefficient allocation of responsibilities.

The state's employee classification system does not appear to cause the disproportionate number of supervisors to non-supervisors at Virginia institutions, but it may not prevent such a situation. The classification system does allow institutions to increase an employee's compensation when an employee assumes supervisory responsibilities. However, staff from the Department of Human Resource Management and institutions cited examples of ways employers can retain employees by increasing compensation—such as through salary adjustments—without creating unnecessary supervisory positions.

In interviews, staff of schools outside Virginia report that the root cause of their narrow spans of control was the use of supervisory promotion to increase employee compensation and retain employees. In response to these findings, these institutions are setting guidelines for the creation of supervisory positions and adapting their compensation models so that employees may advance in the organization without being promoted to supervisory positions.

Institutions should take steps to improve the allocation of supervisory responsibilities

Increasing spans of control at Virginia institutions could have several benefits, based on the experiences at institutions outside of Virginia that have increased their spans of control. These institutions report achieving operational efficiency, through more effective and efficient reporting structures and well-defined roles and career paths for both supervisors and non-supervisors. Institutions outside Virginia also report achieving cost savings.

Efforts to increase spans of control at institutions in other states provide a guide to capitalize on opportunities at Virginia institutions

The approaches used by UNC Chapel Hill, UC Berkeley, Cornell University, and Bowling Green State University to increase their spans of control and achieve savings could serve as a guide for Virginia institutions. For example, UC Berkeley, UNC Chapel Hill, and Cornell University are reorganizing functions, reallocating supervi-

sors to different functions, eliminating supervisory positions, and creating non-supervisory career paths for their employees. Cornell University primarily used an early retirement program to eliminate supervisory positions, reorganize departments, and increase its average span of control. Bowling Green State University, which is in the early stages of its reform efforts, plans to increase average spans of control to six direct reports per supervisor across its support functions and reorganize small departments where their institution-wide span of control target (six direct reports per supervisor) cannot be met.

Range of savings from reforms at other institutions indicates potential opportunities at Virginia institutions

Institutions outside Virginia report that their efforts to widen spans of control have yielded annual savings ranging from $3.2 to $20 million annually, mostly depending on the size of the institution. These savings equate to between 0.5 percent and one percent of total annual operating expenditures at the respective institution. On a per full-time equivalent (FTE) student basis, annual savings range from $200 to $790.

Savings as large as $20 million may not be achievable at Virginia institutions for several reasons. Most of the institutions that have reviewed and are increasing their spans of control (UC Berkeley, UNC Chapel Hill, Cornell University) spend more and employ more staff than their Carnegie group median. In contrast, only four (UVA, VMI, William and Mary, and Mary Washington) institutions in Virginia spend more and employ more staff than their Carnegie group median. In addition, it is unknown to what extent savings are solely attributable to reductions in the number of staff.

Bowling Green State University, which is in the early stages of its reorganization efforts, estimated that it will save less (in total and on a per student basis) than the institutions mentioned above. This is most likely because it spends less and employs fewer staff than its Carnegie group median. Savings following its spans of control analysis and reorganization efforts are projected to be up to $3.2 million per year, which would represent approximately one percent of its total annual operating expenditures. This estimate suggests that the savings achieved through reorganization may be relatively modest at some Virginia schools, particularly those with relatively fewer staff and those that spend less than their Carnegie group median.

Using the range of 0.5 percent (low estimate) and one percent (high estimate) of total operating expenditures, reforms to spans of control at Virginia institutions could potentially reduce spending by an average of $2 million to $4.1 million per year (Table 3-2). On a per student basis, average savings across Virginia institutions could range from $147 to $294 per year, and some institutions could see higher savings. For example, through spans of control reforms, William and Mary and VMI could both potentially save as much as $445 per student per year, assuming these reforms yielded savings of approximately one percent of total operating expenditures. Savings would be minimized, however, if efforts to increase spans mostly involved reorganizing rather than reducing the number of staff.

TABLE 3-2
Virginia institutions could reduce costs by increasing span of control

	Average annual savings ($M)		Average savings / FTE student	
Institution	***Low***	***High***	***Low***	***High***
Outside Virginia	*$3.2*	*$20.0*	*$203*	*$790*
Virginia baccalaureate	0.3	0.5	157	314
Virginia master's	0.9	2.0	104	215
Virginia doctoral	3.8	7.5	176	353

Source: JLARC staff analysis of findings and estimated savings achieved at institutions outside Virginia, NCES data, and institutions' FY 2012 financial reports.
Note: Operating expenditures exclude hospital and medical center expenditures at VCU and UVA. Low and high average annual savings are based on 0.5 and 1.0 percent of total annual operating expenditures.

Institutions should assess their organizational structures and monitor spans of control more routinely and comprehensively

All Virginia institutions should perform a comprehensive review of their organizational structures (UVA and William and Mary are already undergoing such a review). It appears particularly important to perform comprehensive reviews at those institutions with higher numbers of support staff relative to similar institutions. A comprehensive review would also help those institutions that have reported that they are understaffed, as it would ensure that current staff are being used most efficiently and effectively.

The comprehensive review should include several analyses. An analysis of spans of control should be performed because all have average spans below the generally accepted benchmarks. Reviews of staff activities and workload should also be performed in order to identify areas where organizational changes are appropriate and would improve efficiency, such as areas where staff activities are duplicative. These reviews may also reveal opportunities to reallocate staff, reorganize departments, or reduce staffing numbers, which, as noted in Chapter 2, tend to be higher at Virginia institutions. These reviews could be comprehensive or targeted to departments where spans are narrow relative to other areas.

This review can be done internally through the institution's human resource or budget office or externally, with the help of a consultant. In other states, institutions have hired consultants to examine spans of control and recommend organizational changes at the department level. Hiring a consultant to perform the review may not be practical for smaller Virginia institutions, such as Longwood and UVA-Wise, but larger institutions, such as George Mason, Virginia Tech, and VCU may find it an appropriate way to understand opportunities to increase spans of control in each department. After the review, institutions should take steps to implement recommendations to streamline their organizational structure, which may include reducing supervisory positions and layers of management.

RECOMMENDATION 1

Boards of visitors at all Virginia institutions should direct staff to perform a comprehensive review of their organizational structure, including an analysis of spans of control and a review of staff activities and workload, and identify opportunities to streamline their organizational structure. Boards should further direct staff to implement the recommendations of the review to streamline their organizational structures where possible.

Periodic reports on average spans of control at Virginia institutions would provide transparency to boards of visitors regarding how supervisory roles are being used at their respective institutions and could serve as an indicator of structural efficiency. Although institutions have the data necessary to do so, most do not track or generate reports on spans of control. All institutions should use data to monitor spans of control and understand more precisely where spans of control can be increased.

RECOMMENDATION 2

Boards of visitors at all Virginia institutions should require periodic reports on average and median spans of control and the number of supervisors with six or fewer direct reports.

Institutions should review and revise policies concerning the use of supervisory positions

Boards of visitors at Virginia institutions should review their institution's human resource policies to determine whether aspects of these policies may promote the disproportionate use of supervisors relative to non-supervisors. The purpose of the review should be to identify whether policies need to be adopted or if existing policies should be strengthened. In its review, each board should direct staff to evaluate the following aspects of its institution's human resource policies to determine if policies exist that:

- establish spans of control guidelines, including both targets and the minimum number of direct reports per supervisor;
- prohibit the creation of unnecessary supervisory positions, including defining the circumstances necessitating a supervisor;
- prevent using supervisory promotions as a means to retain employees or increase their compensation; and
- require periodic reviews of departments with narrow spans of control.

Having policies on both span of control targets and a minimum number of direct reports per supervisor is important. The first establishes an average span of control (or a range) that institutions should expect departments to be able to achieve. For example, UNC Chapel Hill set an institution-wide span of control target of seven

direct reports per supervisor. Establishing minimum spans of control can help administrators control the number of supervisory promotions by requiring each supervisor to supervise a certain number of direct reports. This policy should allow for exceptions where the minimum span of control cannot be met, but require that a clear business case be presented to justify spans of control that are lower than the minimum. For example, UNC Chapel Hill requires new supervisory positions to have no fewer than four direct reports, unless a senior institutional administrator explicitly grants an exemption.

RECOMMENDATION 3

Boards of visitors at all Virginia institutions should direct staff to revise human resource policies to eliminate unnecessary supervisory positions by developing standards that establish and promote broader spans of control. The new policies and standards should (i) set an overall target span of control for the institution; (ii) set a minimum number of direct reports per supervisor, with guidelines for exceptions; (iii) define the circumstances that necessitate the use of a supervisory position; (iv) prohibit the establishment of supervisory positions for the purpose of recruiting or retaining employees; and (v) establish a periodic review of departments where spans of control are unusually narrow.

4 Managing Costs of Procurement

SUMMARY Institutions generally use strategies that have been shown to improve efficiency in the procurement of goods and services, but changes to several strategies could further improve efficiency. Cooperative procurement is an effective procurement strategy used by Virginia institutions, but cooperative efforts by Virginia institutions have also fragmented buying power among institutions and state agencies. The state should explore ways to alleviate this fragmentation, which if addressed could reduce purchasing costs. Institutions also generally have policies for institution-wide contracts and limiting purchasing choice for their employees—which generally reduce costs. Not all departments across each institution, though, adhere to these policies, which results in "off contract" purchases or purchasing choices based on personal preference rather than lowest price. Institutions should set and better enforce policies designed to reduce purchasing costs across their organizations.

Procurement of goods and services is a major expense for Virginia institutions. Under the Restructuring Act, 12 of Virginia's public four-year higher education institutions were granted autonomy from the state in managing the procurement of goods and services. Institutions were granted the flexibility to implement procurement processes to "purchase high quality goods and services at reasonable prices" free from "constraining policies that hinder [their] ability to do business in a competitive environment." In return, these institutions are expected to maximize the operational efficiency of their procurement processes.

Institutions use cooperative procurement to obtain better pricing, but buying power is still fragmented

Cooperative procurement is one of the strategies that reviews of higher education have consistently recommended to promote efficient procurement of goods and services. All Virginia institutions report that they use cooperative procurement to reduce costs, and it was most commonly mentioned by staff as the strategy from which they received the greatest benefit, in terms of both cost savings and reduced staff time. A staff member at William and Mary explained, "our [procurement] staff would have to be three times as large" if they did not use cooperative contracts, because of the additional time needed to develop their own contracts.

Institutions report cooperative procurement allows them flexibility to obtain better pricing

Virginia institutions can participate in cooperative procurement with a variety of entities to search for better pricing for goods and services and reduce staff time and effort needed for negotiating their own contracts. Prior to the Restructuring Act, an institution could purchase from a state contract developed by the Department of General Services (DGS) or the Virginia Information Technologies Agency (VITA). Schools can cooperatively procure with other entities subject to the Virginia Public Procurement Act (VPPA), such as other Virginia public institutions. Autonomy gained from the Restructuring Act allows institutions to also participate in cooperative procurement through contracts that are developed by entities not subject to the VPPA, such as the federal government, national education procurement organizations, and other Virginia public institutions that have gained autonomy.

VASCUPP

The Virginia Association of State College and University Purchasing Professionals is a membership group that serves as a resource for procurement staff at member institutions. Member institutions are allowed to access contracts established by other association members through a centrally located contract database. Eleven of Virginia's 15 institutions are members.

The most common type of cooperative procurement by institutions is use of contracts through the Virginia Association of State College and University Procurement Professionals (VASCUPP). In interviews, institution staff indicated that they typically explore options, such as state contracts negotiated by DGS or VITA and cooperative contracts available through VASCUPP, when applicable, before attempting to negotiate a contract on their own.

Institutions provided several examples of savings resulting from cooperative procurement for goods and services through both state and VASCUPP contracts. For example, ODU saved 17 percent ($57,000) in FY 2013 by using a contract established by VITA for Oracle software licenses. VCU procurement staff purchased laboratory supplies through a VASCUPP contract and saved $200,000 (13 percent) compared to the state contract.

Institutions can purchase certain products for considerably less from a VASCUPP contract because of higher education discounts. Contracts established by higher education institutions are likely to include discounts that are not available to other customers, including other state agencies. VCU staff cited the example of saving nearly $650,000 (10 percent) using VASCUPP contracts with higher education discounts for online journals and databases.

Cooperative contracts used by Virginia institutions may not maximize cost savings because buying power is not aggregated across schools

Many cooperative contracts used by Virginia institutions are VASCUPP contracts. These contracts may not maximize cost savings because of the lack of collaboration across institutions during the contract negotiation process. In most cases, the contract price and terms for VASCUPP contracts are negotiated by one institution, using its individual buying power, and then made available to other institutions. This is beneficial for the other institutions, particularly if a state contract for the good or service is not available, because they do not have to devote resources to negotiating a

new contract. Cost savings, however, could be even greater if the original contract were negotiated by multiple institutions that aggregated their buying power. Greater collaboration among institutions in the negotiation of contracts would also help institutions to "maximize … economies of scale" as directed by the Restructuring Act.

Fragmented buying is particularly evident in the area of IT. Eleven Virginia institutions license Banner administrative software to manage their student data, human resource information, financial aid processing, alumni information, and financial information. Staff at the institutions indicated that all institutions may be able to achieve a better price for the Banner software if they consolidated their purchasing through a cooperative contract that is developed based on the needs and requirements of *all* higher education institutions. Currently, no such contract exists, either through VASCUPP or from VITA. Other examples included IT systems security programs and "cloud services" (paying a private vendor to store data and host applications).

Cooperative procurement among institutions has fragmented buying power at the state level

Institutions most often use cooperative contracts established by other higher education institutions rather than purchasing from state contracts or developing their own contracts. This has reduced the buying power across all agencies. Institutions often purchase the same types of goods that state agencies do—office supplies, computers, and printers—from the same vendor, but through a VASCUPP contract rather than a state contract. For example, DGS and several institutions have separate contracts for office supplies through the same vendor. This raises the question whether institutions are maximizing both the "economies of scale among institutions of higher education" and the "leveraged buying power of the Commonwealth as a whole" in return for being granted procurement autonomy under the Restructuring Act.

Institutions should further aggregate buying power through cooperative procurement efforts

DGS staff, institution staff, and numerous reviews of procurement in higher education indicate that aggregating buying power to achieve economies of scale would reduce procurement costs at institutions. However, there appears to be disagreement on how best to achieve this.

The 2015-2016 state budget, as introduced, included language to create the Higher Education Procurement Cooperative, a "formal network and structure to aggregate and leverage individual higher education institutional procurement requirements and resources to obtain financial advantage from cooperative procurement." All higher education institutions in Virginia would have been able to participate, including those without procurement autonomy (Virginia State, Norfolk State, Christopher Newport, and the community colleges). Ultimately, at the request of DGS, the language was not included in the Appropriation Act. DGS staff indicated that the proposed legis-

lation would have further reduced the buying power of state agencies by including institutions without procurement autonomy, but they had insufficient time to determine the extent of the impact of the proposed language before it was introduced.

Several Virginia institutions are currently in the beginning stages of establishing a procurement consortium that would serve as a strategic sourcing initiative in place of the cooperative proposed in the state budget. The consortium would have its own staff that would serve all participating members. The goal of the consortium would be to identify goods and services for which there is opportunity to aggregate buying power with other institutions to achieve lower pricing, while also reducing the administrative time necessary to negotiate contracts at individual institutions. It would be self-funded by institutions through contributions from member schools. Contracts established by the consortium would specifically address the needs across all participating institutions. While the consortium would not address all purchases made by institutions, it could address the largest ones. However, the consortium would not have as much buying power as the cooperative that was proposed in the budget, because it would include fewer institutions. Those that have not been granted autonomy in procurement under the Restructuring Act cannot participate.

DGS staff emphasized that its Division of Purchases and Supply (DPS) and VITA have authority to establish cooperative procurements for use by all public bodies in the state, including institutions of higher education. DPS and VITA could facilitate the same initiatives that would ultimately be pursued by the cooperative proposed in the budget or the consortium the institutions are developing on their own, including negotiating a separate schedule of higher education discounts for state contracts. According to DGS, creating a higher education consortium would create a duplicative statewide cooperative procurement entity also funded in part by general funds. Although DGS indicates that DPS could serve many of the purposes of the proposed higher education consortium, thus far no efforts have been made by DGS or institutions to facilitate greater cooperative procurement through DPS.

A combination of the higher education consortium and greater use of DPS and VITA for cooperative procurement may also be possible. For example, a higher education cooperative could focus on procurement of goods and services unique to higher education, such as journal subscriptions and student information systems, where expertise in the area of higher education may be beneficial to selecting the vendor. DPS could coordinate with higher education institutions and combine their buying power with state agencies for common goods and services only, such as the purchase of office supplies and printer paper. VITA could coordinate with institutions and combine their buying power for purchases of IT goods and services that are common to both institutions and state agencies.

Adoption of the higher education cooperative in the proposed budget language would involve a tradeoff between higher education and other state agency purchasing costs. Greater use of cooperative procurement arrangements between institutions of higher education would reduce the volume of purchases institutions make

from state contracts established by DGS or VITA. This in turn could reduce other state agency buying power and leverage in future contract negotiations, resulting in higher prices or less favorable terms on those contracts. State agencies using state contracts negotiated by DGS or VITA may have to pay more for goods and services.

Regardless of which option is pursued—a higher education cooperative, greater use of DPS and VITA contracts, or some combination—greater aggregation of spending across institutions would likely reduce procurement costs for higher education. However, without further review, it is not possible to determine which option would result in greater savings. Institutions assert that DPS lacks expertise in procuring goods and services that are unique to higher education, such as electronic journal subscriptions for libraries, and they would therefore prefer to work with a consortium that focuses on the specific procurement needs of higher education. Conversely, it is likely that the state as a whole would benefit from aggregating the spending of higher education institutions and state agencies through DPS, particularly for common goods like office supplies.

Greater aggregation of spending across institutions, however, could potentially hinder the ability of higher education institutions to meet small, women-owned, and minority-owned (SWaM) business requirements under the Restructuring Act. Several institutions expressed concern that greater use of large cooperative procurements may make it more difficult to meet these requirements, because cooperative contracts are competitively bid based on price or quality. SWaM businesses may not be able to match the lowest price offered by a larger vendor.

Small, women-owned, and minority-owned (SWaM) business requirements

Institutions are required to allocate a certain portion of procurement spending to SWaM vendors. This percentage varies by instituons but often ranges from 35 to 55 percent of total spending. The purpose is to enhance opportunities for SWaM businesses to participate in state-funded procurement and projects.

RECOMMENDATION 4

The General Assembly may wish to consider including language in the Appropriation Act and appropriating funding for a review of cooperative procurement. The review should be performed by a consultant and involve the Auditor of Public Accounts, Department of General Services, Department of Planning and Budget, State Council of Higher Education for Virginia, and Virginia Information Technologies Agency. The review should determine (i) the categories of goods and services for which cooperative procurement would enable higher education institutions to achieve savings; (ii) for each category of goods and services, to what extent institutions would realize greater savings by using the Department of General Services or Virginia Information Technologies Agency, or a higher education cooperative; and (iii) for each category of goods and services, to what extent state agencies would pay higher costs if institutions used a higher education cooperative instead of the Department of General Services or Virginia Information Technologies Agency. Findings from the review should be reported to the Chairs of the House Appropriations and Senate Finance Committees and the House and Senate General Laws Committees by September 1, 2016.

RECOMMENDATION 5

The General Assembly may wish to consider amending the Code of Virginia, as appropriate, based on the findings of the consultant review of higher education procurement, to direct all higher education institutions in Virginia to participate fully in joint procurement through higher education cooperatives or state contracts negotiated by the Department of General Services and the Virginia Information Technologies Agency.

Other strategies are used to reduce procurement costs but some could be used more broadly

Reviews of higher education institutions nationwide have consistently recommended four strategies, in addition to cooperative procurement, that institutions should adopt to promote efficient procurement. A majority of Virginia institutions have adopted each of these strategies (Appendix E). All institutions participate in electronic procurement (e-procurement), and all but two use the state's electronic purchasing system (eVA). E-procurement enables institutions to reduce resources for procuring goods and services. Three other strategies, including the use of institution-wide contracts, limits on procurement choices, and strategic sourcing, could be further implemented by Virginia institutions to reduce costs.

Institutions could better enforce institution-wide contracts and limit procurement choices when appropriate

Staff at all but one institution reported the use of institution-wide contracts for commonly purchased goods and services, which enable departments to take advantage of favorable pricing that has been negotiated by the institution's central procurement office. Using institution-wide contracts facilitates the aggregation of purchases by the institution toward a limited number of vendors, which in turn helps the institution negotiate volume pricing on future contracts. ODU, for example, estimates that its required institution-wide contract for printing saves between eight and 57 percent of the cost, depending on the size of the print job.

Off-contract purchasing occurs when department-level staff or central procurement staff make purchases without using an institution-wide contract, when such a contract has been negotiated and is available.

Departmental staff commonly have purchasing authority for purchases under a certain price threshold, typically $5,000.

Many institutions that have these institution-wide contracts, though, do not enforce their use or only require their use for certain goods, such as office products. Interviews with institutions revealed that department staff, likely in academic departments, often make "off-contract" purchases at most institutions. Off-contract purchasing may result in higher expenditures. Buyers may not take advantage of favorable pricing through a negotiated contract, and similar goods may be purchased from multiple vendors, reducing the institution's ability to achieve volume pricing.

Institution staff explained that sometimes off-contract purchases are necessary for unique items such as software or lab equipment for specialized research. Other times, off-contract purchases are less justifiable and are driven by factors such as personal preference for a certain brand.

Several institutions expressed concern that greater use of institution-wide contracts could make it more difficult to meet their SWaM requirements. Institution-wide contracts, like large cooperative contracts, tend to be competitively bid, which often places SWaM businesses at a disadvantage. Instead, a large portion of SWaM spending is achieved through small purchases at the department level, which means that more spending directed towards competitively bid institution-wide contracts could mean that less institutional spending would be directed to SWaM vendors.

In addition to not enforcing the use of institution-wide contracts, institutions do not sufficiently limit choice and variety of purchases. Limiting variety can lead to economies of scale and more favorable pricing, as well as reduce costs and staff time for making repairs because staff can gain expertise on a specific brand or model of a good. Examples of limiting products include purchasing only certain brands of office supplies and choosing only specified makes and models of computers. Central procurement and executive management staff report that procurement decisions for commonly purchased goods, such as those for office supplies, hotel accommodations, or vehicle rentals, are often driven by department or staff preferences. Purchases driven by preference rather than price or value may be inefficient when there are lower cost options.

Virginia Correctional Enterprises (VCE)

VCE is a work program to produce goods and services for agencies of the Commonwealth. VCE provides work opportunities and skill learning programs for offenders incarcerated at the Department of Corrections. The program gives offenders skills and a work ethic with the ultimate goal of reducing recidivism.

RECOMMENDATION 6

Boards of visitors at all Virginia institutions should direct institution staff to set and enforce policies to maximize standardization of purchases of commonly procured goods, including requirements to use institution-wide contracts.

RECOMMENDATION 7

Boards of visitors at all Virginia institutions should consider directing institution staff to provide an annual report on all institutional purchases, including small purchases, that are exceptions to the institutional policies for standardizing purchases.

Strategic sourcing is a formalized procurement process that involves assessing organizational demand for a good or service, identifying suitable suppliers, negotiating best priced contracts with suppliers, and then continually monitoring spending in search of additional opportunities for savings or quality.

Greater use of strategic sourcing could reduce procurement costs

Strategic sourcing is an in-depth and ongoing analysis of the demand and supply of goods and services purchased. Although 10 institutions reported using strategic sourcing, many only use it on a limited basis or as resources allow. Staff at several Virginia institutions indicated that the strategy could result in cost savings if implemented more broadly.

In one example, George Mason staff found that similar purchases from multiple departments could be aggregated and purchased through one contract. Strategic sourcing may save money, but it involves an additional cost. In this example, the initiative required hiring a full-time staff person to perform spending and market analyses. Reviewing department- and institution-wide procurement spending on an ongoing basis is one of the key aspects of a strategic sourcing initiative, and performing the analysis is often an intensive process of collecting and organizing data. Ongoing

monitoring of contracts is also necessary under a strategic sourcing initiative, rather than monitoring them only as time allows. Furthermore, additional resources may be needed for training staff to adequately document purchases and to upgrade IT systems to ensure that necessary data items are captured and can be output in useful formats. A statewide higher education procurement cooperative or greater collaboration between institutions and DPS or VITA, as mentioned previously, could provide strategic sourcing services to institutions and reduce the need for additional institutional staff for this purpose.

Requirement to purchase from VCE can result in higher price, but savings potential is likely minimal

Virginia Correctional Enterprises (VCE)

VCE is a work program to produce goods and services for agencies of the Commonwealth. VCE provides work opportunities and skill learning programs for offenders incarcerated at the Department of Corrections. The program gives offenders skills and a work ethic with the ultimate goal of reducing recidivism.

Institutions consistently reported that purchasing from Virginia Correctional Enterprises (VCE) can increase procurement costs. The VCE program provides persons in state correctional facilities with the opportunity to develop marketable job skills. The state has a longstanding policy of not providing general funds to support VCE, but rather requiring state agencies and higher education institutions to purchase furniture made by VCE. The revenue that VCE collects by selling furniture and other goods is used to fund the program.

The requirement to use VCE was the issue most widely cited by institution procurement staff as a state policy that limits efficiency. Staff provided numerous examples of instances when they could have paid a lower price for a nearly identical product if they had the ability to purchase that product from a vendor other than VCE. For example, Virginia Tech indicated that an ergonomic chair can be purchased from VCE for $620, but a comparable chair can be purchased elsewhere for $489.

VCE staff is required to grant a release, which allows an institution to purchase a product from a different vendor, when that institution can show that vendor has a lower price than VCE for an identical product. Similarly, when an institution can find a lower price elsewhere for what they believe to be a comparable product, VCE can elect to grant a release if they agree that the lower priced product has specifications that are comparable to what is available through VCE. Institution staff however, argue that VCE does not always grant releases in these instances of price discrepancies and that disagreement about what constitutes a comparable item can result in delays. In addition, they note the release process adds an artificial requirement that is not present in the procurement process for other entities in a competitive environment, such as private businesses.

The VCE requirement in essence uses institution funds, which are increasingly tuition and fees paid by students, to subsidize the program. Virginia institutions report that having the option to purchase elsewhere when it can be shown that VCE pricing is not competitive would lower purchasing costs. In FY 2013, institutions collectively purchased $12 million from VCE, which represented about one-third of VCE's total

revenue. Spending on goods from VCE can be substantial—Virginia Tech spent $2.7 million in FY 2013 and VMI spent over $800,000 in FY 2014.

It is likely that removing the requirement to use VCE would lower the procurement spending of institutions, but it is unclear by how much. If institutions saved 10 percent, their total procurement spending would decline by $1.2 million. This amount only equates to, on average, $6 per FTE student.

Removing the VCE requirement for institutions would adversely impact the program's ability to fund itself. However, institutions would likely still purchase certain items from VCE. Procurement staff from one Virginia institution noted, "VCE would still get awards for some product lines and the university would achieve savings [in other instances]."

5 Managing Costs of Other Support Functions

SUMMARY Several strategies to improve the efficiency of higher education support functions, including for information technology (IT) and facility management, have consistently been recommended in the research literature. These strategies include centralizing staff into units, automating business processes, and using a zone maintenance strategy. Virginia institutions already use many of the strategies recommended in these areas, suggesting that schools are taking steps to promote efficiency. The Restructuring Act has further helped institutions reduce costs in these areas, primarily by increasing their flexibility to purchase IT goods and plan capital projects with less state oversight.

In light of state budget declines, many public higher education institutions nationwide have identified strategies to enhance efficiency of support functions. These strategies position institutions to take advantage of economies of scale, where possible, and reduce unnecessary costs, complexity, and duplication of resources. Some strategies cut across functional areas, but others focus on specific areas such as information technology (IT) and facilities.

Most institutions centralize, automate, and outsource support functions to reduce costs

Some of the recommended strategies to reduce costs span multiple support functions. Centralization of staff into units and automation of processes are two strategies often considered best practices among private sector companies. Outsourcing can be a strategy to improve efficiency, depending on the specific situation.

Majority of institutions centralize key support functions in one department or in service centers

Nearly all Virginia institutions centralize key support functions to varying degrees. All 15 centralize facilities and maintenance, while 14 centralize procurement, human resource services, and finance. All but three centralize their information technology services. Centralization consolidates most staff devoted to a function into one department, such as a human resource department. Institutions benefit from centralizing key support functions because staff within centralized offices are more likely to interpret and apply policies consistently. Centralization also allows institutions to reduce duplicative staff at the department level. At small and medium-sized institutions in Virginia, functions are often centralized into one department. In some cases, liaisons are assigned in each department to coordinate with staff in central offices. At

larger institutions, such as Virginia Tech, fewer functions are centralized into one department due to the size of support operations and the dispersion of support staff across campuses.

Shared service centers, another approach to centralizing services, are increasingly used by large higher education institutions. This type of centralization usually involves consolidating a support function into one or more service centers on campus. For example, rather than each department within a college having its own human resource specialist, specialists work together in a central human resource center for the college. Institutions benefit from shared service centers much as they do from central offices, by enhancing consistency and reducing duplicative resources. Shared service centers enable institutions to improve the experience of their "customers" (faculty, staff, and students), because staff within each center become familiar with all the departments they serve.

William and Mary, Virginia Tech, and UVA are the three Virginia institutions that tend to have more decentralized support functions. Each is currently exploring the use of shared service centers. At UVA, the central IT office is piloting a desktop support service for departments that would eliminate the need for individual departments to provide IT support. Similarly, William and Mary is working to centralize its IT help desks into one operation. William and Mary has made significant progress in this effort, with only a few non-centralized IT services remaining.

These three institutions should pursue further centralization into shared service centers for their support functions. This could be accomplished using the results of organizational reviews currently underway at William and Mary (comprehensive review of business processes) and UVA (review of administrative functions). Virginia Tech could further centralize functions through the comprehensive review recommended in Chapter 3.

Institutions are automating business processes but up-front costs are often prohibitive

Automation entails performing tasks electronically rather than through paper-based systems. Automation often requires fewer staff than paper-based systems. It can also make information more widely available than hard-copy records. This is particularly important for student records and other frequently-accessed information.

Currently, 13 Virginia institutions report that they have integrated major administrative applications, such as financial, payroll, and human resource systems, into one electronic system. This has reduced the complexity and time that it takes to process information. Christopher Newport staff report that they have integrated most of their systems into one application; however, they still use the state payroll and human resource system. Virginia State also reported that all of their major systems are integrated, with the exception of human resource services.

Institutions report that their libraries are working to provide more information online because electronic resources are often cheaper and easier to distribute than hard-copy resources such as books and journals. The state provides funding for the Virtual Library of Virginia to help institutions make progress toward this goal.

Several institutions report they have an automated student information system, which gives students access to their own admission status, financial records, and academic progress without any assistance from staff. These systems provide information that institutions can use for analyzing trends in student achievement. Some institutions, such as Longwood, still rely heavily on paper-based processes for their student information system.

Despite efforts to move toward automation, processes at some institutions still remain heavily paper-based. Only a few schools have automated systems for attendance and leave, performance evaluations, travel reimbursement, and recruitment processes. Institutions report that up-front costs to purchase software, as well as ongoing resources necessary to operate and maintain software, have been barriers to further automation.

Greater automation of support services can increase cost savings and productivity by reducing staff time to manually fill out and file paper work and share information with other departments. Even though up-front costs may be sizable, long-term savings could be significant. For this reason, institutions should examine processes within their support functions to identify areas in which automation can improve efficiency. Specific opportunities to use automation can be identified through the comprehensive review recommended in Chapter 3.

All institutions outsource support functions but to varying extents

All Virginia institutions fully or partially outsource a number of support functions to private contractors. They also periodically explore opportunities to enhance the efficiency and effectiveness of their support functions through outsourcing. Institution staff indicated they typically outsource a service when a private contractor can offer it at lower cost and similar or greater quality than the service can be performed in-house. (This study did not include a full review of processes used by higher education institutions to determine whether to outsource functions. A list of services that are outsourced by each Virginia institution is included in Appendix F.)

The most commonly outsourced services across Virginia institutions are dining, postal, and custodial services. Many institutions outsource functions in their entirety, but some only partially outsource services. For example, while Longwood outsources all of its custodial services, Virginia Tech employs staff for custodial tasks during the day and uses contracted staff for custodial services after normal business hours.

Various factors, including the size and location of an institution, affect whether outsourcing specific functions is efficient at each institution. According to staff, many functions are performed in-house, because this either costs less or ensures better

quality than hiring a private contractor. At UVA-Wise, for example, housekeeping and maintenance are both provided in-house. Because of the institution's remote location, it would be difficult to find a private company that could provide the services at a lower cost than in-house staff. JMU reports that it has quality concerns with private custodial services, so it performs them in-house.

Risk to the institution, particularly to students and its core academic mission, is also a chief consideration in deciding whether to outsource a function, either entirely or only a portion. William and Mary staff noted that outsourcing can present a security risk for the institution if a contractor's employees are not properly screened before being allowed to work on campus. Virginia Tech staff noted that it is also important to consider what the impact would be if a contract does not work out as anticipated.

Most institutions use strategies to reduce IT costs and report efficiency gains through autonomy

Most Virginia institutions have already adopted many of the strategies identified as opportunities to improve the efficiency of IT services at higher education institutions in other states. This indicates that institutions are generally taking appropriate action to minimize costs of their IT systems. Institutions report that the Restructuring Act has also had a positive impact on their ability to control the costs of their IT functions.

Most institutions use strategies to manage IT systems and purchases efficiently, but some could further centralize systems and purchasing decisions

Three key IT management strategies have been recommended consistently across reviews of higher education institutions in other states as ways to improve the cost-efficiency of IT systems. These strategies are co-locating servers, "virtualizing" servers, and limiting the variety of IT hardware and software. These strategies are designed to minimize IT infrastructure, personnel, and support costs, while not adversely affecting the quality of services provided. Nearly all Virginia institutions use these strategies to some extent. (See Appendix E for detailed information on these strategies and their implementation at Virginia institutions.)

Most institutions require departments to co-locate and virtualize new servers, but some institutions could implement these strategies further

Twelve institutions require departments to locate most or all of their new servers in a centralized data center or room, except in cases where centralizing the server would be impossible, impractical, or not cost-effective. This strategy, when consistently implemented, can minimize the costs—construction, utilities, staffing, and security—of providing servers on campus. However, UVA and Virginia Tech require only some new servers to be centralized, and George Mason does not require departments to centralize any new servers, even when it would be a cost-effective option.

Eleven institutions require that most or all new servers be virtualized, which can further reduce costs of providing servers on campus. At these schools, exceptions are made only when virtualization (hosting multiple "virtual" servers on a physical server) is not possible, practical, or cost-effective. However, UVA, Virginia Tech, and George Mason reported that they do not require most servers to be virtualized, even when virtualizing them would be cost-effective. Two institutions, Norfolk State and UVA-Wise, do not require departments to virtualize any new servers. UVA-Wise staff reported that their IT department has not virtualized its servers because the institution is relatively small and the up-front investment (approximately $100,000) outweighs the benefits.

Some institutions have opportunities to further standardize IT hardware and software

Most institutions reported that they limit the variety of IT hardware and software, although larger institutions allow more purchasing flexibility than smaller institutions. As with procurement of goods in general, the extent of enforcement of these policies, and thus the level of standardization of hardware and software on campus, varies substantially across institutions. Limiting the variety of IT products purchased enables institutions to achieve better prices on hardware and software, because they can buy large quantities of a specific model from a particular vendor. Limiting the variety of IT hardware can also reduce support costs by making it more likely that IT personnel are familiar with the equipment for maintenance and repair, and that parts are readily available. Further, by standardizing purchases, institutions can ensure that the purchased hardware is compatible with existing IT systems.

Larger institutions, with the exception of VCU, appear to exert less control over IT purchasing decisions than smaller institutions. Twelve institutions require that all laptop purchase requests be reviewed to ensure that the purchases are compatible with existing IT systems and that standardized models are used across campus to the greatest extent possible.

Most large institutions in Virginia do not standardize their IT hardware as much as smaller institutions. Although they provide staff with standard laptop options, UVA, Virginia Tech, and George Mason also allow departments to purchase non-standard laptops at their discretion (up to an amount not exceeding their respective small purchase limits) and do not review most laptop purchases to maximize standardization at the institution. According to staff at two Virginia institutions, the lack of standardization is driven more by employee preference for certain equipment than by actual need. Allowing non-standardized purchases may be easier administratively, but likely leads to higher-than-necessary hardware and support costs.

Restructuring Act gave institutions greater authority to manage their IT purchases and projects

Currently, all but two institutions (Norfolk State and Virginia State) have IT autonomy. The remaining 13 schools are not subject to Virginia Information Technologies Agency (VITA) requirements, including those for IT strategic planning, expenditure reporting, budgeting, project management, ongoing operations, security, and audits. Institutions with IT autonomy can also develop IT projects and procure IT goods and services without VITA approval. Across institutions, IT staff noted that autonomy in IT has allowed them greater flexibility to purchase products at prices that are lower than those available through existing state contracts and to manage their projects with less oversight from the state.

Several stakeholders, however, indicated there is lack of clarity about the full extent of higher education's exemptions from state IT and procurement policy In particular, it is unclear whether institutions are required to use VITA's statewide contracts for telecommunications goods and services, such as long distance or broadband, with vendors other than Northrop Grumman. VITA has negotiated statewide contracts with telecommunications vendors, such as Verizon, that may be advantageous for higher education, but not all institutions use the contracts. This approach has advantages for state agencies as well, because VITA could negotiate a lower price for all state agencies if higher education were included.

Autonomy increased IT purchasing flexibility

Under the Restructuring Act, institutions were awarded greater flexibility in purchasing IT products and services outside of existing state contracts established by VITA. Institutions with autonomy in IT may still purchase items from a state contract, but they may also purchase items through a Virginia Association of State College and University Procurement Professionals (VASCUPP) contract developed by another institution. They may develop and negotiate their own contracts when prices are more competitive. This autonomy allows institutions to choose an existing contract that meets their needs, for both product specifications and price. For example, VMI used a VASCUPP contract to purchase laptop computers for nearly half the price (46 percent less) it would have cost through a VITA contract.

As with the procurement of other goods and services, procurement of IT goods and services through a VASCUPP contract may provide access to lower prices because of the discounts available to higher education institutions. These discounts are not available to other entities and are often not available through a VITA contract. ODU saves $498,798 annually on an online database service by using an education discount of 75 percent off the regular price.

Institutions are not always able to achieve lower prices than what is offered through VITA contracts. Four institutions noted that VITA contracts are generally more expensive than prices they can achieve elsewhere. Most institutions said VITA contracts are generally competitive with prices they could achieve elsewhere.

Autonomy reduced project management oversight

Institutions also cited efficiency gains since receiving IT autonomy. IT staff across Virginia institutions consistently reported being able to manage projects more efficiently because of VITA's reduced role in this area. For example, after the Restructuring Act, one institution eliminated a full-time staff position responsible for reporting to and coordinating with VITA. Other institutions cited instances in which following VITA's project review process, which is required by statute, added six months to a year to an IT project. (This study did not assess the quality of IT project management at institutions.)

Centralization of higher education IT would not likely lower costs

Centralization of institutions' IT systems under VITA, following the centralization example of the executive branch agencies, may not provide benefits that outweigh the challenges of making this change. A full review of the benefits and costs of centralizing IT systems of higher education institutions was not part of this review, but several challenges were identified. Such action would require a shift away from policies, such as the Restructuring Act, that have granted higher education institutions increasing autonomy over time.

Prior to the Restructuring Act, institutions already had some degree of autonomy in IT from the state. All institutions already had their own IT staff and services and operated their own IT systems. The Restructuring Act did not substantially affect staffing levels and IT systems at Virginia institutions. Because autonomy was focused on reducing administrative requirements and because institutions already had their own IT staff and systems, institutions did not need to increase staffing substantially to accommodate changes related to the Restructuring Act.

VITA staff cited potential benefits, including greater economies of scale and reduced duplication, of centralizing certain IT systems. However, according to both VITA and institution staff, VITA currently lacks the capacity to accommodate higher education IT systems and would need substantial additional resources if the state pursued greater centralization. Further, the increasing availability of "cloud services" through companies such as Google and Amazon may make centralized, state-level provision of IT services, such as virtual storage space and applications hosting, more expensive than could otherwise be purchased through private vendors.

The state may also encounter challenges to centralization due to needs that are specific to higher education institutions and are not common among state agencies. These needs, which include television and gaming support in dorm rooms, IT equipment for distance education, and specialized research equipment, may be challenging to integrate with existing state IT systems and would likely still necessitate IT staff and systems remaining at the institution level. JLARC and Gartner Consulting's 1997 review of the relationship between the state and higher education institutions

recommended that the state maintain its decentralized approach for IT services for higher education institutions, emphasizing the differing missions and priorities.

Most institutions use strategies to reduce facility costs, but capital outlay autonomy and maintenance reserve funding may increase long-term costs

Similar to IT, facility operations and maintenance is an area in which most Virginia institutions have adopted widely accepted efficiency strategies to improve service levels and reduce costs. The state granted several Virginia institutions autonomy in capital outlay through the Restructuring Act to further improve efficiency levels and reduce costs, but the new facilities built with this autonomy could have long-term cost implications for facility operations and maintenance. In addition, deferred maintenance may affect costs in the future, as the majority of Virginia institutions have substantial maintenance deficiencies that have not been addressed fully by the state's maintenance reserve program.

Majority of institutions use strategies to improve the efficiency of facility operations and maintenance

Three key strategies are widely recommended by reviews of higher education institutions as ways to improve the cost efficiency of facility operations and maintenance. Nearly all Virginia institutions employ two of the three strategies: monitoring energy consumption and using a "zone maintenance" strategy through which maintenance staff are assigned to designated areas. These two strategies help institutions reduce the amount of resources they use, including the energy required to operate facilities and the staff and materials used for facility maintenance.

Only half of Virginia institutions use the third strategy, a space management system to help identify opportunities to increase space utilization. This strategy is particularly useful at institutions with many buildings. It may not be critical, though, for smaller institutions where staff can monitor space utilization manually. In addition, acquiring technology to monitor space utilization requires a substantial upfront cost that may outweigh any cost savings.

Autonomy in capital outlay has given institutions flexibility in planning and building new facilities but could impact long-term costs

Six Virginia institutions have autonomy in capital outlay: VCU, UVA, UVA-Wise (through its relationship with UVA), Christopher Newport, Virginia Tech, and William and Mary. These institutions can initiate non-general fund capital projects, such as dining halls and dormitories, without prior state approval. Level III institutions can hire a building official and establish an internal unit to review building code compliance, though only UVA, Virginia Tech, and William and Mary have chosen to do so.

Institutions report that capital outlay autonomy gives them greater flexibility to plan and build their non-general fund facilities more efficiently and at a lower cost. Staff can more precisely estimate project costs, minimize changes to working drawings of a project, and complete projects more quickly without pre-approval from the state. At Virginia Tech, for example, staff reported that they saved 17,347 project days across all of their capital projects since 2007 due to their ability to move forward with projects independent of the state budget and planning cycle.

However, the new facilities constructed using this autonomy could have long-term impacts on operations and maintenance costs, particularly if they add significantly to an institution's total square footage rather than primarily replace older buildings. Additional facilities will increase energy, materials, and staff needs, which will in turn increase operations and maintenance costs.

Maintenance reserve program funding approach likely increases long-term facility costs

The state created a maintenance reserve program to help institutions fund projects for educational and general facilities not funded in their operating budgets, such as repairing a roof or upgrading a major electrical system. Even though the state provided about $65 million annually over the last 10 years, institutions still have many aging facilities with a backlog of maintenance projects. At George Mason, for example, the state has historically provided approximately $2.8 million in annual maintenance reserve funding, but maintenance needs typically total over $10 million each year. Institutions have the ability to set aside funding for maintenance projects in addition to the funds they receive from the state. However, they do not receive more funding for maintaining their facilities to a high standard, and maintenance reserve balances are often at risk of being repurposed by the state.

Statewide, maintenance deficiencies amounted to $1.4 billion in 2011. Several institutions, including JMU, ODU, Mary Washington, and Virginia State, have a high level of maintenance deficiencies relative to the replacement value of their facilities. Virginia State has the highest level of maintenance needs based on its Facility Condition Index (FCI) value. Its FCI value is twice as high as that of JMU, which has the second highest value, suggesting that the facilities at Virginia State are in substantially poorer condition than facilities at other Virginia institutions. In total, 12 of Virginia's 15 public four-year institutions have facilities that are considered to be in "poor" condition.

Insufficient maintenance reserve funding requires institutions to delay scheduled maintenance projects and address issues on a reactive rather than a preventive basis. This approach to maintenance is typically more costly in the long term. At Virginia Tech, for example, disbanding a floor waxing program saved $25,000 campus wide in the first year the program was stopped. However, the institution had to pay nearly $100,000 to replace one floor of a heavily-used classroom building where water damage was caused by a lack of wax. Addressing maintenance projects on a reactive

basis also makes it difficult for institutions to anticipate the timing of costly repairs, which hinders their ability to budget effectively.

Insufficient maintenance reserve funding also hinders institutions' ability to upgrade their systems and technology to operate facilities more efficiently. Older facilities typically have outdated technology (such as HVAC and electrical systems), with lower energy efficiency levels and higher operating costs. Upgrading these systems can produce long-term savings, but there is typically a substantial up-front cost. To keep facilities operational, institutions often devote limited resources to ad hoc maintenance projects rather than system and technology upgrades, which increases the long-term costs of facility operations.

The state recently changed the funding formula for the maintenance reserve program, but funding levels remain less than institutions' needs. As of FY 2015, institutions were awarded maintenance reserve funding based on the total square footage of their E&G facilities. Previously, funding levels were determined based on specific projects and demonstrated need. Only two institutions—Virginia State and Norfolk State—received less funding under the new formula than they had in FY 2014, but the state provided additional funding to help phase in the new formula initially. Although the new formula has increased funding at most institutions, funding levels still remain less than institutions' maintenance deficiencies. Recommendations or options to address this and other issues related to facility maintenance will be provided in November 2014 in JLARC's final higher education report.

Appendix A: Study Mandate

HOUSE JOINT RESOLUTION NO. 108

Directing the Joint Legislative Audit and Review Commission to study the cost efficiency of the Commonwealth's institutions of higher education and to identify opportunities to reduce the cost of public higher education in Virginia. Report.

Agreed to by the House of Delegates, February 10, 2012
Agreed to by the Senate, February 28, 2012

WHEREAS, "Preparing for the Top Jobs of the 21st Century: The Virginia Higher Education Opportunity Act of 2011" has set a goal of awarding 100,000 more degrees over the next 15 years; and

WHEREAS, the State Council of Higher Education for Virginia has reported that the average increase for in-state undergraduate tuition and mandatory fees from the 2009-2010 school year to the 2010-2011 school year was 13.1 percent at four-year institutions; and

WHEREAS, the Joint Legislative Audit and Review Commission has reported in its 2011 Review of State Spending that tuition revenue for Virginia's public colleges and universities increased 110 percent between 2002 and 2009, while inflation increased only 23 percent during that period; and

WHEREAS, the Joint Legislative Audit and Review Commission has reported that Virginia's average annual in-state tuition and fees at public four-year institutions of higher education was $8,814 in 2010, ranking as the fourteenth highest average in the nation; and

WHEREAS, the increasing costs of higher education have forced many students to incur significant debt in order to complete their degrees, with the Institute for College Access and Success reporting that the average student debt for Virginia public institutions of higher education is $19,918, and that 57 percent of students have debt related to their higher education; and

WHEREAS, the increasing costs of higher education and the growing debt burden for students may limit access to educational opportunities, adversely affect growth in other sectors of Virginia's economy, and be an obstacle to the goal to award 100,000 more degrees over the next 15 years; and

WHEREAS, in December 2009 the Joint Legislative Audit and Review Commission authorized its staff to complete a study of the cost efficiency of higher education in Virginia, but, because of workload demands from joint study resolutions adopted by the General Assembly, such a study could not be completed; now, therefore, be it

RESOLVED by the House of Delegates, the Senate concurring, that the Joint Legislative Audit and Review Commission be directed to study the cost efficiency of the Commonwealth's institutions of higher education and to identify opportunities to reduce the cost of public higher education in Virginia.

In conducting its study, the Joint Legislative Audit and Review Commission (JLARC) shall consider (i) teaching loads and productivity of faculty; (ii) the impact of faculty research on tuition and other

costs; (iii) incentives created by existing faculty compensation models; (iv) design and utilization of facilities; (v) operation of enterprise activities; (vi) the use of technology for academic programs and administrative functions; (vii) administrative staffing and costs; (viii) scholarships and other student aid programs; (ix) the use of outsourcing and public-private partnerships; (x) the use of cooperative procurement; (xi) the impact of nonacademic activities and programs on tuition and fees; (xii) sources of revenue and income, and how these sources are allocated toward academic, administrative, and other costs; (xiii) opportunities to reduce the cost of public higher education in Virginia; and (xiv) such other related matters as it may deem appropriate

Technical assistance shall be provided to the Joint Legislative Audit and Review Commission by the State Council for Higher Education for Virginia and all state-supported institutions of higher education. All agencies of the Commonwealth shall provide assistance to JLARC for this study, upon request.

The Joint Legislative Audit and Review Commission shall complete its meetings for the first year by November 30, 2013, and for the second year by November 30, 2014, and the Chairman shall submit to the Division of Legislative Automated Systems an executive summary of its findings and recommendations no later than the first day of the next Regular Session of the General Assembly for each year. Each executive summary shall state whether JLARC intends to submit to the General Assembly and the Governor a report of its findings and recommendations for publication as a House or Senate document. The executive summaries and reports shall be submitted as provided in the procedures of the Division of Legislative Automated Systems for the processing of legislative documents and reports and shall be posted on the General Assembly's website

Appendix B: Research Activities and Methods

Key research activities performed by JLARC staff for this study included

- structured interviews with support staff at all 15 public four-year higher education institutions in the state, state agency staff, experts in higher education support functions, and staff at higher education institutions in other states;
- quantitative analysis of institutions' spending and staffing data for support functions;
- quantitative analysis of institutions' organizational structure, particularly the number of direct reports per supervisor, or "span of control";
- identification of institutions' current efforts to promote efficiency; and
- document and literature reviews.

Structured interviews

Structured interviews were a key research method for this report. Interviews were held at each of the state's15 public four-year institutions, most of which were on-site, to obtain information from staff who oversee support functions. The interviews focused on the support functions with the highest levels of spending and staffing, which included:

- human resources,
- information technology (IT),
- procurement,
- facilities operations and maintenance,
- academic support,
- admissions and records,
- safety and security, and
- public relations and development.

To minimize the burden of interviews on the staff at each institution, structured interviews on four or five of the support functions were performed per institution. Functional areas for interviews were assigned to each institution based on their (1) spending and staffing levels relative to other Virginia institutions, (2) size, (3) research mission, and (4) level of autonomy under the Restructuring Act to ensure a diverse group of institutions for each support function. Each functional area was discussed with five to 10 institutions.

Structured interviews were also performed with staff at a number of state agencies:

- State Council of Higher for Virginia,
- Auditor of Public Accounts,

- Department of Human Resource Management,
- Department of General Services,
- Virginia Community College System,
- Virginia Information Technologies Agency, and
- Virginia Retirement System.

Topics discussed included: policies and practices related to the efficiency of support functions, the impact of the Restructuring Act on support functions, internal and external barriers to the efficiency of support function efficiency, and the availability of data.

Staff from several higher education professional associations (American Association of University Administrators, National Association of College and University Business Officers, and Virginia Association of State College and University Purchasing Professionals) and institutions that had performed efficiency reviews (Carolina Counts staff from the University of North Carolina at Chapel Hill, Cornell University, University of California at Berkeley, and University of Minnesota) were also interviewed. The purpose of these interviews was to obtain information on common methods for reviewing support functions and strategies that have proven successful at improving the efficiency of support functions in other states.

Quantitative analysis

JLARC staff collected and analyzed data from four main sources during the course of this study (Table B-1) to determine spending and staffing levels at Virginia institutions currently, over time, and relative to other institutions nationwide where possible.

Even though substantial data on higher education institutions in Virginia is available from national databases, information was obtained directly from Virginia institutions to provide a more detailed accounting of expenditures and number of staff (Table B-2). Expenditures for each category were separated into personnel spending, spending on goods and services, spending on IT, and other spending. FY 2008 data was obtained for purposes of determining changes over time. A five-year time period was selected, because many institutions could not produce comprehensive spending data from years prior to FY 2008. Spending data from FY 2008 was adjusted for inflation to 2013 dollars using the CPI.

JLARC staff compared support function spending and staffing at Virginia institutions to similar institutions nationwide, accounting for several factors:

- student enrollment (on a per FTE or per 100 FTE student basis),
- number of faculty (on a per FTE instructional or research staff basis), and
- number of total staff (on a per FTE total staff basis).

Most comparisons that were reported are on a per FTE student basis to account for enrollment differences among institutions being compared.

TABLE B-1
Data for this review was collected from several primary sources

Data source	Description of data	Analysis performed
Virginia's public four-year institutions	Spending by sub-program area, FY 2008 and FY 2013	Current spending levels at Virginia institutions and how they have changed over time
	Number of staff by sub-program area, March 1, 2008 and March 1, 2013	Current staffing levels at Virginia institutions and how they have changed over time
	Employee records (March 1, 2013)	Span of control at each institution
Integrated Post-Secondary Education Data System (IPEDS), NCES	Spending by functional area at all public and private four year institutions nationwide (2012)	Current spending for support functions at Virginia institutions relative to similar institutions nationwide
		Current support spending at Virginia institutions relative to other functional areas (instruction and auxiliaries)
	Staffing, by occupational category at all public and private four-year institutions nationwide (2011 and 2012)	Current number of support staff at Virginia institutions relative to similar institutions nationwide
		Current proportion of support staff at Virginia institutions relative to other types of staff
Delta Cost, NCES	Spending by functional area for all public and private four-year institutions nationwide (1991, 2000, 2010)	Change in support spending over time at Virginia institutions relative to similar institutions nationwide
		Change in support spending over time at Virginia institutions relative to other functional areas
	Numbers of staff by occupational area for all public and private four-year institutions nationwide (1991, 2000, 2010)	Change in the number of support staff over time at Virginia institutions relative to similar institutions nationwide
		Change in the number of support staff over time at Virginia institutions relative to instructional staff
CUPA-HR	Average salary per position, at each Virginia institution and the average across public and private baccalaureate, master's, and doctoral institutions nationwide (2012)	Compare average salaries paid to top and mid-level support staff at Virginia institutions with similar institutions nationwide

Source: JLARC staff analysis.
Note: NCES, National Center for Education Statistics.

Where possible, Virginia institutions were compared to institutions nationwide in the same group as designated by the 2010 Carnegie Classification of Institutions of Higher Education (Table B-3). Carnegie classifications are a system that assigns institutions to different groups based on the level of research and size of the school. Virginia institutions were also compared to private institutions in the same Carnegie group.

A majority of the analyses compared support function spending and staffing at Virginia institutions to spending and staffing by the median nationwide in the same Carnegie group. Median spending

and staffing was used to mitigate the effects of schools with spending and staffing levels that were outliers (high or low) from most other institutions in the same Carnegie group.

TABLE B-2
Support function sub-categories and functional areas

Sub-category	Functional area	Sub-category	Functional area
Academic support	Academic administration Academic computing services Faculty development Course and curriculum development Educational media services Libraries Museums and galleries Other support	**Institutional support**	Administrative computing services (IT) Executive management Fiscal operations General administrative services, including human resources Logistical services, including procurement Public relations and development (fundraising) Safety and security Security Space management
Student services	Counseling and career guidance Financial aid administration Social and cultural development Student admissions Student health services Student records Student services administration	**Operations & maintenance**	Physical plant administration Building repairs and maintenance Custodial services Utilities Landscape and grounds

Source: JLARC staff analysis of charts of accounts for several Virginia institutions, the state chart of accounts, and the research literature.

TABLE B-3
Carnegie classification of institutions of higher education

Carnegie classification	Virginia institutions 2010
Doctorate-granting universities	
Very high research	UVA, VCU, Virginia Tech
High research	ODU, George Mason, William and Mary
Master's colleges and universities	
Large master's	JMU, Norfolk State, Radford, Mary Washington
Medium master's	Longwood
Small master's	Christopher Newport, Virginia State
Baccalaureate colleges	UVA-Wise, VMI

Source: NCES IPEDS data, 2010.

Current spending and staffing levels relative to Carnegie group

JLARC staff downloaded spending and staffing data for 2012 from the NCES IPEDS database to compare spending and staffing levels at Virginia institutions relative to their corresponding Carnegie group. Table B-4 illustrates the spending categories that were included in support spending for purposes of this review. Staffing data for 2012 are broken down into multiple categories. Postsecondary teachers, instructional, research, and public service staff were considered to be instructional staff and the remaining categories to be support and other non-instructional staff (Table B-5).

TABLE B-4
IPEDS data spending categories

Broad spending category	IPEDS data categories included in category
Support	Academic support, institutional support, student services, and operations and maintenance spending for these functions
Instructional	Instruction, research, public service
Auxiliary	Auxiliary
Other	Other expenses, independent operations, scholarship expenses

Source: JLARC staff analysis of 2012 NCES IPEDS data.
Note: Operations and maintenance spending associated with support functions was calculated by combining operations and maintenance spending from within each of the three support function categories of academic support, institutional support, and student services

TABLE B-5
Staffing categories for IPEDS and Delta Cost Project data

	IPEDS data (2012)	Delta Cost Project data (1991-2010)
Support	• Librarians, curators, archivists, other teaching and instructional support • Management • Business and financial operations • Computer, engineering, science • Community service, legal, arts, media • Healthcare • Service, sales, office/admin, natural resources, construction, maintenance, production, transportation, material moving	• Executive, administrative, managerial • Other professionals • Technical and paraprofessional • Clerical and secretarial • Skilled crafts • Service and maintenance
Instructional	• Postsecondary teachers instructional, research, public service	• Instructional • Research • Public service

Source: NCES IPEDS data, 2012. Delta Cost Project data, 1991-2010.

Changes in spending and staffing levels over time relative to Carnegie group

JLARC used data from the Delta Cost Project database to assess the change in support function spending and staffing levels, relative to other types of intuitional spending and staffing levels, from 1991 to 2010. Three years of Delta Cost Project data were used (1991, 2000, and 2010). Spending levels in 1991 and 2000 were adjusted to 2010 dollars using the Consumer Price Index (CPI) in order to account for inflation.

The spending categories in the Delta Cost project database were similar to the categories described in Table B-4, with one exception, but the staffing data was different. The Delta Cost Project dataset only reports operations and maintenance spending across all functional areas, therefore operations and maintenance spending for support functions only could not be determined. The staffing categories in the Delta Cost database were also broader than what was available for the current analysis of staffing levels (Table B-5).

Virginia institutions were compared to other nationwide public institutions in the same broad Carnegie classification for any type of nationwide comparison. The broader classification (doctoral, master's, and baccalaureate) was chosen because a number of institutions changed classifications within each broad group during the timeframe. For example, VCU moved from the high research to the very high research classification during this time period.

Compensation analysis

JLARC staff used College and University Human Resources Professional Association (CUPA-HR) data to compare base salaries of 436 different support function positions at Virginia institutions to the base salaries of the same positions at institutions nationwide. These comparisons included both top-level administrators and mid-level support staff and were collected for the 2012-2013 academic year. Although CUPA-HR also benchmarks base salaries of staff in the athletics departments at higher education institutions, these staff were excluded from the comparisons because they are not generally considered to be support staff. A complete list of the positions included in the comparisons is available in Appendix D. Two institutions were excluded from the analyses. NSU did not participate in the 2012-2013 CUPA-HR survey and VSU was unable to send JLARC staff their CUPA-HR data due to technical issues.

To compare base salaries, CUPA-HR survey submissions from Virginia institutions and comparative data on public and private institution nationwide from CUPA-HR were obtained. The average base salaries paid for each position at Virginia schools were compared to the average base salaries for the same position at other institutions within the same broad Carnegie group. Comparisons were made using both public and private comparison groups.

Analysis of supervisory span of control

JLARC staff collected and used Virginia institutions' human resources data to analyze the supervisory span of control at each institution. Employee-level data was collected to identify each employee, their position, and their supervisor, among other relevant data points. After collecting this data and validating its accuracy where such validation was required, all employees that were under the provost (or provost-equivalent position) at the institution were removed to exclude those employees at the institution who perform instruction- or research-related functions at the institution. (A spans analy-

sis does not readily apply to these employees because they are not performing functions similar to a business, and supervisor information was missing or inaccurate for many of these positions across institutions.) Any staff associated with medical centers (UVA) and cooperative extension programs (Virginia Tech and Virginia State) were also removed. One institution, Norfolk State, was unable to provide reliable data that could be used to perform a spans analysis. VCU was only able to provide staffing information for its finance and administrative division. To determine supervisory spans of control, the frequency at which each supervisory ID appeared in employee records were analyzed using SAS and Excel pivot tables. Because it counts the number of employees who report to a particular supervisor, the frequency at which each supervisor appeared in employee records was the supervisor's span of control.

Efficiency strategies checklist

JLARC staff compiled a list of widely recommended strategies for improving the efficiency of support functions based on a review of efficiency studies performed by higher education consultants nationwide, including Bain and Company, Accenture, Huron, and the Hackett Group. The support functions typically addressed in these studies were information technology, procurement, and facilities. Organization structure was also addressed, specifically through spans and layers analyses.

JLARC staff sent the list of widely recommended efficiency strategies to staff at Virginia institutions in the form of a questionnaire and asked them to determine whether these strategies are used at each institution. Responses were used to help identify areas where Virginia institutions could take additional steps to improve the efficiency of support functions. Institutions were able to provide context about these and other strategies they use to promote efficiency on the questionnaire and during structured interviews.

Document and literature review

Through the course of the study, JLARC staff performed a review of the Code of Virginia and Appropriation Act to gain a better understanding of the policies and funding levels that may impact support functions at Virginia's public higher education institutions.

Literature pertaining to the efficiency of support functions at higher education institutions was also reviewed to identify (1) areas or topics related to support functions that may warrant in-depth review; (2) trends in spending, staffing, and compensation nationwide; and (3) efficiency strategies, as discussed above. When available, studies performed internally by Virginia institutions were reviewed.

Appendix C: Support Function Spending and Staffing at Virginia Institutions

The following tables detail support spending and staffing levels relative to FTE students at each Virginia institution. Spending and staffing are broken down into four sub-categories: institutional support, academic support, student services, and operations and maintenance. For the purposes of this report, these categories were considered support functions. Data on the number of FTE students is for academic year 2012-13, includes undergraduate and graduate students, and was collected from SCHEV's website.

TABLE C-1
Support spending per full-time equivalent (FTE) student at Virginia institutions (FY 2013)

		Spending per FTE student			
Institution	**Total support**	**Institutional support**	**Academic support**	**Student services**	**Operations & maintenance**
UVA	$17,055	$3,552	$6,325	$2,207	$4,971
VMI	12,383	3,935	3,493	1,843	3,112
CWM	10,922	3,276	3,523	1,574	2,549
VCU	9,015	2,452	3,595	838	2,130
UMW	7,495	2,468	2,047	1,366	1,614
VT	7,059	2,117	2,019	833	2,090
JMU	6,447	1,813	1,967	978	1,689
CNU	6,407	2,039	1,615	1,409	1,345
LU	6,395	2,234	1,955	912	1,294
GMU	6,183	1,792	2,276	1,013	1,101
UVAW	5,992	1,947	1,945	822	1,277
NSU	5,597	1,969	1,555	721	1,352
ODU	5,387	1,585	2,164	621	1,017
RU	5,088	1,716	1,159	835	1,378
VSU	4,747	1,933	912	808	1,094
Virginia median	**6,407**	**2,039**	**2,019**	**912**	**1,373**

Source: JLARC staff analysis of data provided by staff at Virginia institutions.

TABLE C-2
Support staff per 100 full-time equivalent (FTE) students at Virginia institutions (2013)

Institution	Staff per 100 FTE students				
	Total support	**Institutional support**	**Academic support**	**Student services**	**Operations & maintenance**
UVA	13.4	3.6	4.9	0.7	4.1
VMI	12.7	3.1	2.9	1.5	3.8
CWM	8.8	3.3	2.0	1.1	2.4
VCU	8.0	2.8	3.5	0.8	0.8
UVA-W	7.8	2.8	2.2	1.3	1.4
CNU	7.7	2.7	1.5	1.6	1.9
NSU	7.7	3.4	1.6	1.1	1.6
UMW	7.4	3.1	1.5	1.3	1.6
LU	6.8	3.0	1.4	1.2	1.2
JMU	6.8	2.0	1.4	1.1	2.4
ODU	6.7	2.0	2.6	1.1	1.0
VT	6.5	3.0	1.6	0.7	1.2
RU	5.4	2.3	1.0	0.8	1.3
VSU	5.3	2.5	1.2	1.3	0.3
GMU	5.3	1.8	1.8	0.9	0.8
Virginia median	**7.4**	**2.8**	**1.6**	**1.1**	**1.4**

Source: JLARC staff analysis of data provided by staff at Virginia institutions, 2013.
Note: Staffing numbers reflect FTE staff. UVA's staffing levels include staff who provide support to the medical center and UVA-Wise, which inflates their staffing numbers.

Appendix D: List of Benchmarked Salaries

JLARC staff used College and University Professional Association (CUPA-HR) data to benchmark base salaries of support staff positions to the base salaries at similar institutions nationwide. Below are the positions that were compared across institutions.

Salaries compared using CUPA-HR's 2013 Administrators in Higher Education salary survey

Chief Exec Officer, System
CEO, Single Inst/Campus in Syst
Exec VP/Vice Chancellor
Chief Acad Affairs Officer/Prov
Chief Business Officer
Chief Athletics Admr
Chief Audit Officer
Chief Dev/Advance Officer
Chief Enrollment Mgt Officer
Chief Exten/Engagement Officer
Chief External Affairs Officer
Chief Facilities Officer
Chief Financial Officer
Chief Health Affairs Officer
Chief Human Resources Officer
Chief Info/IT Officer
Chief Instal Planning Officer
Chief Instal Research Officer
Chief Investment Officer
Chief Legal Affairs Officer
Chief Library Officer
Chief Pub Relations Officer
Chief Research Officer
Chief Stu Affairs/Life Officer
Dean Agriculture
Dean Architecture/Design
Dean Arts and Letters
Dean Arts and Sciences
Dean Biological and Life Sci
Dean Business
Dean Computer and Info Sci
Dean Continuing Ed
Dean Coop Extension
Dean Dentistry
Dean Divinity/Religion
Dean Education
Dean Engineering
Dean External Degree Prgms
Dean Family and Cons Sci
Dean Fine Arts
Dean Forestry & Environ Studies
Dean Gov/Pub Affairs/Pub Pol
Dean Graduate School
Dean Hth-Related Professions
Dean Honors Program
Dean Humanities
Dean Instruction
Dean Journalism & Mass Comm
Dean Law
Dean Library Sciences
Dean Mathematics
Dean Medicine
Dean Music
Dean Nursing
Dean Occup Studies/Voc Ed/Tech
Dean Performing Arts
Dean Pharmacy
Dean Pub Admin
Dean Pub Health
Dean Sciences
Dean Social Sciences
Dean Social Work
Dean Special Programs
Dean Undergrad Programs
Dean Veterinary Medicine
Dean of Students
Chief Accnting Officer/Contrlr
Chief Admin Officer
Chief Architect for the Inst
Chief Auxiliary Services Officr
Chief Budget Officer
Chief Purchasing Officer
Chief EO/AA Officer
Chief Diversity Officer
Chief Hospital Admr
Chief Veterinary Hospital Admr
Chief Student Admissions Officr
Chief Student Fin Aid Officer
Chief Student Registr/Rec Off
Chief Tech Transfer Officer
Chief Spons Resrch/Prgms Admr
Chief Contracts & Grants Admr
Deputy Chief Library Officer
Deputy Chief, Student Affairs
Deputy Chief Research Officer
Deputy Provost
Associate Provost
Assistant Provost
Chief of Staff to Syst/Inst CEO
Dep Chief Financial Officer
Dep Chief Facilities Officer
Dep Chief HR Officer
Dep Chief Info/IT Officer
Dep Chief Athletics Officer
Dep Chief Advance/Dev Officer
Dep Chief Budget Officer
Bursar
Chief Camp Bookstore Admr
Chief Camp Continuing Ed Admr
Chief Camp Distance Ed Admr
Chief Camp Internatl Ed Admr
Chief Camp Intnl Studies Ed Adm
Chief Environ Hth & Safety Admr
Chief Camp Risk Mgt & Ins Admr
Chief Camp Sec Admr/Police
Dep Chief Camp Sec/Police
Chief Camp Park/Transport Admr
Chief Camp Employment Admr
Chief Camp Payroll Admr
Chief Camp Benefits Admr
Chief Camp Employee Rel Admr
Chief Camp Classif & Comp Admr
Chief Camp HR Info Systs Admr
Chief Camp Training & Dev Admr
Chief Camp Food/Dining Svs Admr
Dep Chief Camp Food/Din Svs Adm
Chief Camp Research Park Admr
Chief Camp Real Estate Admr
Chief Camp Energy & Util Admr
Chief Camp TeleCom/Netw Admr
Chief Camp Enterprise Applic
Chief Camp Academic Computing
Chief Camp Adm Computing Admr
Chief Camp Research Computing
Chief Camp IT Security Admr
Chief Camp Student Activ Admr
Chief Camp Student Cntr Admr
Chief Camp Greek Life Admr
Chief Camp Acad Advising Admr

Chief Camp Career Services Admr
Chief Camp Student Counsel Cntr
Chief Camp Stu Hth Cntr-Non-Med
Chief Camp Stu Hth Cntr-MD Admr
Chief Camp Stu Hth Ctr-Nrs/Prac
Chief Camp Student Housing Admr
Chief Camp Annual Giving Admr
Chief Camp Corp/Fdn Rel Admr
Chief Camp Planned Giving Admr
Chief Camp Alumni Affairs Admr
Chief Camp Major Gifts Admr
Chief Camp Donor Rel Admr
Chief Camp Advance Svs Admr
Chief Camp Fed Gov/Legis Liaisn
Chief Camp State/Loc Gov Liais
Chief Camp Marketing Admr
Chief Camp Publications Admr
Chief Camp Study-Abroad Admr
Chief Camp Workf/Career Dev Adm
Chief Bus Affairs Off, Coll/Div
Chief HR Officer, College/Div
A/A Dean, Agriculture
A/A Dean, Arch/Design
A/A Dean, Arts & Letters
A/A Dean, Arts & Sciences
A/A Dean, Biological & Life Sci
A/A Dean, Business
A/A Dean, Computer & Info Sci
A/A Dean, Continuing Ed
A/A Dean, Coop Extens
A/A Dean, Dentistry
A/A Dean, Divinity/Relig
A/A Dean, Education
A/A Dean, Engineering
A/A Dean, Ext Degr Prgms
A/A Dean, Fam/Cons Sci/Hum Sci
A/A Dean, Fine Arts
A/A Dean, Forestry & Envir Stds
A/A Dean, Gov/Pub Affrs/Pub Pol
A/A Dean, Graduate Prgms
A/A Dean, Health-Rel Profs
A/A Dean, Honors Program
A/A Dean, Humanities
A/A Dean, Instruction
A/A Dean, Journ & Mass Comm
A/A Dean, Law
A/A Dean Library Sci
A/A Dean, Mathematics
A/A Dean, Medicine
A/A Dean, Music
A/A Dean, Nursing
A/A Dean, Occup/Voc Ed/Tech
A/A Dean, Performing Arts
A/A Dean, Pharmacy
A/A Dean, Pub Admin
A/A Dean, Pub Health
A/A Dean, Sciences
A/A Dean, Social Sciences
A/A Dean, Social Work
A/A Dean, Special Prgms
A/A Dean, Undergrad Prgms
A/A Dean, Veterinary Medicine

Salaries compared using CUPA-HR's 2013 Professionals in Higher Education salary survey

Head, Campus Printing Services
Head, Campus Mail Services
Head, Campus Land/Grnds Keeping
Head, Campus Construction
Head, Campus Skilled Trades
Head, Campus, Custodial Svs
Exec Assist to Sys or Inst CEO
Admin Specialist/Coord
Study Abroad Advisor
Academic Support Center Coord
Head, Campus Lrng Resources Ctr
Head, Campus Teaching Center
Credential Specialist
Academic Evaluator
Head, Foreign Student Services
Head, Athletics Acad Affairs
Head, Stu Academic Counseling
Academic Advisor/Counselor
Librarian, Head of Acquisitions
Librarian, Head of Tech Svs
Librarian, Head, Pub/Access Svs
Librarian, Head of Cataloging
Librarian, Head, Collect Devel
Librarian, Head, Archives/Recds
Librarian, Syst/Digital Coll
Librarian, Head, Ref/Instr (II)
Librarian, Ref/Instr (Lev I)
Librarian, Catal/Metadata (II)
Librarian, Cataloger (Level I)
Librarian, Electronic Resources
Librarian, Media
Library Svs Coord for Dist Ed
Librarian, Gov Docs/Pubs
Librarian, Serials
Librarian, Head, Branch Lib
Librarian, Head of Access Services
Librarian, Access Services
Librarian, Special Collections and Archives
Librarian, Data and Geographical Information
Librarian, Emerging Technology
Librarian, User Experience/Assessment
Head, Campus Museum
Archive/Museum/Gallery Curator
Continuing Ed Specialist
Continuing Ed Conf/Wrkshp Coord
Instr Tech, Faculty Support Mgr
Web Content Developer
Web Graphics Designer
Instr Technology, Specialist
Online Instr Designer, Entry
Online Instr Designer, Sr
Head, Campus Ed Media Services
Head, Exec Ed
Head, Theater/Perform Arts Ctr
Head, Min/Multicult Stu Affairs
Cooperative Ed Program Coord
Head, Campus Ministries
Head, Women's Center
Campus Chaplain
Deputy Head, Stu Admissions
Stu Admissions Counselor
Head, Campus Grad Admissions
Student Career Counselor
Deputy Head, Stu Financial Aid
Stu Financial Aid Counselor
Deputy Head, Stu Housing
Stu Housing, Admin Ops Officer
Stu Housing, Res Life Officer
Stu Res Hall Mgr (R&B incl)
Stu Res Hall Mgr (R&B not incl)
Deputy Head, Stu Activities
Head, Campus Rec/ Intramurals
Stu Activities Officer
Deputy Head, Campus Rec/Intram
Deputy Head, Campus Stu Union
Campus Rec/Intramural Coord
Deputy Head, Stu Counseling
Stu Counseling Psychologist
Student Counselor
Assoc Registrar
Assist Registrar
Staff Attorney
HR Generalist
HR Generalist, Sr

HR Class & Comp Specialist
HR Class & Comp Specialist, Sr
HR Class & Comp Unit Supervisor
HR Benefits Specialist
HR Benefits Specialist, Sr
HR Benefits Unit Supervisor
HR Employment Specialist
HR Employment Specialist, Sr
HR Employment Unit Supervisor
HR Employee Relatns Specialist
HR Employee Rel Specialist, Sr
HR Employee Rel Unit Supervisor
Head, Campus Labor Relations
Head, Campus Disability Svs
Disability Services Coord
Disability Services Advisor
Deputy Head, Campus AA/EEO
Affirm Action/EEO Specialist
Head, Title III Program
Title IX Coord
Training/Org Develop Specialist
Head, Athletics Compliance
Deputy Head, Instit Research
Deputy Controller
Deputy Bursar
Accountant
Accountant, Sr
Head, Accounting (not CAO)
Collections Supervisor
Accounting Unit Supervisor
Head Cashier
Auditor
Auditor, Sr
Budget Analyst
Budget Analyst, Sr
Budget Unit Supervisor/Mgr
Deputy Head, Budget
Head, Athletics Fin & Business
Contract and Grants Specialist
Restricted Funds Accountant
Deputy Head, Purc/Materials Mgt
Materials Management Buyer
Materials Management Buyer, Sr
Print Shop Supervisor
Inventory Mgr
Deputy Head, Bookstore
Dept Business Mgr (Small Unit)
Dept Business Mgr (Large Unit)
Ticket Mgr
Head of Develop, College/Div
Annual Giving Officer, Entry
Annual Giving Officer – Sr
Major Gift Officer, Entry
Major Gift Officer, Sr
Planned Giving Officer, Entry
Planned Giving Officer, Sr
Head, Athletics Develop
Alumni Rel Officer, Entry Level
Alumni Rel Officer, Sr Level
Head, Church Relations
Advanc Svs, Prospect Researcher
Public Info Specialist
Head, College/University Press
Deputy Head, Campus Pubs
Head, Campus Info Office
Head, Campus News Bureau/Srvc
Television Producer/Director
Television Program Mgr
Television Engineer, Sr
FM Radio Station Mgr
TV Station Mgr
Head, Campus Conferences
Event Coord
Campus Power Plant Mgr
Mgr, Building Maint Trades
Facilities Utilization Planner
Architect
Landscape Architect
Engineer, Constr Projects Coord
Engineer, Facilities Mech Sys
Engineer, Electrical/Electronic
Engineer, Mechanical
Engineer, Res Proj Instrumntatn
Engineer, Electr/Electronic, Sr
Engineer, Mechanical, Sr
Environ Hlth/Safety Specialist
Safety Officer
Head, Athletics Operations
Child Care Site Director
Farm Mgr
Textbook Mgr
Deputy Head, IT Acad Computing
Deputy Head, IT Admin Computing
Head, IT Enterprise Data Center
Head, IT User Services Director
Head, IT Info Management
IT Principal Systems Analyst
IT Auditor
IT Auditor, Sr
IT Programmer Analyst
IT Programmer Analyst, Sr
IT Programmer Analyst, Superv
IT Campus Web Master
IT Web Designer /Developer
IT Project Mgr
IT Database Administrator
IT Data Administrator
IT Principal Database Admin
IT Client Support Specialist
IT Help Desk Specialist/Techn
IT Help Desk Mgr
IT Email Administrator
IT Network Engineer
IT Network Administrator
IT Network Operations Mgr
IT Systems Programmer
IT Systems Programmer, Sr
IT Systems Programmer, Superv
IT Systems Administrator
IT Research Computer Specialist
IT Security Analyst/Engineer
IT TeleComms Mgr
Physical Sci, Research Assist
Physical Sci, Research Assoc
Physical Sci, Research Scholar
Physical Sci, Sr Res Scholar
Physical Sci, Princ Res Scholar
Social Sci, Research Assist
Social Sci, Research Assoc
Social Sci, Research Scholar
Social Sci, Sr Res Scholar
Soc Sci, Principal Res Scholar
Medical Sci, Research Assist
Medical Sci, Research Assoc
Medical Sci, Research Scholar
Medical Sci, Sr Res Scholar
Med Sci, Principal Res Scholar
Life Sci, Research Assist
Life Sci, Research Assoc
Life Sciences, Research Scholar
Life Sci, Sr Research Scholar
Life Sci, Principal Res Scholar
Lab Coord-physical sciences
Lab Coord-life sciences
Head, Community Services
Sr Technology Licensing Officer
Staff Physician
Nurse Practitioner
Staff Nurse
Clinical Research Nurse
Pharmacist, Student Health
Veterinarian
Animal Care Mgr
Dietetic/Nutrition Professional
Head, Environ Sustainabilit

Appendix E: Efficiency Strategies Used at Virginia Institutions

Virginia institutions use a number of efficiency strategies related to support functions. Some are commonly recommended in higher education consultant reports, while others are more institution-specific. Staff from Virginia institutions indicated which efficiency strategies they use in a questionnaire and during interviews with JLARC staff.

Efficiency strategies recommended in consultant reports

JLARC staff reviewed numerous studies conducted by higher education consultants on the efficiency of support functions at institutions nationwide. The most common support functions reviewed in these studies were: procurement, IT, and facilities operations and maintenance. Several strategies pertaining to these functions were widely-recommended across studies. JLARC staff compiled a list of these strategies and asked Virginia institutions to complete a questionnaire indicating which, if any, of these strategies they currently use to improve the efficiency of their procurement, IT, or facilities functions.

TABLE E-1
Efficiency strategies for procurement

Efficiency strategy	Strategic sourcing	Limit variety of products	Institution-wide contracts	Use of E-procurement	Cooperative procurement	Centralize staff
Primary goals of strategy	Formally manage supply chain on an ongoing basis	Limit fragmentation of spending on similar products	Achieve better pricing and streamline future purchasing	Reduce administrative burden of paper-based transactions	Consolidate spending and achieve economies of scale	Minimize unnecessary duplication of effort and personnel costs
CNU		✓	✓	✓	✓	✓
CWM			✓	✓	✓	✓
GMU	✓		✓	✓	✓	✓
JMU	✓	✓	✓	✓	✓	✓
LU	✓	✓	✓	✓	✓	✓
NSU		✓	✓	✓	✓	✓
ODU	✓	✓	✓	✓	✓	✓
RU		✓	✓	✓	✓	✓
UMW	✓	✓	✓	✓	✓	✓
UVA	✓			✓	✓	✓
UVA-W	✓	✓	✓	✓	✓	✓
VCU		✓	✓	✓	✓	✓
VMI	✓	✓	✓	✓	✓	✓
VSU	✓	✓	✓	✓	✓	✓
VT	✓	✓	✓	✓	✓	✓

Source: JLARC staff analysis of data provided by staff at Virginia institutions.

TABLE E-2
Efficiency strategies for IT

Efficiency strategy	**Limit variety of IT hardware and software**	**Virtualize servers**	**Co-locate servers**	**Centralize staff**
Primary goals of strategy	Minimize acquisition and support costs	Minimize hardware needs and support costs	Minimize space requirements and support costs	Minimize unnecessary duplication of effort and personnel costs
CNU	◓	◓	◓	◓
CWM	◓	◓	◓	◓
GMU	◒	◒	○	○
JMU	◓	◓	◓	◓
LU	◓	◓	◓	◓
NSU	◓	○	◓	◓
ODU	◓	◓	◓	◓
RU	◓	◓	◓	◓
UMW	◓	◓	◓	◓
UVA	◒	◒	◒	◒
UVA-W	◓	○	◓	◓
VCU	◓	◓	◓	◒
VMI	◓	◓	◓	◓
VSU	◓	◓	◓	◓
VT	◒	◒	◒	◒

Key	◓ Fully or mostly implemented	◒ Partially Implemented	○ Not Implemented

Source: JLARC staff analysis of data provided by staff at Virginia institutions.
Note: The degree to which institutions reviewed departmental laptop purchases was used to gauge the extent to which the institution limits the diversity of IT hardware at the institution. "Virtualizing" servers involves hosting multiple "virtual" servers on each physical server.

TABLE E-3
Efficiency strategies for facilities operations and maintenance

Efficiency strategy	Monitor energy efficiency	Use zone maintenance	Use space management system	Centralize staff
Primary goals of strategy	Evaluate data to determine usage patterns and opportunities for improvements	Assign employees to zones to reduce travel costs and time wasted	Maximize space utilization through electronic system	Minimize unnecessary duplication of effort and personnel costs
CNU				✓
CWM	✓	✓		✓
GMU	✓	✓	✓	✓
JMU	✓	✓	✓	✓
LU	✓	✓		✓
NSU	✓			✓
ODU	✓	✓	✓	✓
RU	✓	✓	✓	✓
UMW	✓	✓		✓
UVA	✓	✓	✓	
UVA-W	✓	✓		✓
VCU	✓	✓	✓	✓
VMI	✓	✓		✓
VSU	✓	✓		✓
VT	✓	✓	✓	✓

Source: JLARC staff analysis of data provided by staff at Virginia institutions.
Note: NSU staff reported partial use of a zone maintenance strategy and an electronic space utilization system.

Virginia institutions use other strategies to improve the efficiency of support functions

In addition to the efficiency strategies that are widely recommended in the research literature, Virginia institutions report using several other strategies to improve the efficiency of their support functions. Although these strategies may not be beneficial to implement at all institutions, they are informative to institutions that currently take a different approach.

Facilities operations and maintenance

- Employ a number of maintenance staff who are capable in multiple trades or "generalists" to reduce overall staffing levels
- Hire a sustainability coordinator to look at opportunities to reduce costs through recycling, energy management, etc.
- Meter electricity, heating, and cooling energy usage at the facility level with sub-meters
- Consolidate utilized space into several facilities to reduce energy consumption during low volume periods (e.g., night, summer, academic breaks)
- Fully or partially outsource operations and maintenance tasks when private companies can provide low-cost services at a sufficient quality level
- Implement a facilities inspection program to identify and catalog maintenance deficiencies in buildings and infrastructure in order to prioritize work and identify problems before they become emergencies
- Use alternative energy sources, such as biomass or steam to reduce energy costs and improve efficiency
- Rent facilities out for a fee when not in use for academic purposes, such as for summer camps, conferences, etc.
- Outsource costly maintenance equipment or share it with auxiliaries such as athletics to avoid costly purchases
- Install card swipe access on buildings to provide greater security and efficiency in building maintenance
- Use utility carts instead of full-sized vehicles and trucks to address operations and maintenance issues around campus
- Install occupancy censors in facilities to minimize energy consumption when they are not in use
- Use energy efficient technologies such as energy efficient light bulbs and low-flow toilets to reduce consumption levels
- Have work order management system that is automated and details what materials were used and how long the repair took
- Consolidate energy management systems centrally
- Work employees in shifts so tasks can be completed at the most efficient times (e.g., custodial at night)

Other

- Adopt responsibility center management model to improve efficiency by providing departments and/or colleges with responsibility for revenues and costs associated with their operations
- Create internal initiative to perform program reviews of support functions to improve service delivery and identify opportunities for efficiencies
- Hire consulting firm to conduct review of support functions and opportunities for efficiencies
- Conduct customer satisfaction surveys with students, faculty, and staff to determine where services can be made more efficient and effective
- Hire student workers to provide employment for students and low-cost labor for institutions

Appendix F: Support Functions That Virginia Institutions Outsource

Outsourcing is a common strategy for increasing the efficiency of support functions at higher education institutions. According to institutional staff, not all functions can be provided at a lower cost or higher quality by being outsourced. However, most institutions have identified several functions where outsourcing is cost-efficient and provides sufficient quality.

TABLE F-1
Outsourced functions at Virginia institutions

Outsourced functions at Virginia institutions

Institution	Auxiliary	Facilities	IT	HR/Finance	Other
CNU	• Bookstore • Health services • Vending • Laundry • Copier services (partial)	• Grounds maintenance (partial) • Other maintenance (e.g., elevator testing)	• Cloud storage • Email • Learning management systems • Emergency alert system		• Security (partial)
CWM	• Dining • Bookstore	• Grounds maintenance (partial) • Custodial			
GMU	• Dining	• Housekeeping • Grounds maintenance (partial) • Other maintenance (e.g. generator maintenance) • Renovation	• Email • Institutional portal • Web content • Various management systems	• State income tax filing	• Architectural & engineering services (partial) • Shuttle bus • Patriot Center operations and management • Mail services • Security (partial)
JMU	• Dining • Bookstore • Vending • Laundry		• Admissions software • Student email	• Electronic billing for students • Check writing	• Mail services • Diploma services
LU	• Dining • Bookstore • Vending	• Custodial	• Student network services • Bandwidth management		• Marketing for alumni relations

Outsourced functions at Virginia institutions

Institution	Auxiliary	Facilities	IT	HR/Finance	Other
NSU	• Dining • Bookstore • Laundry • Student health services • Vending	• Architectural/engineering services • Construction/maintenance (partial) • Elevator maintenance			• Security (partial) • Copier services
ODU	• Dining • Bookstore • Vending • laundry	• Grounds maintenance for off-site facilities	• IT help desk • Academic advising software • Cloud storage • Student email • Telecommunications	• Financial aid call center	• Tactical service programs • Conference service management
RU	• Dining • Bookstore • Vending • Laundry • Student health		• Cloud storage • Management system • Student email • Tutoring software		• Counseling • Copier services
UMW	• Dining • Vending • Laundry	• Custodial (summer and new buildings) • Equipment and elevator maintenance • Maintenance • Grounds maintenance • Snow removal • Architect/engineering services	• Information screens on campus • Document storage • Student internet, video, and TV		• Security • Mail services • Copy/duplicating services
UVA	• Dining	• Maintenance (partial) • Construction (e.g., painting, flooring)	• IT helpdesk • Student email • Cloud storage • Various management systems		• Mail services • Autopool
UVA-W	• Dining • Student health	• Elevator maintenance (use UVA)			

Outsourced functions at Virginia institutions

Institution	Auxiliary	Facilities	IT	HR/Finance	Other
VCU	• Dining • Bookstore • Vending • Laundry	• Plant operations • Custodial • Maintenance	• IT help desk (at night) • Cloud storage		• Security • Transportation
VMI	• Dining • Bookstore	• Capital project inspection and management • Grounds maintenance • Other maintenance (e.g., HVAC, elevator repair)	• Email • Learning management system		• Copier services • Waste collection • Water services
VSU	• Dining	• Facilities operations and maintenance (full) • Custodial			• Publications for admissions
VT	• Vending • Laundry	• Renovation • Housekeeping (partial) • Building automation • Other maintenance (e.g., HVAC, elevator repair)	• Cloud storage • Student email		• Security (partial) • Copier services • Transit service • Hotel and conference center management

Appendix G: Agency Responses

As part of an extensive validation process, state agencies and other entities involved in a JLARC assessment are given the opportunity to comment on an exposure draft of the report. JLARC staff provided an exposure draft of this report to the Secretary of Education and the following state agencies and institutions:

- Department of General Services
- State Council of Higher Education for Virginia
- Virginia Information Technologies Agency
- Christopher Newport University
- College of William and Mary
- George Mason University
- James Madison University
- Longwood University
- Norfolk State University
- Old Dominion University
- Radford University
- University of Mary Washington
- University of Virginia
- University of Virginia – Wise
- Virginia Commonwealth University
- Virginia Military Institute
- Virginia State University
- Virginia Tech

Appropriate corrections resulting from technical and substantive comments have been made in this version of the report.

This appendix includes written response letters provided by:

- Department of General Services
- Virginia Information Technologies Agency
- George Mason University
- James Madison University
- University of Virginia
- Virginia Commonwealth University
- Virginia Military Institute
- Virginia Tech

COMMONWEALTH of VIRGINIA

Department of General Services

Richard F. Sliwoski, P.E.
Director

Joseph F. Damico
Deputy Director

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October 7, 2014

Mr. Hal E. Greer
Director
Joint Legislative Audit and Review Commission
201 North 9th Street
General Assembly Building, Suite 1100
Richmond, VA 23219

Dear Mr. Greer:

Thank you for the opportunity to review Chapters 4 and 5 in JLARC's exposure draft on the *Review of Support Costs and Staffing at Virginia's Public Higher Education Institutions*. The Department of General Services (DGS) appreciates JLARC's consideration of our previously submitted comments and is submitting this letter for inclusion in to the final report.

DGS understands that JLARC was specifically directed in 2012 by House Resolution No. 108 to study the cost efficiency of the Commonwealth's institutions of higher education and identify opportunities to reduce the cost of public higher education in Virginia. While JLARC's scope in this study is limited to four-year institutions of public higher education, DGS believes that when studying procurement, including the use of cooperatives, it is imperative to look at the Commonwealth as a whole. As a result of the Resolutions scope, JLARC's recommendations are at the micro level and do not address the interest of the citizen, tax payer expenses and savings at the macro level, which would be include the potential ability to reduce the cost of public higher education.

This study identifies that the institutions believe there could be increased cost savings by better leveraging cooperative contracts across institutions with autonomy. JLARC points out that those institutions are in the process of establishing a procurement consortium that will serve as a strategic sourcing initiative in place of the cooperative contracts that would have been established in the state budget. We understand that this consortium will have its own staff and that the consortium will be self-funded by the participating institutions.

DGS does not believe that this consortium needs to be established. Cost savings through any strategic procurement process and across any enterprise activity – public or private – is universally achieved through two fundamental and professionally recognized ways: a) doing

more with less, and b) aggregating the demand of goods and services across an enterprise, which is then leveraged to obtain best pricing, quality, and service.

Creating a higher education procurement consortium when the Commonwealth's central procurement agencies already exist, goes against both of these strategic principles for reducing costs, and further facilitates devolution of strategic procurement in the Commonwealth, thereby resulting in higher costs for all Commonwealth public bodies – which includes higher education. DGS supports institutions granted autonomy establishing cooperative contracts in their area of expertise for commodities that are uniquely related to higher education, including those under DGS purview, as long as the resulting contracts contain all of the appropriate mandatory terms required.

We request that institutions utilize DGS and Virginia Information Technologies Agency (VITA) to establish the needed cooperative contracts. By doing this the institutions would be in compliance with their management agreements and memoranda of understanding with the intuitions "commitment to statewide contracts" and "leveraged buying power of the Commonwealth as a whole". The referenced language can be found in Chapters 933 and 943 of the 2006 *Acts of Assembly*, Chapters 594 and 616 of the 2008 *Acts of Assembly,* Chapters 824 and 829 of the 2008 *Acts of Assembly.* In instances where institutions determine that a statewide contract does not meet their needs they should work collaboratively with DGS and VITA to ensure that the future contracts incorporate these needs.

There exist cost implications for institutions and the vendor community as a result of multiple procurement laws and regulations for entities in the Commonwealth (i.e., a set of rules and procedures for higher education and a different set for those subject to the VPPA). Multiple sets of procedures and rules for various state agencies/institutions could actually lead to higher procurement costs for higher education due to private sector confusion over "which rules apply and when." While acknowledging this impact is difficult to quantify, the reality that there are varying rules/procurement principles across the Commonwealth has the potential to increase costs state-wide including higher education. We recommend that any best practices implemented at institutions that can benefit other public bodies, and could reduce confusion for the vendor community and, be identified and reflected in procurement law/rules apply to all agencies/institutions.

Although capital outlay autonomy authority is identified in Chapter 1 and is discussed in Chapter 5, capital outlay and construction does not appear to be addressed in Chapter 4. DGS believes that given the differences between construction and goods and services procurements, that construction be excluded when recommendations associated with cooperative procurements are implemented.

Specific Comments
Graph of level Autonomy: DGS is concerned that the graph conveys that Christopher Newport University (CNU) has autonomy in Procurement and Information Technology. We feel the

footnote is not sufficient for readers to understand that CNU does not have autonomy in Procurement.

Chapter 4 Summary: DGS agrees that the state should explore ways to alleviate the fragmented buying power among state agencies and Institutions, including Institutions with autonomy. We agree that this will likely reduce costs.

Chapter 4 Cooperative contracts used by Virginia Institutions may not maximize costs savings because buying power is not aggregated across the Schools: There would be even greater savings realized if it was negotiated on enterprise level as opposed to just Institutions with autonomy.

Chapter 4 Institutions should further aggregate buying power through cooperative procurement efforts: First paragraph states that DPS lacks the expertise in specialized areas of higher education procurement. As stated above, DGS has always supported that Institutions should have the authority to create cooperative procurements that are uniquely used by higher education.

Chapter 4 Recommendation 4 and: DGS supports the recommendation that funds be made available for a consultant to review cooperative procurements that is inclusive of higher education, DGS and VITA, but believes it should be facilitated by a neutral party because any recommendations, if implemented, will have operational and fiscal implications on institutions and all state public bodies. DGS would recommend that the Department of Planning and Budget, Division on Best Management Practices be directed to conduct the study.

Chapter 5 Autonomy in capital outlay has given institutions flexibility in planning and building new facilities but could impact long-term costs: The report indicates that Institutions report that capital outlay autonomy gives them greater flexibility to plan and build their non-general fund facilities more efficiently and at a lower cost, minimize changes to working drawings of a project, and complete projects more quickly…" DGS is concerned with the validity of these types of statements, projects may be "lower cost," but the reduced cost could potentially be a function of misleading factors, including the institutions being more restrained with their funds as opposed to state funds. Based on the extensive DGS, BCOM experience with the review and permitting of working drawings, "minimizing changes to working drawings" implies that the work is proceeding with incomplete documents, which would likely result in change orders and increased costs.

Sincerely,

Richard F. Sliwoski, P. E.

COMMONWEALTH of VIRGINIA

Samuel A. Nixon, Jr.
CIO of the Commonwealth
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711

September 30, 2014

Mr. Hal E. Greer
Director
Joint Legislative Audit and Review Commission (JLARC)
Suite 1100, General Assembly Building
Richmond Virginia 23219

Dear Mr. Greer:

Thank you for the opportunity to comment on the exposure draft of *Support Costs & Staffing at Virginia's Higher Education Institutions*. On behalf of the staff at Virginia Information Technologies Agency (VITA), I want to thank Ms. Miller for her thoroughness and professionalism throughout the study.

As the report acknowledges, under the Restructuring Act most of Virginia's higher education institutions have been granted autonomy for the procurement and provision of information technology (IT) and telecommunications goods and services. I am pleased, however, that institutions reported saving money by using VITA's statewide contracts, and VITA stands ready to further assist the institutions. Additional use of VITA's statewide contracts by the institutions would further leverage the Commonwealth's buying power, thereby benefitting all agencies. I also note that many of the best practices in IT services identified by JLARC, including standardization and centralization, have been implemented by VITA on behalf of executive branch agencies. As institutions expand their use of these practices, VITA also stands ready to identify new opportunities to leverage the Commonwealth's buying power through statewide contracts and other collaborative endeavors.

I again thank you for the opportunity to respond to this draft report, and I look forward to continuing our productive working relationship.

Sincerely,

Samuel A. Nixon, Jr.

c: The Honorable Karen R. Jackson, Secretary of Technology

GEORGE MASON UNIVERSITY

Senior Vice President

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October 3, 2014

Mr. Hal E. Greer, Director
Joint Legislative Audit and Review Commission
201 North 9th Street
General Assembly Building, Suite 1100
Richmond, Virginia 23219

Dear Mr. Greer:

We have received the draft report, *Support Costs & Staffing at Virginia's Higher Education Institutions,* and would like to take this opportunity to thank you and the JLARC staff for giving George Mason University the opportunity to respond and address some of the issues in the draft report.

We appreciate the hard work evidenced by the report and find strengths in a number of sections, particularly opportunities to better utilize procurement strategies and to perform tasks electronically rather than through paper-based systems which could further reduce costs at the Commonwealth's institutions of higher education. We would like to share some concerns with certain points and provide our comments on other areas found in the report:

Chapter 3 – Use of Supervisors in Support Functions

We are concerned about the conclusions made in this report as they relate to 'narrow spans of control'. Wage employees represent over 15% of George Mason's workforce. If we remove employees that are Instructional Faculty, Research Faculty, and Graduate Assistants who teach or who work on research, then that percentage increases to 22% of the university's total workforce. We feel that the exclusion of wage employees who are direct reports to supervisors in support function, leads to a misrepresentation of the span of control of our supervisors. We support continuous reviews of our organizational structures along with open dialog with our Board of Visitors; however, we believe that all employees should be included when conducting these types of analyses.

Chapter 4 – Managing Costs of Procurement

The draft report highlights George Mason's use of staff time to identify similar purchases from multiple departments that were aggregated and purchased through one contract. This initiative did result in true savings. We would like to thank JLARC for using that data and we will continue to seek creative ways to support the initial costs for other university efficiency initiatives.

Chapter 5 – Managing Costs of Other Support Functions

We support this recommendation and look forward to working with other agencies of the Commonwealth of Virginia to help manage costs for support functions. Specifically, performing tasks electronically rather than through paper-based systems that could result in real savings. One example would be allowing institutions of higher education the ability to upload data electronically to DHRM and VRS which would allow George Mason the ability to eliminate time consuming data entry requirements.

George Mason University appreciates the opportunity to participate in this process. The Commonwealth's institutions of higher education have been a successful investment by Virginia's citizens and our students. We are fully committed to continuing the delivery of a quality higher education experience in an efficient and transparent manner.

Very truly yours,

Jennifer (J.J.) Wagner Davis
Senior Vice President for Administration and Finance

JAMES MADISON UNIVERSITY

October 3, 2014

Mr. Hal E. Greer
Director
Joint Legislative Audit and Review Commission
201 North 9th Street
General Assembly Building, Suite 1100
Richmond, Virginia 23219

Dear Mr. Greer:

Thank you for this opportunity to submit a formal written response to the recent draft *Support Costs and Staffing at Virginia's Higher Education Institutions* report. We hope to offer information that may help clarify the reporting of the spending on support functions and the use of supervisors.

Spending on Support Functions

- We would highlight the report's summary finding in Chapter 1 that supports spending across all Virginia institutions represents a modest portion of total spending and the number of staff has actually decreased over time. At James Madison University (JMU), Instruction and Academic Support constituted 69% of total Education & General expenditures in 2012-2013 with institutional support at 13%. Instruction and Academic Support spending is a priority for the University.
- The report acknowledges that the comparison groups used based on the Carnegie Classification system are broad and some steps were taken to further refine the comparison group for individual institutions. JMU is noted in Appendix B, Table A-3 as being in the Large Master's classification. It should be noted that in the Carnegie Classification listing for JMU it states that the university is "within 5 of the boundary" of moving into the Doctorate-granting universities High Research category which would explain the higher salary variances of the JMU administrator positions with the report's comparison group. This notation is based on data from 2008-2010, and our doctoral programs have continued to grow since that time.
- A grouping from the Carnegie Classification listings that focuses on Large Public institutions with freshman classes greater than 2,000 offers a group of both Large Masters and Doctoral-granting institutions. If one adds a variable representing quality (i.e., six-

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year graduation rate), James Madison University, along with Miami University of Ohio, is at the top of this listing with an 80% graduation rate. The graduation rates range from 28% to 80%. This emphasizes the extent of breadth among these institutions in trying to identify an appropriate comparison group.

- For comparison purposes, it has been a generally acceptable practice for Virginia colleges and universities to rely on the State Council for Higher Education in Virginia (SCHEV) peer group. Most notably, it has been used to establish salary targets for faculty. When compared to the SCHEV peer group, JMU administrator salaries consistently fall below the peer group salary averages.
- The salary expenditures for administrators should be considered in concert with the size of administrative staff and the years of service of incumbents. JMU has fewer senior administrative staff than UVA, VT, GMU, W&M, VCU, ODU, Longwood and UMW. Thus, each administrator has a broader span of responsibility that may warrant a differential salary. Also, incumbents with more years at an institution may have differential salaries due to seniority.
- Finally, we would note that the dichotomy of administrative support and academic/instructional activity is not accurate as there is a more complex relationship. Many administrative and support personnel also instruct classes or in other ways participate directly in student instruction.

Use of Supervisors

- The analysis relied on only three out-of-state schools who have finalized span of control analyses for comparison (a fourth is just beginning its span analysis). It was noted that these schools spend more and employ more staff than their Carnegie group median.
- It was reported that only three Virginia schools claimed that they used the promotion of employees and establishment of new departments to enhance compensation. Like many other Virginia state agencies, Virginia's colleges and universities are feeling the internal pressures of multiple years without salary increases.

  Higher Education differs from most non-higher education organizations in that it cannot always capitalize on economies of scale, due to the incredibly disparate departments that exist on campuses. These departments require employees with special skills that are not transferable across departmental lines. Therefore, the use of and need for supervisors is necessarily unit-specific. In smaller (and frequently specialized) units with fewer staff, one would expect lower supervisor-to-staff ratios. Due to this structural uniqueness, as

noted in the report, there exist relatively small spans of control and working supervisors within highly complex and specialized departments.

- Reorganizing departments to enhance span of control adds little or no cost savings unless positions are eliminated. Unfortunately, we have limited control over our ability to offer early retirement and given that most if not all of our supervisors with one or two direct reports are also skilled working supervisors, eliminating any of them will force reduced services, lower student satisfaction, and force the potential erosion of competitive advantage.
- These facts should be considered in light of the span of control recommendations proffered.

Thank you again for the opportunity to review and provide comments on the draft report. We appreciate the dedication and work of your staff during the research and development of the report.

Sincerely,

Charles King
Senior Vice President

CWK/dls:pjm

UNIVERSITY of VIRGINIA
OFFICE OF THE VICE PRESIDENT FOR MANAGEMENT AND BUDGET

October 3, 2014

Mr. Hal E. Greer
Director, Joint Legislative Audit and Review Commission
General Assembly Building, Suite 1100
201 North 9th Street
Richmond, Virginia 23219

Dear Hal:

Thank you for providing the University of Virginia (U.Va.) an opportunity to review and comment on the draft report *Support Costs and Staffing at Virginia's Higher Education Institutions*. Per your letter of September 19, 2014, we submitted technical comments and corrections on October 1. This letter will address other substantive issues about the operation of support functions at U.Va.

The choice of comparators constitutes potential source of bias in any study. Before addressing specifics in the report, we would like to highlight a limitation of using the Carnegie very high research institution (RU/VH) classification as U.Va.'s peer group. While we acknowledge that the University is classified in this Carnegie group, it includes many institutions to which U.Va. does not typically compare itself. For example, North Dakota State University, a Carnegie RU/VH, is a land grant institution offering various undergraduate and graduate degree programs not offered at U.Va. such as agribusiness, horticulture, and zoology, but it does not have a school of medicine. The more appropriate peer group for U.Va., and a group against which we benchmark various activities, is the Association of American Universities (AAU) which is a subset of the Carnegie RU/VH classification and includes 60 public and private research institutions that are more similar to U.Va. Criteria for membership in the AAU includes faculty distinction, researching funding, and Ph.D. and post-doctoral student productivity. These criteria are then normalized by institutional size. For example, your data indicate that U.Va. pays administrators and deans approximately 30% more than the average of our Carnegie group. When we compare administrators' salaries to AAU institutions, however, they rank at the 50th percentile and deans' salaries are at the 72nd percentile.

Quality

The University would like to provide additional context about support staffing and expenditures, particularly as it relates to quality. Your report analyzes expenditures and staffing levels compared with other institutions, but has few references to the quality of the institution, the services it provides, or the outcomes it delivers. Improving the efficient and effective use of all resources is a top priority of the University. It represents one of five pillars in our strategic plan. U.Va. has been a public-sector leader in achieving efficiencies, streamlining operations, and minimizing institutional costs while

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preserving the core academic mission. U.Va. is a national leader in retention and graduation rates, with a first-year undergraduate retention rate of 97% and a six-year graduation rate of 93%. We have the highest graduation rate among African-American students. Our academic quality has been recognized by the *U.S. News and World Report (USNWR)* and others over the years. In the most recent *USNWR* rankings, U.Va. is the second best public institution in the country and 59th in terms of financial resources. No other institution in the top 25 ranked lower than 38th in financial resources, and only six other schools in the top 50 ranked lower than U.Va. While these ratings show that U.Va. delivers a high-quality education while spending less per student than most institutions, we recognize that there are areas in which we can achieve greater efficiencies without sacrificing academic quality. Your report, however, gives us little recognition for the unique correlation of excellence and affordability we offer.

Organizational Excellence

To make further progress in targeting greater efficiencies while maintaining a high standard of academic excellence, the University established the Organizational Excellence program in 2013 to enhance organizational capacity across academic and administrative service areas, and thereby advance excellence in our core missions of education, research and scholarship and facilitate the realization of strategic priorities. The program builds on an effort we called Process Simplification begun in 1994, and seeks opportunities to enhance the University's stewardship of all resources – from financial to facilities to technological to human resources – and align processes, technology, and people to support institutional priorities. As part of this effort, U.Va. is engaged in a benchmarking study of our administrative services structure and delivery in six major functions. The findings have provided a comprehensive, current state assessment and are being leveraged to identify opportunities to improve the use of our existing resources. These targeted Organizational Excellence efforts will result in redesigned, streamlined processes; enhanced use of technology; and revised service delivery models.

Administrative Compensation

U.Va. competes for talent with not only the public and private higher education sector, but also with other industries across the country. Particularly in STEM areas, a Commonwealth priority, we compete with private industry, national laboratories, and hospitals, as well as other universities. Further, Charlottesville consistently has the lowest unemployment rates in the Commonwealth of Virginia. Over the last year, the unemployment rate in Charlottesville has fluctuated between 3.7% and 4.9%. In June 2014, the unemployment rate was 3.9% in Charlottesville compared to the 6.3% rate in the U.S. Therefore, given the tight labor market conditions in the Central Virginia area it is essential that U.Va. offer competitive salary rates in order to attract qualified employees.

U.Va. has implemented a merit-based compensation program based on multiple survey sources, including industry-specific sources as appropriate, which has allowed us to be competitive in these markets and recruit and retain the most talented employees. To adhere to best practice compensation administration, we seek to have a minimum of two, and preferably three, survey sources for each position. These market-based pay ranges are used to determine salaries for all employees at the University with the exception of those in the state classified system. This system has allowed us to make progress in offering competitive compensation packages to our employees, but we still have room for improvement. Our goal is for staff salaries to be at 50% of the market range, or the market average, and we are currently at 41%. In other words, on average there exists a 9% lag in staff salaries for similar work in the market.

Support Staffing Levels

The use of staffing per student FTE levels can be a misleading indicator. As we discussed during your visit to U.Va. there are circumstances surrounding the University's staffing levels that should be explicitly acknowledged. Staffing covered in this report supports three separate entities beyond the Academic Division in varying ways – the Medical Center, the College at Wise, and the Southwest Virginia Higher Education Center (SWVaHEC). We receive reimbursement for services provided to the Medical Center and SWVaHEC so the expenditures reflected are accurate for the Academic Division; however, the staffing levels are higher than would be the case if we were simply supporting the Academic Division. By providing staffing to other educational entities, we make them more efficient.

Moreover, the analysis of the staffing levels using student FTE as the denominator is not appropriate for some activities within the support function. For example, operation and maintenance of the physical plant is typically measured on the basis of gross square feet maintained. U.Va. operates a large physical plant with over 560 buildings, a significant number of which are historic including the World Heritage site. Historic preservation requires specialized personnel that might not be required elsewhere.

U.Va. has a very robust and successful fundraising organization that is supported from private gifts and endowment income and has consistently realized a positive return-on-investment. On average, we raise approximately $9.25 for each dollar we spend on development activities. Gifts and endowment income support nearly 20% of the operating budget and a significant portion of the capital budget. The success of our fundraising efforts requires an investment in people and operating support ($27.3 million in FY2013), an investment that does not cost students or the taxpayers anything. To the contrary, it benefits the Commonwealth. We see this operation growing as the University begins planning for the next capital campaign, and we know we will need to increase our investment in fundraising activities in order to be successful. At the same time, we are restructuring operations to align these efforts behind current institutional priorities and to maximize performance.

Restructuring Authority

We disagree with the conclusion that capital outlay autonomy may increase long-term costs. New facilities increase annual operation and maintenance costs, but each project must be approved by the Board of Visitors. U.Va. prepares an accompanying business plan that justifies the need for the project and clearly demonstrates how construction will be funded and how future maintenance costs will be addressed. The conclusion on page 51 that the "state does not provide funding to cover these increases" is not totally accurate. Although not always consistently, the state has provided the general fund share of the costs for maintenance of new E&G facilities even if those projects were originally paid for with nongeneral funds. Two recent examples include Garrett Hall, which houses the Frank Batten School of Leadership and Public Policy, and the Physical and Life Sciences Research Building.

Governance versus Management

Several of the recommendations on pages v and vi of the report call for specific actions by institutions. These directives appear to be more operational than governance-related. Therefore, we recommend that JLARC consider directing these recommendations to the management of the institutions rather than to the governing boards.

Thank you again for the opportunity to comment on the draft report. Please do not hesitate to contact Colette Sheehy at 434-924-3349 or cc@virginia.edu if you have any questions or need additional information related to our response.

Sincerely,

Patrick D. Hogan
Executive Vice President and Chief Operating Officer

Colette Sheehy
Vice President for Management and Budget

cc: President Teresa A. Sullivan, U.Va.
John Simon, Executive Vice President and Provost, U.Va.

VIRGINIA COMMONWEALTH UNIVERSITY

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October 1, 2014

Mr. Hal E. Greer
Director
Joint Legislative Audit and Review Commission
201 North 9th Street, Suite 1100
General Assembly Building, Capitol Square
Richmond, Virginia 23219

Dear Mr. Greer:

Thank you for providing Virginia Commonwealth University (VCU) an opportunity to review and comment on the draft report Support costs and Staffing at Virginia's Public Higher Education Institutions. We appreciate the time and attention staff of the Joint Legislative Audit and Review Commission (JLARC) spent on this endeavor and the courtesies extended during this process. Per your letter of September 19, 2014, we are submitting a written response to address substantive issues in two areas that we would ask you to include in the final report as part of the appendix. We are not offering any technical corrections. Our comments concern conclusions and recommendations in two areas: span of control and procurement.

Span of Control

We believe the conclusions drawn in the area of span of control are specious and lead to recommendations that could do more harm than good if uniformly applied. A review of the national norms already indicates that VCU and many other Virginia institutions area significantly understaffed. When we met with JLARC staff we explored with them their readings on the "ideal" span of control. We indicated that VCU has a very large percent of working managers due to budget cuts experienced over the years and our management of those through a number of strategic investments in technology and other efficiency initiatives. We provided specific examples of our reduced spans of control, including an instance of one manager who once had 7 employees and was now down to 2. The result isn't that VCU has too many mangers, but rather that we have too few workers. This is borne out by the spending data consistently cited within the report – VCU spends less on support functions than 75 percent of similar public institutions.

While a review of spans of control and organizational structure may provide an opportunity for the president of an institution to dialogue with the board of visitors, Recommendation 3 is not appropriate and could have significant negative consequences. Recommendation 3 would have boards establish minimum numbers of direct reports and targeted spans of control. This could create circumstances in which we had individuals with no knowledge of a function managing functions and would create significant risks to the institution. The Code of Virginia, § 23-50.10 provides for the board appointment of a president to be the chief executive officer of the university – in order for the president to manage the day to day operations of the institution.

Based on the staffing information submitted, conclusions were drawn regarding span of control at VCU. The report states that VCU has a narrow span of control as related to other institutions. Unfortunately, the information submitted to JLARC provides an inconclusive baseline from which to draw conclusions. VCU does not maintain data in the way JLARC staff needed it for their analysis. In order to provide them with some basis for comparison, JLARC staff asked VCU to submit a subset. We submitted a group of data (a portion of Finance & Administration) reflecting 5.5% percent of the total University population (600 out of 10,776). Although VCU does not track the total number of employees who perform support functions, the size of the sample is not reflective of the total population.

In each graph and example provided in the report, VCU is shown as spending less than the majority of institutions – in spite of our mission as a doctoral granting research institution. The implementation of Recommendation 3 and the establishment of arbitrary spans of control at an institution such as VCU could have significant negative consequences.

Procurement

Virginia higher education institutions have successfully utilized cooperative contracts developed at the state, industry, and institutional levels to procure goods and services common within and among institutions. In 1989, Virginia Association of State College and University Purchasing Professionals (VASCUPP*) developed the Colleges and Universities Cooperative Purchasing Group (CUCPG), whose sole mission is to identify cooperative procurement opportunities and establish cooperative contracts. These contracts leverage higher education discounts for unique categories of goods and services, not typically required by the state or available for purchase on a state contract (e.g., scientific research, instructional software). While some overlap may occur between DGS and higher education cooperative contracts, this is not predominant. As such, continued use of higher education cooperative contracts does not reduce DGS's buying power.

VASCUPP Members include:

UVA (Tier III)	RU (Tier II)
VA Tech (Tier III)	VMI (Tier II)
Wm & Mary (Tier III)	ODU (Tier II)
VCU (Tier III)	LU (Associate Member)
JMU (Tier II)	UMW (Associate Member)

VCU's current procurement practices include researching existing and available procurement contracts (DGS, NAEP, E&I, TCPN, GSA (Federal), Novation, State Contracts, US Communities, VASCUPP, etc.) or develop new contracts on an as needed basis, which negates the need for a Code amendment as recommended in Recommendation 5.

To be competitive and fiscally responsible, higher education institutions must have the flexibility to select the procurement method that most favorably drives costs down *and* favorably supports the fundamental mission of the institution. Higher education institutions have worked diligently and creatively to find ways to restrict spending and contain costs.

Overly large cooperative contracts tend to minimize opportunities for SWaM and Virginia vendors and run counter to other state business initiatives. For example, Executive Order 20 recommended that procurements be unbundled into smaller segments and "microbusiness" categories be developed so that SWaM vendors have a more reasonable opportunity to compete for state business.

VCU's Management Agreement has afforded numerous opportunities to partner with city and local government, which has resulted in the revitalization of the downtown Richmond. If requirements are bundled and cooperative contracts are required for use, local vendors will receive less benefit and jobs may be impacted.

Recommendations 6 and 7 both direct staff to create more policies and to do more tracking and reporting. While additional measures could be put into place to encourage or increase the use of institution-wide contracts, developing the necessary monitoring and compliance tools under directives such as this are costly and time consuming to develop and maintain. Further, as a large research institution, many items purchased are for custom applications involving a wide variety of unique requirements and specialty vendors.

The effort to establish systems to track all purchases made against designated cooperative contracts and any exceptions would be difficult, costly, and time consuming, offsetting efficiencies (i.e., small purchases made via PCard). Should implementation of this recommendation go forward, the need for additional staff, software and reporting capabilities must be considered in the overall cost savings analysis. Although VCU's strategic plan for procurement includes the implementation of a spend analytics tool, many higher education institutions do not currently have the capacity.

Thank you for the opportunity to comment on the draft report. We appreciated the opportunity to work with your staff that had the unenviable task of reviewing a tremendous amount of data from a wide variety of sources. Their analysis was impressive. Please feel free to contact me at 804-828-6116 or wdecatur@vcu.edu if you have any questions or need additional information.

Regards,

William R. Decatur, JD
Senior Vice President
Finance & Administration

c: Dr. Michael Rao
Ms. Pamela Currey

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2 October 2014

Mr. Hal E. Greer
Director
Joint Legislative Audit and Review Commission
201 North 9th Street
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Richmond, Virginia 23219

Dear Mr. Greer:

Thank you for the opportunity to respond to the Exposure Draft of the report ***Support Costs & Staffing at Virginia's Higher Education Institutions***. The VMI administration appreciates the time and effort your staff devoted to this report. The comprehensive report provides thoughtful recommendations for the Commission to consider in its efforts to assist institutions in realizing savings within support functions.

The Institute believes that its spending on support functions is in part attributable to its unique mission. Unlike most, if not all, institutions in its Carnegie classification, VMI has a dual statutory obligation (§23-109) to provide higher education in a military environment. This obligation necessitates a full-time, resident population and a highly structured cadet daily schedule that create an unusual demand on various support functions including academic support services, facilities maintenance and custodial services, laundry and dining services.

Chapter 2, ***Spending on Support Functions***, points out on page 12 that *even though VMI spends more than similar institutions on a dollar basis, it does not allocate a greater proportion of spending to support functions.* The report also notes that the military structure and the requirement that all Cadets live on the VMI Post increase the demand for support services.

Although the report indicates that VMI's senior administrators are paid more than their peers at similar institutions nationwide, it is important to note that VMI has a flat organizational structure and its senior executives have broad spans of control. This structure results in fewer senior executives, but the broader responsibilities are reflected in

higher salaries. VMI believes its senior executives are fewer in number than the comparable positions in similar institutions. For example, VMI does not have a provost or academic department deans. The 15 academic department heads report directly to the Dean of the Faculty. Likewise, VMI's Deputy Superintendent for Finance, Administration and Support oversees 12 functional areas that are typically divided between a vice president of Finance and a vice president of Administration at other institutions.

In assessing the competitiveness of administrator salaries, VMI uses an average of two tables from the CUPA-HR ***Administrators in Higher Education Salary Survey***, table 26 Salary Percentiles – Total Expense Q2 All Institutions ($38.3M - $81.0M) and table 27 Salary Percentiles – Total Expense Q3 All Institutions ($81.0M - $200.1M). VMI's total operating budget for FY 14 was $77.8M. We believe this review provides a better indicator of salary competitiveness than a comparison with the general "all baccalaureate" category.

Thank you again for the opportunity to provide comments on the report.

Sincerely,

J.H. Binford Peay III
General, U.S. Army (Retired)
Superintendent

VirginiaTech

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October 3, 2014

Hal E. Greer
Director
Joint Legislative Audit and Review Commission
201 North 9th Street
General Assembly Building, Suite 1100
Richmond, VA 23219

Dear Mr. Greer:

Virginia Tech appreciates the opportunity to review and provide feedback on the exposure draft of the JLARC *Support Costs and Staffing at Virginia's Higher Education Institutions*. As has been our experience with the prior JLARC reports, we appreciate the professional and cooperative approach taken by the JLARC staff and their commitment to working with us on these important issues. The report presents an exhaustive study of the costs and staffing required to operate the support functions at Virginia higher education institutions.

While the university commends JLARC for its efforts in evaluating this important issue, we believe it is important to provide some additional perspective and clarification on few areas of the report.

Effective support functions are critical to the successful operation of the university and form the backbone for supporting the achievement of the academic, research, and outreach missions of the university. Virginia Tech is focused on delivery of high quality support services while prudently managing the costs for provision of such services. The report findings for Virginia Tech provide compelling testimony to the university's success in meeting that objective. The report cites Virginia Tech as one among six Virginia institutions who are the lowest spenders in their public Carnegie group, spending less than 75 percent of other public institutions. The support spending relative to enrollment has in fact, decreased in the last decade. Further, Virginia Tech is also noted as one among four institutions in Virginia with fewer support staff than similar institution's nationwide. The findings in the report highlight Virginia Tech's conscious and intentional process to allocate the resources towards their highest and best use to maximize the achievement of the academic mission.

The draft report notes that "spending on support functions grew only slightly more than instruction spending between 1991 and 2010, and grew more slowly than instruction spending in the last decade, suggesting that support functions have not been a major driver in the increase in the cost of higher education." Considering the fact that support costs are not the major drivers of the increase in the cost of higher education, we are concerned about the prescriptive nature of some of the recommendations in the report for a series of issues that are not major cost drivers.

Span of Control

We are especially concerned about the recommendations related to span of control. The draft report indicates that savings from reducing the span of control could be in the range of 0.5 percent to 1 percent of operating expenditures. Specifically, the report recommends that "*Boards of Visitors should direct staff to perform comprehensive review of their organization structure, including an analysis of spans of control and a review of staff activities and workload through an internal review or the use of consultant, and to identify opportunities to streamline their organizational structure….*". Recommendation #2 states "*Board of Visitors at all Virginia Institutions should require annual reports on average and median spans of control and the number of supervisors with six or fewer direct reports*." The following comments illustrate Virginia Tech's perspective on the subject:

- The achievement of estimated savings as noted above through reduction in span of control is not clearly articulated in the report. The mere transition from supervisory to non-supervisory roles without some level of reduction in workforce or compensation will not result in savings. Based on the information in the report (as noted on page 1 of this letter) and the university's own analysis of administrative costs, Virginia Tech already operates in a very lean administrative environment. The university has strived to minimize the impact of series of earlier budget reductions on the academic areas. Thus, the support functions had to bear a disproportionate cost of these reductions. In fact, Virginia Tech has experienced a reduction in the size of its support staff over the years. Arbitrary percentage reductions in support staff will have a serious impact on the effectiveness and the quality of services provided by support functions that are already leanly staffed at Virginia Tech which could negatively impact the achievement of the university's mission.

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- The draft report recognized that a large number of supervisors in the support functions are "working" supervisors who have functional responsibilities other than managing employees. In fact, an initial review of the percentage of time spent by Virginia Tech supervisors managing employees' indicates that the supervisors spend approximately 25 percent of the time managing employees. Hence, a significant portion of the

supervisor's time is spent on daily operating activities, consistent with the concept of working supervisors. In summary the "supervisor status," in terms of quantity of employees, is overstated as an issue.

- We question the statement in the report that flattened organization structures necessarily create additional career paths for employees. In fact, the opposite is often the case since the overall set of employees have much fewer opportunities to develop leadership skills and experience in a supervisory role. At Virginia Tech, we have found that having "working supervisors" creates an excellent pathway for succession planning, retention, and providing internal progression opportunities for our high performing employees. We believe that providing leadership and supervisory experience for our employees will, in the long-term, reduce training and recruiting costs and result in a more motivated workforce. In addition, this strategy is vital in meeting the Commonwealth's performance measure of having a very high percentage of promotional opportunities accrue to internal candidates.

Virginia Tech is supportive of conducting an assessment of the university's organizational structure with the aim to streamline its operations for better delivery of support services. However, we are cautious regarding the achievement of any significant savings as a result of a reduction in span of control due to the university's already lean administrative structure.

Salary

The draft report notes that "more than half of the top administrators at VMI, UVA, JMU, and Virginia Tech were paid salaries that were more than 10 percent higher than the base salaries paid at public institutions with the same broad Carnegie group." The comparison of senior administrator salaries at Virginia Tech against the broad Carnegie group is not a valid comparison since the broad Carnegie group includes all doctoral institutions. Virginia Tech competes with the "very high research" institutions and benchmarks its compensation against such institutions. Additionally, during the period of study, a number of senior administrators at Virginia Tech had 20 to 30 or more years of service. It is reasonable that the salaries for administrators with significant experience could be above average.

The university completed an initial comparison of the current salaries of our assistant and associate deans to the CUPA 2013-14 data and determined that more than 60 percent of the assistant and associate academic deans are paid less than the average of the CUPA benchmark salaries. As a result, it is unclear as to why salaries for this category of personnel in the draft report are shown as much higher than the CUPA median totals. The information presented in the report on these specific positions is out of line with our understanding of the university's actual salary data.

Procurement

The draft report includes a recommendation that asks the Boards of Visitors to direct staff to set and enforce policies to maximize the standardization of commonly procured goods, including requirements to use institution-wide contracts. We believe this recommendation can work well for some categories of goods and services, but not others. For example:

- Virginia Tech procurement volume has a large component related to scientific research. Supplies, materials and equipment used in research are often highly specialized and dispersed among suppliers throughout an evolving international marketplace. We believe that the university's mission will be best supported by leaving sufficient latitude for procurement activity in the area of scientific research. Single contracts for specific goods and services cannot always address the wide array of research activities at a major research institution. Further, a procurement approach that is too restrictive could have an adverse impact on our research environment, making Virginia Tech a less desirable institution for leading researchers to want to work and carry out their research programs.

- Standardization can be and is practiced in many support areas, such as facilities, that lend themselves to repeating requirements and term contracts. The University is already exercising this approach when significant savings are likely to occur.

- In a less urban area such as Blacksburg and many other sites where we work around the state, the university's support for economic development and local communities is very important, in terms of supporting jobs in the local economy. An unfortunate impact of a policy of standardization with one vendor for categories of goods and services in such an economic environment is the potential for significant damage to local businesses. Virginia Tech has traditionally been very cognizant of this issue, and the draft report does not address this important issue for Virginia's businesses.

Annual Reporting

The draft report includes two recommendations which require annual reports to the Boards of Visitors. These include a report on the average and median spans of control and the number of supervisors with six or fewer direct reports and a report on all institutional purchases, including small purchases that are exceptions to the institutional policies for standardizing purchases. Virginia Tech's leadership team is managing a wide array of responsibilities and initiatives throughout the year, including many activities that are focused

on maintaining an efficient and effective operating environment. It is unclear why a recommendation would be made to provide annual reports to the Boards of Visitors on two specific elements of these broad activities by management. Without some additional understanding for the basis for these recommendations, we believe that annual reporting, after the initial work is done, is likely to deliver little or no additional value, but would increase annual administrative costs. At Virginia Tech we already work to keep our Board informed about administrative efficiency and efforts to achieve further improvement; as a result, this recommendation seems redundant.

We thank you, again, for the opportunity to review and comment on the report. We appreciate the valuable study being conducted by JLARC in understanding the evolving higher education environment. We look forward to our continued work together to preserve and enhance the policy environment that has allowed Virginia to build a world-class system of higher education.

Sincerely,

M. Dwight Shelton, Jr.
Vice President for Finance and
Chief Financial Officer

cc: Timothy D. Sands
Mark G. McNamee

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