

**George Mason University
2016 Six-year Plan
Part II**

In its short history, George Mason University has grown in both size and stature, not only becoming the largest public university in the Commonwealth, but also gaining prominence in the United States and throughout the world as an institution of quality - one that is on the move. Its location near Washington, D.C., affords Mason access to unique opportunities, resources, and audiences, as it strives to be the university *for* the world. Under the leadership of president Ángel Cabrera, the university has set an ambitious course for the future through its *2014-2024 Strategic Plan*. Mason's strategic plan is structured around four constituencies – the students, the community, the faculty and staff, and the world. While not mutually exclusive, each embraces the Mason *IDEA* – *Innovative, Diverse, Entrepreneurial, and Accessible* and is a key component of the university's commitment to *serve*.



A. Institutional Mission

A public, comprehensive, research university established by the Commonwealth of Virginia in the National Capital Region, we are an innovative and inclusive academic community committed to creating a more just, free, and prosperous world.

Following on the legacy of our namesake – George Mason – and grounded in our unique characteristics – the Mason IDEA – we will make true on our promise to be the best university *for our students, for our community, for our faculty and staff, and for the world.* The common thread weaving together our mission and the strategic plan is the notion that Mason will find innovative ways to serve our stakeholders.

The basic idea is reflected in the structure of our strategic plan. Each area is supported by goals, initiatives, and metrics that are designed to direct our actions toward positively impacting our stakeholders, inspiring new ways of thinking, and moving Mason forward as we face the challenges and opportunities of an increasingly complex world.

B. Six-year Plan Strategies

The strategies set forth in this Six-year Plan are aligned with Mason’s *2014-2024 Strategic Plan* as well as Top Jobs (TJ21) legislation and the Statewide Strategic Plan (SSP) for higher education developed under SCHEV’s leadership. Mason’s Six-year Plan strategies are organized around the four goals of the SSP.

Of utmost importance are three strategies that undergird everything else the university pursues. The first strategy addresses student access by making college affordable with adequate and appropriate financial aid for our undergraduate and graduate students. The second strategy addresses the need to attract and retain talent by improving compensation for our faculty and staff. The third strategy addresses innovation and job creation in northern Virginia through the creation of Mason’s second multidisciplinary institute, the Institute for Biomedical Innovation.

GOAL 1: Provide Affordable Access for All Students

Strategy 1. Increase Student Financial Aid. This strategy addresses Mason’s Strategic Plan Goals 2: Accessible Pathways (see Strategy 3 below), and 3: Return on Investment. In order for Mason to continue to deliver on its promise of quality and innovation, and given current budgetary pressures at the state level, we anticipate that students and their families will continue to bear the larger share of the cost for their degrees. As a result, Mason must identify additional student aid resources. The underlying premise for our request for additional student aid funding is to obtain parity in financial aid resources in terms of the percent of student/family income needed to pay for college. Mason students should have comparable financial footing to students at other Virginia public doctoral institutions when pursuing their education.

Increase undergraduate grant aid. Mason’s primary recruiting market is diverse. As a result, the university draws a large number of talented in-state students from lower income categories; students who are challenged to meet their educational costs. Many begin their postsecondary education at Northern Virginia Community College, and most choose to live at home while attending college. A large number of these students work off-campus jobs for considerably more time than the recommended 10 hours per week, and they are less likely to

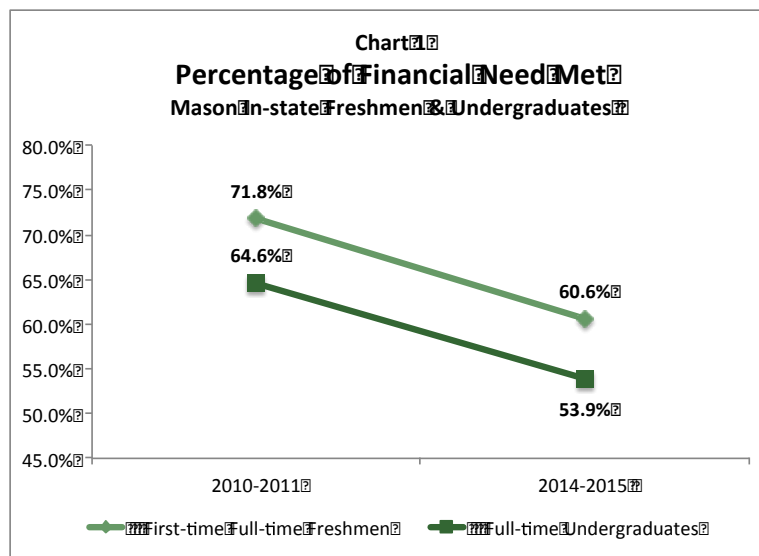
use loans to pay for their education. As a result, these students often take longer to graduate. With additional grant support, we can assist these students and in turn provide a timely path to degree completion that enables them to enter their professional careers more quickly.

Many believe that because Fairfax County has a high per capita income, it would naturally follow that Mason students must have high family incomes. In reality, because of our focus on access, this is not the case. The table below illustrates the difference in Mason students' family income quartiles compared to other Virginia public research institutions. The midpoint between the lowest two quartiles is considerable, with Mason's income being \$21,648, \$13,620 below the average. At the other end of the income range, the difference in the mid-point of the top two quartiles is \$23,389 with Mason's midpoint being \$109,009 compared to the average of \$132,398.

Table 1
Undergraduate Financial Aid: Mason Compared to Other Virginia Public Research Institutions

	Percentage of Students Applying for Aid	Family Income Quartiles			% of UG with Pell Grants	Number of Pell Students	Average Amount of Pell Grants
		Q1	Q2	Q3			
Mason	49.6%	\$21,648	\$53,990	\$109,009	27.6%	6059	\$3,880
Research Average	44.2%	\$35,268	\$78,953	\$132,398	22.0%	4297	\$4,020
Delta	5.4%	\$13,620	\$24,963	\$23,389	5.6%	1762	\$140

Mason's goal is to reduce the percentage of unmet financial need for undergraduate students by increasing grant funding. As enrollments increase and our student body becomes more diverse, the university sees an increase in the number of students applying for financial aid, as well as an increase in average student financial need. At the same time, decreases in federal and state resources available to students and limited private funds exacerbate the gap between resources and need.



The proportion of financial need met for Mason's full-time, in-state undergraduate students decreased from 67.9% to 50.0% over the past five years, a 17.9 percentage point change. For full-time, in-state freshmen, the proportion of need met decreased from 76.1% to 57.5% over the past five years, an 18.6 percentage point change. To reverse this trend is an ambitious goal that will require the university to seek alternate sources of funding to supplement existing resources. Mason is actively developing strategies to identify ways to meet the increased financial needs of its students. But additional support from the Commonwealth is needed if we are to meet our obligation to Virginia citizens.

Increase graduate student grant aid. Mason graduate programs provide Virginia's economy with vital professional workforce in growth areas such as information technology, cybersecurity, healthcare, and business services. Many students work part-time to complete their degrees. With additional grant support, we can assist these students and in turn provide a timely path to degree completion that enables them to enter their professional careers more quickly and to contribute to the Commonwealth economy at a greater level.

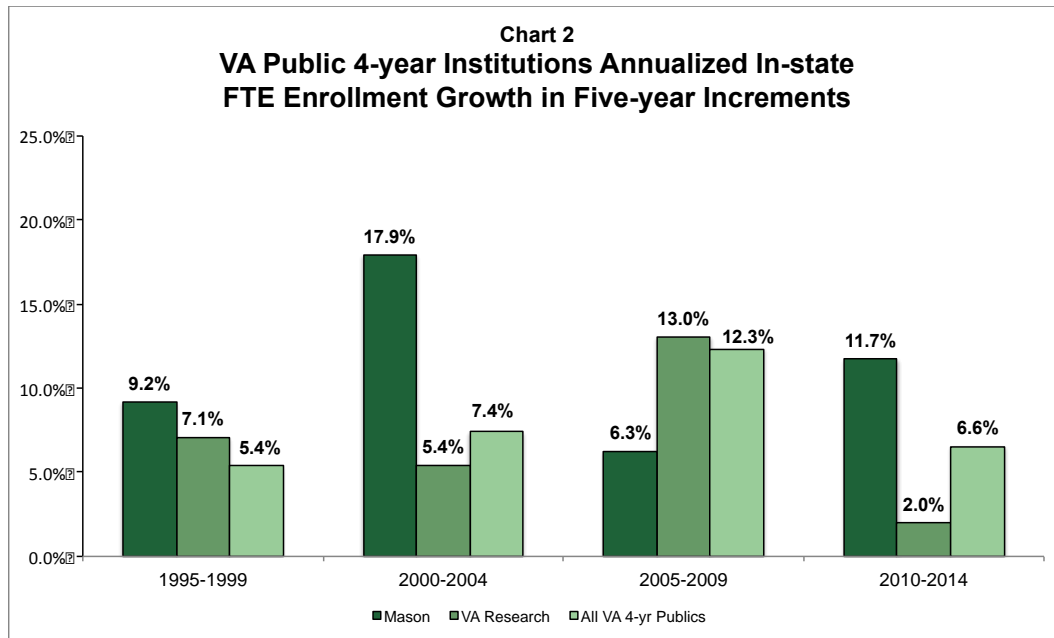
Currently, sources for aid support within the tuition increase are solely from out-of-state enrollment growth, which helps fund some but not all graduate grant aid. Therefore, additional state sources of funding are necessary. One underlying premise for our request for additional student aid funding is to obtain parity in financial aid resources in terms of per student funding. In FY 2016, Mason had more than double the number of in-state graduates when compared to the Virginia doctoral institutions, which on average has graduate in-state enrollment of approximately 2,765. Yet the amount for funding in graduate aid per in-state student does not reflect that same difference. Mason students should have comparable financial footing to students at other Virginia public research institutions when pursuing their degrees.

Strategy 2. 100,000 Career-Ready Graduates – Enrollment Growth and Degree Awards.

George Mason has been committed to the Commonwealth's higher education goals in terms of enrollment growth, two-year transfers, and academic program development to support economic growth in the state. In fact, Mason accounts for over 16% of all enrollment among the 15 public four-year institutions, and 14% of undergraduate enrollment. Our growth in undergraduate enrollment accounted for over 600 students and was the largest growth for in-state undergraduates when compared to the Virginia four-year public institutions. Yet, state resources to support Mason's efforts to meet these initiatives have not kept pace with actual costs, creating an unsustainable financial outlook and a negative incentive to grow. If we were to view this change from a General Fund per in-state student FTE perspective, Mason's per student allocation is only 74% of the average allocations available to the other public research universities. To close this disparity in General Fund resources per in-state student among Virginia's research universities would require a base budget augmentation to Mason of approximately \$38.6 million. Mason will request base budget augmentation funding to help close the current funding gap over the next six years.

Mason has been a major contributor to the Commonwealth's growth of in-state enrollment over the last decade with undergraduate enrollment growing from 15,963 in Fall 2005 to 19,797 in Fall 2015, a 24.0% increase (3,834 students). During this period of growth, Mason has shown that growth is compatible with improvements in quality as reflected in an increase in SAT scores from 1106 to 1153 and high school GPA from 3.36 to 3.6 for the entering freshman class. Mason is the largest transfer institution particularly for two-year college transfers. We remain committed to serving the Commonwealth by providing educational opportunities for its citizens

as outlined in both the TJ21 and its SSP, yet we can no longer increase in-state enrollments without remuneration. To do so would continue to compound the current funding gap.



While the number of high school graduates is declining in many areas of the country and the demographics of the college-going population are changing, Mason is well positioned in the heart of a growth area. Mason has a proven track record of equitable graduation rates across racial and ethnic groups and for our most needy students (defined as Pell recipients). So while demographics are changing, Mason has much to offer. At the same time, Mason is experiencing competition for these students from both in-state and out-of-state institutions in areas where the number of high school graduates are declining. This shifting landscape and a lack of incentives for enrollment growth have led the university to submit enrollment projections with modest growth for in-state undergraduate enrollments, no growth in out-of-state domestic students, and more pronounced growth in international student enrollments at both the undergraduate and graduate levels. While 2015-16 enrollment targets were an attempt to begin to close the revenue gap, beginning in 2016-17 enrollment growth from new in-state students will be limited to 10 additional in-state freshmen and 10 additional in-state transfer students.

For the next biennium, the university has set long-term enrollment growth targets with a plan to grow headcount enrollment to 36,092 by 2021-22, a 6.8% increase over the 2014-15 enrollment of 33,791, and to grow FTE enrollment to 30,186, a 9.0% increase. Some of this growth is due to the number of students already in the pipeline, and some is attributable to the number of international students we expect to enroll. In addition to growing enrollments, Mason continues to focus on retention, which also contributes to its growth.

New Programs. Mason plans to add new academic programs with a particular focus on the needs of Northern Virginia, with the preponderance being in the STEM-HS fields. Mason has plans to offer a variety of new academic programs. In the area of technology and engineering, Mason is offering degrees in Cybersecurity and Mechanical Engineering. The College of Health and Human Services is moving forward with its plans to create a School of Public Health that will offer several new degree options. Also, the college is planning a degree in Rehabilitation

Science, and is partnering with the College of Education and Human Development on a degree in Physical Therapy. The College of Humanities and Social Sciences will be introducing an MS degree in Linguistics and plans expansion in the area of Neuroscience. The School of Law will be adding two new LL.M. degrees, one for our international students in U.S. law, and a second in the area of global antitrust. The School will also introduce a dual degree in law and economics. The university continues to partner with Georgetown University on programs in biomedical science.

Online. Mason has been evaluating various avenues for the delivery of online program offerings including content development, marketing, and IT platforms. This information will be helpful in the exploration of an undergraduate Online Completion College in partnership with ODU (see Strategy 6 below). Currently, undergraduate courses that are part of the Mason Core (general education) are being developed in an online format to enable students to continue their studies from home during the summer. Finally, Mason is exploring ways to develop, market, and deliver its high demand, cutting edge master's degree programs.

Degree Awards. Mason's enrollment growth takes into consideration both the current market for higher education; and our goal to produce 100,000 degrees by 2024. In order to meet our degree completion goals, Mason will need to continue to improve student retention. Since Mason has emphasized access, the entering student profile has remained fairly constant over the past four years. Therefore, our ability to continue to improve retention and graduation rates at the same pace as in the past decade will create a greater challenge. Several strategies are in place or underway to continue to improve retention, persistence, and degree completions while maintaining the current student profile (see Strategy 6 below). With the current enrollment projections, Mason is not projected to reach its 100,000 degree goal until 2026. The efforts to improve retention and timely degree completion are successful, and if additional resources to support enrollment growth are provided, Mason could meet the goal as originally planned by 2024.

Strategy 3. Accessible Pathways – George Mason is committed to providing access to higher education for citizens in the Commonwealth through a variety of pathways and delivery formats. Over the next six years, Mason will continue to focus on providing access while maintaining or improving our student profile. Mason was an early adopter of *score optional admissions* where outstanding students who do not test well can request that their admissions decision be made without an admissions test (SAT, ACT). Additionally, Mason is focused on providing access to non-traditional populations by: 1) creating additional community college pathways; 2) serving adult students, active-duty military, and veterans; 3) serving underrepresented populations; and 4) serving international students. Many of these programs are customized for the population being served thus requiring additional resources, and in some cases, have caused us to make these premium-priced programs. When this happens it challenges our affordability goal. As a result, support from the Commonwealth is needed to help Mason support these unique programs and the students for whom the programs are designed.

As the leader for community college transfers, Mason has provided 32% of the growth in two-year transfers among the public four-year institutions from 2006-07 to 2013-14. Mason strives to make the transition for these students as seamless as possible. Through process improvement, the university has identified sources of frustration for community college students, which we are addressing, and we continue to learn from our primary partner in transfer enrollment, Northern Virginia Community College (NVCC).

The university is expanding options for adult learners by enhancing and refining the Online Adult Student Information Service (OASIS), an online resource designed to educate adult learners about Mason's degree completion programs. Originally developed for Mason's Bachelor in Individualized Studies and Bachelor of Applied Science (BAS) programs, the resource is currently being expanded to include the top ten traditional degree programs for adult learners. Initial funding for OASIS was through a Virginia College Access Challenge Grant. Launched in July 2013, this "one-stop shop" for adult learners provides easy-to-access information about the university before and during their time at Mason. OASIS also includes a Patriot Advising Transfer Help engine (PATH) that enables potential students to determine how their courses will transfer into Mason, and to estimate the cost and time required to complete one of Mason's adult learning degrees. OASIS provides transparency on degree completion options for returning adult and veteran degree completers. Funding from 4-VA enabled the completion of phase two of the OASIS project, which was the enhancement of PATH to include more majors. Designers continue to add features so that any degree program can be added to the database, thereby creating a system that can be available to any prospective or current student.

Mason is currently exploring additional delivery options in other innovative programs in an effort to provide access to non-traditional markets, including, but not limited to: 1) military personnel; 2) military veterans; and 3) working professionals. First, Mason is developing a baccalaureate nursing (BSN) program specifically for skilled medical veterans – the Mason Military Nursing Pathway (MMNP). A similar program for active duty personnel began this past fall. The Enlisted to Medical Degree Preparatory Program (EMDP2 or USIS) provides students from the five branches of service a two-year biomedical sciences program to prepare them for eligibility for admission to medical school. Finally, in collaboration with NVCC, Mason has added a BAS pathway designed specifically for veterans in the area of Cybersecurity. This program allows veterans to translate military education and training in this area into college credit toward the completion of a bachelor's degree. Partnerships with other Community Colleges and additional academic programs are under consideration.

The university has two primary pathways for international student access, through our campus in South Korea and through our public/private partnership with INTO, a firm that recruits undergraduate and graduate non-degree students who, after English instruction by INTO, will transition into degree-seeking students, most at Mason. This partnership enables the university to enhance the diversity of its campuses while increasing revenues.

GOAL 2: Optimize Student Success for Work and Life

Strategy 4. Student Success Initiatives – Over the past several years, Mason has invested in a variety of initiatives and resources designed to improve retention and reduce time to degree. The university is launching a new advising structure that provides centralized training and resources while maintaining a decentralized advising service model, and University Life is creating a student mentor program to assist students with their transition to college.

With the adoption of various tools for students, advisors, and faculty, the university now is challenged to move from implementation to adoption and integration. The university is undergoing a process analysis of the student experience from first contact

to becoming an alum designed to inform how the integration of these various tools should occur. The university is working with consultants experienced in reengineering and process analysis to help us discover the most effective approach for Mason. Success metrics will be expanded to measure the impact of these tools on student progression through the educational system as well as measure the use and effectiveness of each tool. Standard metrics include retention rates and four-, five-, and six-year graduation rates; additional metrics include ratios of earned credits to attempted credits and credit hours earned per semester to track academic progress.

Strategy 5. Experiential and Innovative Learning – Undergraduate Research. Mason’s undergraduate research program, *Students as Scholars*, was initiated in 2011 as the SACS Quality Enhancement Plan (QEP) and has quickly become an established pillar of the undergraduate experience at Mason. The Office of Student Scholarship, Creative Activities, and Research (OSCAR) has as its goal to foster a culture of undergraduate student scholarship across all Mason units. The initiative provides robust curricular and mentored opportunities for undergraduate research and creative projects, enhancing the visibility of student scholarship on campus, increasing faculty involvement, and better preparing students for future academic and career goals.

Innovative Learning Environments. Mason continues to design “signature” learning spaces that inspire our faculty, staff, and students to think creatively about pressing intellectual problems. These award-winning learning spaces are becoming a hub for life-long learning and engagement for our region, our university community, and our alumni. While these spaces excite our students and faculty, conversion comes with cost. These new spaces require almost twice the square footage per student than the current state standard.

Entrepreneurship and Innovation – Mason is launching an *Entrepreneurship and Innovation Launch Pad* where teams of students from various disciplines (i.e., Business, Engineering, Law) will work together as they gain training and experience in creating, launching and managing new ventures. The Launch Pad will be housed in Fenwick Library.

Digital Innovation – The University is building learning spaces that provide formal and informal spaces for faculty, staff, and students to connect and continue learning beyond the classroom. Inclusion of digital innovation in the teaching/learning environment capitalizes on mobile technologies in creative ways. The creation of more active learning spaces through new construction and renovation remains a critical goal for the university.

Global Classrooms. As Mason seeks to prepare global citizens, creating global classrooms where Mason students will be in the same virtual classroom with students from around the world is a key component to learning. These classrooms will provide an opportunity for those students least able to take advantage of study abroad opportunities to engage in a global experience. The classrooms will also serve as a “first experience” for other students prior to studying abroad. Leveraging technology encourages faculty and students to attack world problems creatively. Similarly, managing the effective asset utilization through assignment and scheduling.

Finally, providing alternative and flexible hybrid course types and opportunities for blended learning creates innovations in learning as well.

Strategy 6. Online Completion College – Mason is exploring the potential for a comprehensive online completion college in collaboration with Old Dominion University. Such a program would allow individuals who are place-bound in their community due to family or employment to complete their college degree online. Using 2012 Census data, we know that 45% of Virginia’s working adults (aged 25-64) have attained at least an associate’s degree, and more than 1,000,000 working-age Virginians have earned college credit but no degree (346,516 of these individuals reside within 10 miles of at least one of George Mason’s three Northern Virginia campuses). This new Online Degree Completion College will customize programs to suit the unique needs of the adult student, validating life and work experience. The educational experiences will offer: 1) a full range of flexible scheduling options, 2) an affordable pricing model, 3) educational readiness support, and 4) aggressive job placement services. Preparing for Virginia’s economic future will require investment to support design, implementation and support for operations. The Online Completion College is a sound investment for the economic gains to the Commonwealth resulting from a more educated citizenry.

GOAL 3: Drive Change and Improvement through Innovation and Investment

Strategy 7. Support Teaching and Scholarship Excellence – Recruit and Retain Top Talent. In order to meet the university’s goals around student success, research and economic development, we will need to recruit and retain top human capital across all aspects of the university. While Mason’s external recognition for quality of work life speaks to the work environment, compensation packages are the key to attracting and keeping high-quality faculty and staff. Compensation includes salary, benefits, start-up packages, cost of living, and opportunities for spouse/significant other. Mason’s salary appropriation continues to lag behind the majority of public research institutions in the Commonwealth despite the fact that we live in a very high “cost of living” area and are competing for faculty and staff, both locally (i.e., GWU, Georgetown, American, UMD) and nationally (i.e., Northeastern, Temple, UCLA).

In the short term, Mason must deal with both competition for faculty and faculty turnover due to retirements. Mason could face up to a 50% faculty turnover in its faculty ranks due to retirements. This will have a profound impact on our ability to provide the same quality and mix of faculty we currently have. First, hiring new faculty talents are subject to intense regional and national competition. Mason’s current salary level is below market and will cause major difficulty in the replacement process. Second, as most faculty retirees will be full or associate professors, in order to maintain an appropriate mix of faculty ranks we will need to replace many of these faculty at a comparable level. Currently we are able to use some of the salary money from retirees to create more attractive salaries for new hires at lower ranks. Given the significant level of turnover (expected at 50% within a decade), the current strategy will no longer be adequate and must be complemented with an increase in financial resources in order to maintain a competitive faculty mix.

Mason’s requested funding would provide a salary increase of 4.5% for Teaching and Research Faculty as well as Administrative Faculty and Classified Staff. In addition, the funding will provide resources to increase faculty lines along with providing faculty start-up packages for approximately 15 new faculty members (approximately \$5.9 million over the biennium). Further, the funding will provide targeted faculty emergency retention funding to support and maintain our talent pool that we have developed and benefit from (approximately \$6.4 million over the biennium). With this initiative, Mason is requesting General Funds to

support approximately two-thirds of the cost with the remaining one-third funded by Non-General Funds.

Strategy 8. Effectiveness and Efficiency – Mason is undertaking a major reengineering project that will touch many areas of the university. Efficiencies such as centralizing operations to reduce redundancy and conducting process analyses to improve functionality and reduce costs have begun. The process analysis of the student life cycle discussed in Strategy 4 also is one of the effectiveness and efficiency initiatives. An Efficiency Task Force has spent the past few years identifying areas for improvement. Over the next biennium, Mason will be implementing some of these efficiencies identified by the task force. Resources saved through these various initiatives will be reallocated, at least in part, to fund the retention of top talent as discussed in Strategy 7.

Examples of some of the initiatives include: 1) a revised method for on-boarding new staff who are not full-time employees, 2) a new way to consider faculty teaching loads to create more flexibility for faculty and units while meeting course demand, 3) improving technology support for meeting rooms by consolidating enterprise level support, and 4) aligning space utilization with emerging research.

The process analyses and implementation of new systems and processes often have up front costs for consultants, software development, training, etc. As a result, most resource recovery associated with many of these changes will not be immediate.

GOAL 4: Advance the Economic & Cultural Prosperity of the Commonwealth & its Regions

Strategy 9. Multidisciplinary Institutes – Mason is committed to establishing five large multidisciplinary institutes designed to advance the economic and cultural prosperity of the Commonwealth, making contributions to key regional sectors, including biotechnology and health, information and communications technologies, and science and security technologies. The multidisciplinary research programs within each institute will draw on faculty expertise across Mason’s colleges and schools and will be fully integrated with the academic mission of the university, being especially attentive to the its valuable interdisciplinary research and education programs. The first institute, the **Virginia Serious Game Institute (VSGI)**, is well underway, thanks in part to the funding received from the Commonwealth during the previous biennium. The university is now engaged in establishing the second institute, the **Institute for Biomedical Innovation (IBI)**. The Institute will accelerate biomedical research through a unique collaboration among university faculty and students, corporate researchers, health professionals, entrepreneurs and civic leaders. Multidisciplinary teams of faculty, students, clinicians, and other healthcare and business professionals will identify translational research opportunities that promise significant advances in personalized medicine while also spawning new companies, creating jobs and enhancing the health of citizens in Virginia and beyond.

- Placing health and market considerations at the front end of the innovation process helps ensure that R&D yields products that are medically feasible and commercially viable.
- Mason demonstrated the success of this innovation model with its Virginia Serious Game Institute (VSGI), opened in 2014, which now hosts eight startups and employs more than 70 people.

IBI will have three pillars:

- **Discovery:** IBI will drive advances in the state-of-the-art in biomedical science and engineering, leveraging the expertise of Mason's world-class faculty and the institution's academic and clinical partners.
- **Innovation:** IBI will accelerate the research-innovation cycle through a process that brings together academe and industry, and incubates thematic innovation centers that attract investors and start-ups committed to commercializing research, technologies and services.
- **Infrastructure:** IBI provides a creative, innovative environment in a \$40 million, 75,000 square feet state-of-the-art biomedical center that supports the design, development, prototyping and deployment of new products, ensuring the efficient use of these resources.

George Mason-- ranked in the top 200 research universities in the world and the top 100 in the United States-- is poised for growth, with first-class facilities, expertise, and a reputation for generating research outcomes of consequence. Embedded in Northern Virginia's high-tech corridor, Mason is uniquely positioned to access leading medical and health organizations, defense and security industries, and a multitude of opportunities for public and private funding.

- Mason has a significant IP portfolio, with more than 100 patents in biomedical technologies alone. In partnership with the National Institutes of Health and other partners, Mason faculty and students have made significant breakthroughs in disease detection, diagnosis, and treatment.
- Mason recently announced a comprehensive partnership agreement with the Inova Health System, a not-for-profit healthcare system based in Northern Virginia that serves more than two million people annually. Inova is home to the nationally and internationally recognized Inova Heart and Vascular Institute, the Inova Schar Cancer Institute, the Inova Translational Medicine Institute and the Inova Global Genomics and Bioinformatics Institute. The Mason-Inova partnership will focus on translational research in personalized medicine.
- The IBI will enable Mason to leverage these partnerships and its existing research capabilities in bioengineering, systems biology, surgical innovation, bioinformatics, proteomics, personalized medicine, computational science, epidemiology, modeling, simulation and public health economics and policies.

Support received for the IBI will be used to leverage external research grants and private venture investments. This investment will grow Virginia's biotechnology and healthcare industry. It also will strengthen and diversify Virginia's economy and support the Commonwealth's initiatives for strategic job growth and regional collaboration.

The IBI is located in Innovation Technology Park on the university's Science and Technology Campus in Prince William County, which includes more than 2.1 million square feet of premier research space, and an ability to support 6.5 million square feet of innovation capacity that will accommodate the start-up companies that Mason's translational research will attract. IBI is in close proximity to major national and international health and science organizations and is within 30 miles of 3.2 million National Capital Region residents, including 2.5 million residents of Northern Virginia.

Strategy 10. Enhance Research Infrastructure and Grow Research – Research is a core mission of the university that attracts and retains the best faculty and students, aids in developing a high-quality learning environment through direct student opportunities for

inquiry-based learning, contributes to preparing graduates for productive careers, and stimulates regional economic development. The university's strategic planning process reviewed areas of research strength, identified opportunities on which to build, and developed an understanding of the framework necessary to reach goals that are achievable and sustainable. As a result of these visioning and planning processes, the university is expanding interventions and applications with significant social, cultural and economic impact.

The university is focused particularly on translational research, promising outcomes uniquely designed to enhance human life whether through new commercial products, public policy, or improved social dynamics. Mason has proven success in the areas of criminology, personalized medicine, public health, transnational crime, humanities, science and engineering. The institution's considerable focus on STEM-HS will continue. For example, the VSGI at George Mason has worked closely with Prince William County and formed a public-private partnership for research and innovation in Simulation and Game Design. VSGI supports a business incubator, creating start-up companies seeking to create new products and services in training, computer visualization, and rapid prototyping. The only one of its kind on the East Coast, VSGI helps launch early-stage companies in the \$80 billion simulation/game design industry, which is growing at 7% annually. The potential for innovation and job creation in the region is evident.

VSGI offers a new vision for technology transfer: through cutting edge game design research and development, (e.g. simulation/game training and certification; visualization, software development, and rapid-prototyping) VSGI provides access to leading commercialization and marketing channels. Specifically, the Institute sustains an innovation ecosystem that integrates student talents, research faculty expertise, industry experts/mentors, and business counseling support, which attracts investment from foundations and equity partners to launch new ventures. This strategy for technology transfer is applied throughout Mason's research and innovation enterprises, creating a collaborative epicenter of corporate and university research and technology.

A critical goal for research and innovation is to support high-impact scholarship; to that end, the university needs strong support for graduate research assistants (GRAs) and post doc positions. Mason continues to fund the Provost's Ph.D. Program, which invests in the university's strongest Ph.D. programs by providing supplemental support to increase external graduate student support and/or increase their program's competitive position. As Mason's research capacity and contributions grow, the institution will garner additional funding to support graduate students. But researchers often need graduate student support prior to securing external funding, and not all graduate programs have access to a pool of external funds. Over the past five years, the number of GRAs has shifted. With 579 GRAs in 2010, the number reached a high of 686 in 2012 then dropped to 616 in 2014. The university must continue to seek additional external funding both to increase the number of GRAs and to increase Ph.D. student stipends.

Mason has recently been classified by Carnegie as a *Very High Research university*. In order to maintain this classification, the university must secure and commit the necessary resources and infrastructure to attract new research-active faculty and postdoctoral trainees, recruit graduate students of the highest quality, and compete vigorously for both public and private grant dollars. Specifically, Mason must increase its investment in research staff, including post-doctoral trainees and research faculty, while also increasing the number of doctoral degrees awarded, since these are all key measures in the Carnegie Classification system.

To realize its research goals the university is leveraging its location. Northern Virginia and the DC metropolitan region are dense with research entities, both public and private. Despite this, the federal research expenditures of Virginia institutions are \$1 Billion less than those of research institutions in North Carolina. Improving the Commonwealth's competitiveness for Federal dollars, seeking partnerships that advance our research agenda, and building our institutional research infrastructure will help us meet both institutional and state goals. The university seeks support to help build this infrastructure through faculty start-up packages, research faculty lines, and support for graduate assistants.

C. Financial Aid

The proportion of Mason students with financial need continues to increase more rapidly than available resources. The amount of need met for full-time in-state undergraduate students has decreased from 65% to 54% over the past five years. For full-time in-state freshmen, the amount of need met decreased from 72% to 61% during the same five-year period, and by 10 percentage points over the last 10 years. At the same time, 15% of our undergraduate students are enrolled part-time yet, for students with need, we are only able to provide support to cover 44% of their financial need and only 3% of these students received non-need based aid. As Mason expands its capacity to serve an ever-increasing number of transfer students, as well as underserved populations including adults, active military, and veterans, students' financial need will only increase. Very few resources are available to support these students beyond Federal financial aid. The resource base for aid has not increased at the same rate as enrollment growth. Similarly, aid for graduate students is also limited but necessary to be competitive in recruiting and retaining talented students that will contribute to furthering Mason's research goals and contribute to the Commonwealth's economy.

D. Evaluation of Previous Six-Year Plan

1. Educating and Transforming Future Leaders: Student Success and Completion

- a. Enrollment Growth and Degree Awards
Within its strategic plan, Mason outlined an ambitious goal of graduating 100,000 career-ready graduates by 2024. Mason set forth to meet this goal by: a) maintaining in-state enrollment, b) increasing community college to four-year transfer students, c) increasing enrollment of adult degree-completers, and d) increasing out-of-state enrollment. The university met all Institutional Performance Standards (IPS) related to enrollment growth and degree completions. Mason grew undergraduate in-state enrollment by 8.3% over the past two years, exceeding its projection for this time period. At the same time enrollment of out-of-state students increased by 9.7%, creating a net increase of 8.5% over the past two years. Although we met all IPS metrics by exceeding projections for undergraduate students, we did not reach our graduate enrollment projections. In-state graduate enrollment decreased by 4% over the last two years, and out-of-state graduate enrollment declined by 14%, for a net reduction of 7% in graduate enrollment. The majority of this decline was due to a drop in third party payer activity with Federal government and its contractors as a result of sequestration.
- b. Student Success Collaborative (SSC) and Other Programs to Enhance Advising and Student Self-direction with the Intent of Increasing Retention and Graduation Rates, Mason has seen a significant improvement in these measures over the past five years.

The first-year retention rate for in-state, full-time freshmen has increased by 1.2%; the second-year retention rate has grown by 3.2%; and the third-year retention rate has grown by 1.8%. The change in graduation rates is similar, yet more pronounced over the five-year period, with an increased number of students graduating within four or five years. Mason's four-year graduation rate grew by 5.0%, the five-year rate grew by 7.2%, and the six-year rate grew by 4.2%. Going forward, we will also monitor student progression in terms of credit hours earned at critical points in a student's academic career to ensure an increasing number of students are on-track for timely graduation. SSC is being used by academic advisors across the university to identify students less likely to graduate in their declared major based on performance in key success marker courses. Outreach and redirection efforts can be initiated before students are in poor academic standing. The integration of the SSC with academic advising reform has helped us make progress toward our retention and timely degree completion goals.

c. OASIS, Adult and Veteran Degree-completers

Mason strives to meet the needs of adult learners and veterans. In fact, Mason ranks 28th among the best schools for veterans as defined by *US News & World Report*. The number of veterans and active duty military enrolled has increased by 1,845 over the past five years, from 1,290 in Fall 2010 to 3,135 in Fall 2014. Mason received a grant to provide medical school preparation for active military in the five branches of the military. The first year of this program has been hugely successful and we look forward to the second class joining us in Fall 2015.

The number of Mason's undergraduate students who are age 25 or older, has increased from 2,789 in Fall 2010 to 3,198 in Fall 2014, an increase of 15%. Many of these students have full-time jobs, families, and other competing priorities. The Mason OASIS resource enables adult students, including veterans, to enter their college credits already earned into the online resource and determine what they need to complete their degree in terms of time, credits, and costs.

d. Student Financial Aid

Mason's goal was to maintain or reduce the amount of unmet need for our undergraduate students. Unfortunately, the trend has gone in the other direction. While Mason has increased undergraduate aid thanks in part to additional resources provided by the Commonwealth, the enrollment growth coupled with the increase in the amount of aid needed both in terms of the number of students and the amount of aid needed, has resulted in our losing ground. As stated earlier, the decrease in the amount of aid met dropped from 74% in 2010 to 61% in 2014. A reversal from the beginning of the decade where financial need met improved from 64% in 2005 to 74% in 2010. Not surprisingly, the number of students graduating with debt continues to rise, as does the amount of debt students have at graduation. Therefore, we were unable to reduce, let alone maintain the percentage of unmet need. It is important to note that the three-year default rate of Mason's graduates continues to decline, and Mason was recently recognized by *bestcollegesBestColleges.com* for having the lowest student loan default rate of any public institution in the country.

e. Degree Completion Through Online and Other Innovative Programs

Mason has multiple goals when it comes to offering college completion opportunities for adult learners who have some college but no degree. One goal is to bring more academic programs completely online, as well as, select programs with broad appeal and high

growth potential. Mason is seeking an outside partner with experience in this area to bring these efforts to the market. There is an RFP on the street to help us select that partner(s).

A second goal of online education is to make our programs available to a wide number of demographic groups. We have learned from our prospective and current students is that they are most interested in hybrid programs that offer a mix of online and face-to-face courses. Therefore, we are focusing some of our attention on increasing the number of programs that are partially online and are committed to expanding program offerings in this format. Current growth in our online opportunities demonstrates the strides being made in this direction.

Current growth in our online opportunities demonstrates the strides being made in this direction. The proportion of students taking at least one online class during the Fall semester has increased from 9.4% in 2011 to 18.7% in 2014. At the same time the proportion of credit hours taken in an online format has increased from 3.3% to 6.8%. A total of 24,808 credit hours were taken online in Fall 2014. During this same period, the proportion of students taking online courses exclusively grew from 2.0% to 3.9%.

The third goal for Mason's online offerings is to make more Mason Core (general education) courses available so students have access to these courses in the summer when they are less likely to be in close proximity to campus.

We have benefited from various funding to support these efforts including 4-VA funds where we used resources to share course structure.

f. Enhance General Education

With various planning tools, students are now able to better arrange their schedules and plan for their Mason Core classes. Sample schedules are provided at orientation sessions and online course offerings provide additional options for completing general education requirements at Mason.

All Mason Core categories have been assessed in terms of learning outcomes and new courses are carefully considered in light of the listed outcomes. Two additional actions have occurred: 1) students may now double count courses in two categories, thereby shortening the number of Mason Core requirements they must take; and 2) a Capstone Experience has been added that provides students with a meaningful, culminating experience in their major, as an alternative to the synthesis requirement.

g. Undergraduate Research: Students as Scholars

In AY15, Mason faculty taught over 8,600 undergraduates in 78 discovery, inquiry, and research courses (446 sections). A total of 1,035 students (up from 701 in AY13) received intensive faculty mentorship in Research and Scholarship Intensive (RS) courses, and the Undergraduate Research Scholars Program (URSP) to conduct original scholarly or creative projects that they shared in on-campus, regional, and national conferences, symposia, and performances. In AY15, *Students as Scholars* funded travel grants for over 125 students to present the results of their scholarly projects nationally and internationally, up from 49 in AY13. Highlights of this year included the media attention of student projects (including the Floating Wetlands, Sound-based Fire Extinguisher, Costa Rican percussionists, and Concrete Canoe), the large contingent of

students presenting at the National Conference on Undergraduate Research at Eastern Washington University, and collaborative presentations with Smithsonian and National Geographic.

2. Mason as an Economic Engine

a. Recruit and Retain Top Talent

As a result of the slow economic recovery in Virginia, the high cost of living, and the Federal government sequestration, it has become increasingly difficult to attract and retain talented faculty and staff. In fact, as a result of limited support for research through external research funding and institutional resources, Mason actually saw a decline in the number of faculty, staff, and research assistants devoted to research. Full-time faculty and staff have received offers, even from local institutions, for a considerable increase in salary and in the case of some faculty, more research support. We are challenged to meet these offers and in many cases, faculty and staff members remain at Mason even though we cannot match the other offers. Local offers are particularly attractive because faculty and staff do not have to relocate. Over the past two years, we have lost about half of the faculty with competing offers that we have tried to retain. As stated earlier, we are competing with high caliber research institutions, both public and private, for top talent.

b. Research of Consequence

Mason's research expenditures have remained fairly static over the past two years, at around \$100M. That said, Mason has been engaged in building partnerships and facilitating entrepreneurship as evidenced by the activities of our Institutes. With the change in administration, there has been a change in the focus of the research and faculty are engaged in developing new research relationships both internally and externally. Much of this research is focused on the health sciences and STEM-HS related areas.

c. Carnegie Very High Research Classification

As a first step in moving Mason along the research continuum and to increase the likelihood of reaching the highest Carnegie classification for research universities, the university has undertaken a review of the university's research infrastructure to assess current resources and to identify infrastructure needs going forward. It is anticipated that this report will not only identify needs but propose strategies to address these needs.

d. Multidisciplinary Research

A Multidisciplinary Research Symposium, led by the Dean of the College of Science, succeeded in its goals to generate ideas for multidisciplinary research collaboration and to engage with granting agencies to understand their funding directions and to gain feedback on some of Mason's plans for multidisciplinary research going forward. As mentioned earlier, the university established the Prince William Campus as the Science and Technology Campus, which is the location of the newly established Institute for Biomedical Innovation. The newly established Virginia Serious Game Institute (VSGI) at Mason has already established a new vision for technology transfer by integrating cutting edge game design research with a successful business incubator that will launch new entrepreneurial ventures. During the first year of the institute, four resident startups were launched, employing one full-time employee and 26 part-time employees.

In FY15, the institute assisted eight residential startups that together had 12 full-time employees with salaries ranging from \$34K to \$98K, and 61 part-time employees with wages between \$15 and \$20 per hour. VSGI has five private sector partners, four non-profit sector partners, and three government sector partners.

e. Facilities of the Future

Master planning – Mason completed the data gathering phase of its next generation master plan. The data gathered pointed to opportunities for enhancing utilization, particularly at the Arlington and Science and Technology (formerly Prince William) campuses. Through identification of these opportunities, the university has begun the process to shift programs from the overcrowded Fairfax campus to these other campuses. Designating and renaming the Science and Technology campus is further re-focusing that campus on life sciences, engineering and technology and driving assignment and design decisions. Further, the university has begun a transition of business and executive education programs to the Arlington campus.

Facilities of the future – Construction is nearing completion on the addition to the Fenwick Library Learning and Research Commons. Among other things, this project adds approximately 1,500 study spaces to the building, many of them collaborative, group study areas. Additionally, in August 2015 the university will complete the creation of an *Entrepreneurship and Innovation Launch Pad* in Innovation Hall. This project repurposes former computer study labs into multidisciplinary maker spaces where student groups can put ideas and concepts into action.

Asset Utilization – In addition to the increased utilization afforded by moving programs to the Arlington and Science and Technology campuses, the university created additional academic spaces at the Fairfax campus by repurposing former administrative and auxiliary spaces into classrooms and student study areas. Of greatest note, the university completed consolidation of administrative functions in Merten Hall to create new academic space for Economics and Business units. Separately, the university has created unique course offerings that provide students flexibility in taking courses with such variability as Friday evenings, weekends, and compressed schedules, using a new set of space allocation standards, and consequently increasing year-round space utilization.

f. Efficiency and Effectiveness

In FY14, Mason deauthorized \$81.0 Million of capital projects, transformed the Mason Inn (which had lost nearly \$12 Million since inception) to sorely needed educational space (classrooms and housing), built new revenue streams via a partnership with INTO, an international partner, and streamlined programs, contracts and positions to save over \$4.0 Million. We consolidated administrative offices in Alan and Sally Merten Hall and repurposed vacated office space in Mason Hall to add an additional 25,000 square feet of academic space, thereby saving \$7-\$8 Million in new construction costs.

The university has undertaken several division reorganizations and has established a committee to identify additional ways to create efficiencies. Additionally, Mason is undertaking a major reengineering project that will touch many areas of the university.

Efficiencies such as centralizing operations to reduce redundancy and conducting process analyses to improve functioning and reduce costs have begun.

E. Capital Outlay

George Mason University has been working to revise its campus facilities master plan, aligning facilities plans to the university's strategic plan. The university has taken early steps to improve asset utilization at its Arlington and Science and Technology campuses. Through long-term capital planning, the university seeks to ensure its ability to produce career-ready graduates in the future by investing in assets as follows:

1. Underlying infrastructure
2. Existing assets
 - a. Renovate existing space to meet current pedagogy
 - b. Address energy improvements and deferred maintenance
 - c. Address functional obsolescence
 - d. Reduce off-campus leases where possible

Specific high-impact projects that support this underlying capital strategy are listed below. These are the same five projects identified last year:

1. Replacement of Robinson Hall: The university received authorization and funding for this critical project to replace this antiquated classroom and office space and is awaiting allocation of funding to proceed into design activities. 30% of university classrooms are located in this building, originally constructed in 1975. There have been no significant functional or code-related improvements to it since that time. It can no longer support the pedagogy of today. Due to its configuration and the extent of deferred maintenance, correction cannot be accomplished through renovation. Assuming receipt of funding in July 2016, the university will open the replacement for Robinson Hall in 2020.
2. Utility Distribution Infrastructure Improvement: The University received authorization and awaits funding allocation for this project to replace crumbling chilled and hot water distribution pipelines throughout campus, addressing deferred maintenance, increased distribution capacity and energy improvement throughout the core of the Fairfax Campus. Additionally, this project provides for redundancy in some areas of campus where none exists today. Combined, this additional capacity and redundancy will help ensure the university will be able to provide services at all of its facilities now and for the next 10 years.
3. Telecommunications/Network Infrastructure Enhancements: This project corrects long-standing shortcomings in the campus-wide telecommunications and data network. It will increase survivability of data and telecom systems at the Fairfax, Arlington, and Science and Technology campuses by providing redundant network connections that will minimize outages – both planned and unplanned. This is the first phase of a critical multi-year network enhancement program that will provide a resilient network infrastructure capable of meeting the academic and research needs of the university as well as posture the university to take advantage of mobile technologies in its teaching and learning models.
4. Renovate Science and Technology I – Planetary Hall: This project includes the phased renovation of 100,000 GSF of the Planetary Hall/Science and Technology I building. The building supports science education and student/faculty collaborative research for the Chemistry/BioChemistry department, and the School of Physics, Astronomy, and

Computational Sciences and was originally constructed in 1987. Due to the age of the building, the existing science instructional and research labs need extensive infrastructure updates, as well as health and safety code updates. The building does not meet technology and infrastructure standards for today's STEM education, so renovations are necessary to improve instructional and research environments for students and faculty.

In addition to providing modern science instructional and research labs, this project will allow Mason to meet its goals for energy use and sustainability by providing a more energy efficient facility. Sustainability is a key cross-disciplinary component of the curriculum of the science-based programs that will be located in this building, so this project will allow us to have a facility that better reflects that principle in practice. This project will complete the renovation and upgrade of Mason's Fairfax science complex after completion of renovation of the adjoining Science and Technology II/Exploratory Hall.

5. Renovation of Fenwick Research Commons: This project completes the renovation and expansion of the main campus research library. An ongoing capital project expands the existing building. This proposed project renovates and modernizes the existing structure, addressing long-standing deferred maintenance issues and expanding collaborative research areas. The project further creates an Innovation/Entrepreneurship Center, creating technical spaces within the research commons for inter-disciplinary student groups for projects ranging from digital design, electronics, prototyping and wearable technology.

F. Restructuring

The Restructuring Act has provided significant benefits to institutions of higher education in Virginia. With additional operating authority, institutions have been able to operate more nimbly and flexibly in an ever-changing environment. The changes from the Restructuring Act better positioned George Mason University and supported the university's growing teaching, research, and outreach missions. Further, the change in authority has helped the university stimulate economic activities to improve the local region and the Commonwealth as a whole.

Under current statute for Level II institutions, boards of visitors and governing bodies are limited to exercising authority in two of the three functional areas of information technology, procurement, and capital projects. Enhanced restructuring would permit the boards of visitors of any Virginia public institution of higher education with additional authority in the functional areas mentioned above and provide financial operating authority for institutions that have entered into management agreements.

As we all know, Higher Education is undergoing dramatic change at an unprecedented rate. Now, more than ever, public institutions of higher education need to be responsive to its constituents – lawmakers, students, alumni, Board of Visitors, faculty, staff, and the larger community. In times of rapid change, we need to remain accountable for the limited state tax dollars we receive. However, we need to be responsive and flexible to meet the needs of our unique institution. As we move forward, the need to explore additional areas of operating and financial authority to further enhance restructuring and provide the flexibility to compete in competitive national and international markets, are essential.

George Mason University appreciates the opportunity provided through a five year pilot

program, as per Chapter 780, which will allow both George Mason University and James Madison University to exercise additional financial and administrative authority. Enhancements to the Restructuring Act will further enable higher education institutions that have a demonstrated track record of success to have additional flexibility and reduced regulations, which will ultimately benefit the Commonwealth.