PROGRAM INNOVATION AND GROWTH WORKING GROUP
EXECUTIVE SUMMARY AND REPORT

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by the Program Innovation & Growth Working Group for the President's Vision Effort

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Program Innovation & Growth
Executive Summary

The Program Innovation and Growth Working Group was tasked with analyzing Commonwealth expectations for higher education, our current capacity, and future areas of growth.

Key insights from our analysis

Although our charge asked that we identify specific areas in which Mason might grow new programs, it quickly became apparent that it was more important to identify processes by which targeted areas could be identified, processes by which decisions about investing in programs should be made, and factors that should be considered when evaluating programs. As a result, we have focused our report on these issues. The working group feels that it is critical for Mason to implement a regular, ongoing process for identifying and selecting new areas for investment that serve the goal of truly being sought after for our programmatic offerings.

The Mason competitive advantage

For many years, Mason has seen itself as both a hub of innovation and a university that is responsive to the needs of the region within which it sits. Our instructional programming not only meets the needs of traditional students, but also meets the needs of individuals already in professional employment settings. This often multi-disciplinary, translational work is built, in part, on the connections between faculty and industry in the National Capital region. There is a high degree of Mason-community engagement across areas that are currently important regionally, nationally, and internationally, such as health care, conflict resolution, and cyber security. Given this engagement, Mason faculty and staff are well positioned to stay informed about emerging trends, to play essential roles in shaping public policy, to address regional issues that have far-reaching global impacts, and to recognize areas for growth and future innovation.

Proposed Mason commitments

- Mason will respond to today’s needs and tomorrow’s challenges.
  - Mason will develop and follow a process for continually identifying important new areas for program development and for reporting on this process on an annual basis.
  - Mason will develop and implement an evidence-based process for evaluating existing and prospective new programs.
- Mason will lead the Commonwealth in providing educational opportunities to qualified students.
  - Mason will rapidly modify existing academic programs or create new academic programs to provide relevant educational opportunities.
  - Mason will develop extensive research and internship programs.
- Mason will produce the most highly-sought graduates in the Commonwealth.
  - Mason will be the number one choice within the Commonwealth for employers.
• as evidenced, e.g., by the number of relationships/collaborations with private sector corporations and public sector organizations; number of internship offerings, etc.
  o Mason graduates will be sought after for their critical thinking and writing skills.
  o Mason graduates will be sought after for their commitment to civic engagement and ethical responsibility.
• Mason will be central to the economy of the National Capital region.
  o Mason will lead the region in the amount of relevant research developed/funded.
  o Mason will lead the region in attracting employers seeking to hire our graduates.
• Mason will lead the Commonwealth in applying effective new and emerging learning technologies.
  o Mason will integrate new techniques and teaching approaches with proven teaching methods.
Report of the Working Group on Program Innovation & Growth

“When an idea reaches critical mass, there is no stopping the shift its presence will induce…”

Marianne Williamson

“When Education is the most powerful weapon which you can use to change the world…”

Nelson Mandela

The Program Innovation and Growth Working Group was tasked with analyzing Commonwealth expectations for higher education, our current capacity, and future areas of growth. Although our charge asked that we identify specific areas in which Mason might grow new programs, it quickly became apparent that it was more important to identify processes by which targeted areas could be identified, processes by which decisions about investing in programs should be made, and factors that should be considered when evaluating programs. As a result, we have focused our report on these issues. The working group feels that it is critical for Mason to implement an annual process for selecting new areas in which to invest which serves the goal of truly being sought after for our curricular offerings.

Key Issue 1: What are the big and important issues that are confronting the region, the Commonwealth, the nation, and the world?

There is little doubt that our world continues to evolve, and change, at a rapid rate—perhaps, at a rate more rapid than at any time in history. Today’s critical issues and their associated challenges, together with an understanding of history and a prediction of critical domains for the future, provide a landscape for the context upon which the contemporary university must be built.

As our Working Group considered questions concerning “Innovation and Growth” for George Mason University, we sought to identify the “big issues” for the region, the Commonwealth of Virginia, the world, and the nation. That is, we have sought to discover the “big issues” that will impact our communities and influence the university’s programs and activities; these are summarized in Appendix A. Below, we provide a summary of the array of challenges we face:

The World

As the dawn of the 21st Century arrived, so did a wide array of challenges that served to influence the nations of the world. Some of the most prominent of these global issues include the following:

War and Peace – Both domestic (i.e. Syria and several nations in Africa) strife and war, as well as significant international conflicts (i.e. in the Middle East, North Korea and the Arctic) continue to affect many parts of the world. The negative effects of war, and the positive consequences of peace have significant, sustained impacts on individuals, families, communities and nations – as well as
the international community. These issues will affect issues of immigration, migration and the needs of an extant and enlarging global population of refugees.

**Nationalism** – In many parts of the world, nationalism is on the rise, exemplified by recent events among the nations of the Middle East and Africa as well as countries such as Iran, Iraq, Pakistan and the nations of the Balkan region. The rise in nationalism and the associated repression of and intolerance for “difference” raises a very critical and dangerous set of issues.

**Environmental Issues and Global Warming** – The science is clear, even if the politics is less certain, that the climate is changing and likely will provide a significant global challenge in both the near- and long-term. This will require an increased focus on sustainability and ways to address climate change.

**Economy** – The “rise and fall of empires” is a historical fact, however, the accelerating “tidal change” in the economic stability of large national economies (i.e. Greece, Spain and other nations of the European Union) is having a significant impact on a global scale. In addition, the continued rise of the economy and manufacturing capacity of China, India and other nations of Asia, the beginning of a more robust economy in Mexico and other Latin American and South American nations, and the recent precarious nature of the US economy all will drive significant “plot lines” in the next decade. These issues will continue to impact the demographics and scope of poverty, and the distribution of wealth more generally, as well as the challenges associated with population density of nations, regions and communities.

**Healthcare** – The continued increase in the technologies of health care delivery, as well as a fuller understanding of prevention science are critical global issues as are the continued need for the containment of both infectious and contagious diseases and chronic, debilitating illnesses (i.e. HIV/AIDS, influenza and other diseases) and the continuing development of effective treatments for diseases with significant morbidity and mortality (i.e. cancer and diabetes). These challenges are blended with increasing costs of high quality health care delivery, the geographic distribution of physicians and other health care providers, and health care facilities that create evident inequity in the accessibility of high quality health care services. In addition, an important net effect of more effective healthcare delivery systems is the impact and consequences of an aging population and an increasing elderly population worldwide.

**Education** – Without question, the need for education (at every level of education) on a global scale is among our greatest and most potentially opportunistic of challenges.

**The Nation**

As the year 2013 begins, and with it the second term of the Obama administration, the hopes for the future are modulated by the recognition that our national leaders seem in perpetual conflict, paralyzing partisanship plagues legislative assemblies, our economy remains fragile and in a “recovery mode” and our nation, although hopeful, also is
sobered by a series of critical challenges that are at the forefront of a national agenda. These issues include:

**Economy** – Chief among critical issues affecting our nation is the set of critical challenges associated with the economic recession, high unemployment, lowered confidence in our financial institutions and the stability of financial markets, reduced home and real estate values, a changing manufacturing base and other associated issues that reflect the “new economy” of the 21st Century. National debates about the economy, including current debates about taxation, spending and the national budget (and deficit), represent the “tip of a larger iceberg” with respect to the US economy.

**National and International Security** – The attack on our nation on 9/11/2001 has driven a major change in our perceptions of safety and “homeland security.” It also has been the catalyst for major changes in our national systems of security as well as public perceptions with respect to our military and the associated military industrial complex. Recent domestic events of significant mass violence also will continue to propel forward the national discourse on matters of intelligence, privacy, safety and security, including the prevention of violence in our society and the contentious issue of gun control.

**Healthcare** – Notwithstanding the recent passage of important legislation regarding healthcare by the US Congress, the opportunities for all citizens to receive high quality healthcare services, including both preventive and intervention services, is modulated by the healthcare disparities of our population in terms of personal health and the availability, accessibility and affordability of high quality healthcare.

**Energy Independence** – The reliance on fossil fuel energy, and the relative lack of such natural resources within the US, has “fueled an urgency” to create new sources of energy that are both available and sustainable.

**Education** – There is little debate about the value of education, even when there is debate about what constitutes a quality education and what ought to comprise the scope of and priorities for our educational systems – both at the P-12 and higher education levels. It is presumed that education will continue to rise in its prominence and remain among the most important issues and challenges for our nation.

**National Capital Region and the Commonwealth of Virginia**

The National Capital region and the Commonwealth of Virginia are linked directly such that one clearly impacts and influences each other. For that reason, we have blended both into a single category – that is each “draws breath” and needs the other for their own survival, growth and continued development.

Our region and state face the same issues faced by the world and nation. The National Capital Region has one of the most diverse and international populations on earth. Washington, DC is frequently described “as the most powerful city in the world.” As often is said, “… the national news is also our local news.” That is, it is nearly impossible
to deconstruct one from the other – they are, in effect, one – the global, national and regional. The issues that are most prominent for the world and the nation also hold prominence regionally and within our state.

Among the thematic domains of issues with the greatest “currency” for both the National Capital region and Virginia are the following:

**Education and Economic Development** - During the current era of economic uncertainty, and its associated challenges, the economy of the National Capital region and Virginia has remained (relatively) robust in comparison to other regions. The stability of our economy is related to a multitude of factors including the reliance on federal jobs and federal funding sources, a diversified economy that has a large sector within the defense industry that has thrived in recent years, a highly educated workforce that is among the most educated in our nation, high quality public schools and universities, and a commitment among our region’s and state’s political leaders to provide consequential incentives for success in the “new economy.”

However, sustaining a robust economy in the long run demands continued attention to a wider range of critical issues including:

- Continued emphasis on education at both the P-12 and Higher Education levels – we must continue investments in exemplary public education, including the preparation of well trained personnel for our schools, as well as major investments in research-intensive universities (such as George Mason) that provide the intellectual capital and person-power for the continued economic development of the National Capital region and Virginia. Greater partnerships among P-12, Community Colleges and 4-year institutions are important for providing seamless transitions and decreasing college costs and time to graduation.

- Focused attention the development of educational and technical training programs that will prepare well-trained workers for the economy of the future. This will require a renewed commitment to “21st Century Skills” including the STEM fields without marginalizing critical thinking and the importance of collaboration and creativity. It will also require greater collaborations between corporations and universities to ensure that workers are being adequately trained in necessary skills.

- Focus on the “convergence” of disciplines with an emphasis on multi- and inter-disciplinary engagements for both faculty and students. We must prepare our students, who will comprise the workforce of the future, to be “cross disciplinary” in their training, experiences and worldview. The newly emerging fields will be amalgams of many domains, not singular or linear composites.

- New cohorts of students regularly come to universities for higher education, in many cases to develop new skill sets based upon a new knowledge base. This has led to our university having a large number of non-traditional students, including older students (in terms of
chronological age) and those who have had other, earlier careers. Such students seek accessible, affordable higher education with “real world” connectivity and have needs quite distinct from “traditional” university students. Addressing these concerns directly responds to the Commonwealth call to increase the number of baccalaureate degrees and to make education more accessible and viable for these Virginia citizens.

o Corporate Diversification has been an important principle underlying the robust economy of our region and state. Economic diversity will need to remain a core principle with the goal of retaining key corporate interests while attracting new, emerging markets. If the parable, “…the top 20 jobs of 2020 have not yet been invented…” is accurate (and most prognosticators suggest that it is)\(^1\), then our region will be challenged to retain its “cutting edge” image by creating corporate, fiscal and workforce incentives to attract “businesses of the future.” The challenge to “remain nimble” infers that Mason will need to keep pace (or stay ahead) of the trends in business and industry so that the region has the full capacity to support corporate trends of the future. Increased partnerships with relevant corporations will provide greater understanding of potential developments on the horizon.

o Transportation and the continued focus on inventive approaches to transportation policy and practices, including the finances and engineering of road construction and traffic modulation, public mass transportation and industrial transportation (such as high speed rail lines and dedicated truck routes and highways\(^2\)) will be critical to economic development. Mason is well positioned to continue leading research in this area.

Public Policy - There are a wide array of issues within the domain of public policy that are critical for the National Capital region and Virginia. Our proximity to the US Capital and to federal agencies and organizations of considerable influence in the non-profit and private sectors, should prompt Mason to continue the development of policy-focused programs, activities and initiatives of contemporary currency, including:

- Public Administration and the training of policy analysts, program managers and others prepared for civil service,
- Information Technology and the development highly trained personnel in the fields associated with data management including handling “big data” and the skills needed to manage large data collections,
- National and International Security including programs focused on policy related to security and the military and defense needs of our nation, and the training of personnel to work successfully in these domains, and

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Civility and Conflict Resolution, including the consideration of strategies, models and techniques to prevent conflict and negotiate solutions to complex problems and associated conflicts.

**Healthcare** - The National Capital region and Virginia have a wealth of high-quality health care programs, providers and facilities. Nonetheless, a high quality healthcare delivery system of the future will require continued focus on research and development as well as the training of healthcare personnel and health-focused researchers. The emphasis must be both on biomedical disciplines (including biomedical engineering) as well as behavioral fields among the social sciences that also affect health and wellness. The need for healthcare workers is great. In the top 20 up and coming jobs posted by the Bureau of Labor Statistics, healthcare-related fields are identified as three of the top five projected new jobs between 2010-2020, with registered nurses ranked first.

It would be opportunistic for the university to assume a more visible leadership role in the general domains of personal and public health, and enhance current programs while developing new initiatives that will position Mason as a regional and national leader in these domains of projected need and growth.

**Leisure, Tourism and Hospitality** - The National Capital area and Virginia are regions of significant national historical prominence, hosting some of the most visited historical sites in the nation. As a result, they are “magnets” for tourists. The region also is becoming a prominent national center for the leisure and hospitality industries. For example, our region is home to many of the largest private-sector organizations in these fields (i.e. Hilton and Marriott) as well as to the leadership of the National Park Service.

This prompts the fields of leisure management, including tourism and hospitality, to rise among fields of critical importance both for research and development as well the training of personnel to work in and lead these important, economically robust industries.

**Population Demographics** - The demographics of our region continue to shift rapidly. Even though the number of new immigrants to the US has declined in recent years, there continues to be a large influx of immigrant families to the National Capital region and the Commonwealth. The number of persons for whom English is not their primary language, and who might be considered “English language learners” continues to escalate and provide challenges to our schools and community systems.

These challenges also prompt the university to develop new opportunities for non-traditional students. Newly-arrived immigrants to the US often strive for educational opportunities that can be provided uniquely by our schools and universities. It is the responsibility of universities such as George Mason to consider, develop and provide programs of specific utility and interest to immigrant populations.

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Summary/Commitment

This section has described challenges that are currently on the horizon. However, this list will change over time. Thus, Mason needs a process for identifying emerging areas and a process for evaluating which ones we should invest in (whether this represents an existing or new program).

Key Issue 2: What is the process by which Mason can innovate / identify big and important issues confronting the region, the commonwealth, the nation and the world?

In order to be (and stay) a leading edge university, and contribute to the solution of major societal challenges, Mason has to be alert to new ideas emerging on the horizon, as well as foster and scale up existing initiatives that hold great promise. Appendix B provides a summary of our discussions on this topic. But what are the necessary factors and ideal processes going forward by which Mason can best accomplish this? And will this demand new ways of thinking and doing business?

Background: How other universities and organizations have addressed this question

John Hennessy, President of Stanford University, writes about Stanford’s contribution to Silicon Valley and how Stanford supports innovation⁴. He notes that innovation historically meant more than the development of new products and services. Innovation instead referred to the introduction of new ways of thinking. Hennessy makes the point that this has been Stanford’s innovation vision – a long term view and development of discontinuous innovations that have major impact. Contributing to this goal, Hennessy says are faculty and students with a diverse “mix of talent and approaches,” an environment and culture that acknowledges that risk taking is a result of promoting innovation, and the ability to transfer knowledge to organizations that can further develop them to have major impacts (Hennessy 2008).

Corning, a leading product and technology innovator for last 160 years, also has an explicit focus on leveraging their key strengths and on effective innovation processes. Innovation is one of Corning’s key values and Corning is organized in a manner that encourages bottom up innovation but with top down guidance so that there is some structure and focus to innovation efforts. Corning has a Corporate Technology Council, led by the Chief Technology Officer, which focuses on early stage ideas and a Growth and Strategy Council led by the Corning CEO focusing on ideas that are near commercialization⁵. Corning is a great proponent of the stage gate approach to innovation.

Collaboration and the means and mechanisms to promote collaboration are also key aspects of innovation success for universities. Stanford’s innovation efforts are enabled by university-industry and university-government collaborations that have extended to university-industry-government collaborations. MIT, which was a model for Stanford, has a similar focus on industry and government collaboration, though in a very different economy than Stanford.

In her presentation at the Triple Helix 2011 conference, Tapan Munroe extends the innovation paradigm to the full innovation ecosystem of which a university is a major part (Figure 1 below).  

![Innovation Ecosystem Diagram]

From Munroe 2011.

Internal university collaboration efforts are also keys to university innovation success. Harvard opened a 30,000 ft innovation lab, Harvard i-lab, a year ago in order to foster team based entrepreneurial collaboration between students, faculty and surrounding communities and in the first year had over 14,000 student visits and 131 resident teams. MIT has a long track record of fostering internal collaboration including with the Deshpande Center, which funds novel research and provides grants to teams of faculty and students and the Media Lab.

To summarize, culture, collaboration, institutional structures and processes are all important aspects of developing and maintaining an innovative university and organization.

What should George Mason’s process look like?

George Mason should undertake steps in each of the areas of culture, collaboration, institutional structures and processes to foster innovation with the goal of Mason being and staying a leading-edge university and contributing to the solution of major societal challenges.

These steps include:

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8 Chris Vogel “How MIT Became the Most Important University in the World,” (November 2012), Boston Magazine.
Culture – Similar to Stanford President Hennessy’s description – work to attract faculty and students of diverse talents and capabilities and provide incentives for innovation and associated risk taking.

Collaboration – Foster collaboration both with industry and government including strengthening of the regional innovation ecosystem; foster collaboration across campus with initiatives such as the MIT Deshpande Institute and development of cross-disciplinary institutes.

Institutional Structures – Consider developing university Corporate Technology and Growth and Strategy Councils similar to Corning’s to add a top down coordinated element to Mason’s bottom up approach in order to identify and promote major focus areas.

Processes – Undertake an evaluation of Mason processes that limit innovation and collaboration and identify the top ten of these processes to consider modifying them in order to add greater flexibility to Mason innovation efforts.

George Mason should incubate innovation and foster ideas from the inside

There is a great deal the University can do right away to encourage greater innovation and development of new ideas by faculty. For example, there are any number of existing “incubators” of innovation that already exist at Mason—the neuroscience program is just one example. In its brief history, the program has become the platform for cutting edge, multi-disciplinary research concerning the human brain and the human mind. We should do more to turn to these existing innovation sites and tap them for new ideas.

It is also crucial to draw broadly on Mason’s institutional knowledge. For example, periodic strategic planning sessions with the university’s deans and directors, run by a professional facilitator, can undoubtedly serve as a rich source of ideas for this process.

We can also draw upon the individual experiences of faculty members and students by instituting a series of formal interview processes. For example, when faculty members are hired at George Mason they should be formally requested to submit a short statement as to how they would like to innovate courses and programs within their new department and college (and, indeed, within the university as a whole). They should be asked to leverage their experience from their former institution(s). Additionally, when faculty members retire from George Mason, they should be asked what they would like to have seen changed at Mason but were unable to implement during their tenure, along with new trends and developments that Mason should be considering.

Similarly, students who are completing their undergraduate and graduate programs should be asked for their ideas on how George Mason can grow their existing programs and how the university should innovate in new areas. This can be done by adding questions to the Senior Exit Survey. It may also be possible to administer in-person interviews to a sample of students who have excelled in their courses and programs.

George Mason must build more external relationships

This process must also involve drawing on ideas from outside the University and outside academia. We support President Cabrera’s efforts to create an external advisory
committee comprised of “big thinkers” to meet with him periodically (perhaps twice a year) to share ideas on emerging trends and issues. Although college and university presidents frequently assemble advisory councils of alumni and business leaders, primarily for fundraising assistance and strategic advice, the purpose here would be different.9

Membership could include business and technology leaders, journalists, representatives of think tanks and the performing arts, foundation leaders, and entrepreneurs in other fields. An agenda with open-ended time for “blue sky” discussion could yield helpful insights. Many suggestions from this group will probably not be pursued; that is in the nature of brainstorming. But nuggets of good—and great—ideas will also undoubtedly emerge.

Mason should also take advantage of its regional location by inviting top leadership at one or more of the large consulting firms located in the National Capital region (e.g., Booz Allen, SAIC) to join with the University in identifying on-the-horizon issues; this could lead to fruitful partnerships. Some of the processes that businesses have championed over the years have formally entered the literature. One of the earliest was The Nissan Report 10 which documented how the car company engaged academics and other community leaders to advise them on how to design cars for the new millennium11. Booz Allen, itself, recently published the book, War Gaming for Leaders12, which provides detailed descriptions as to how businesses can take advantage of challenges from rival companies and new government policies.

Mason should consider, modify and improve upon the experiences at other universities. Arizona State University has over the last seven years conducted a complete reorganization of its programs. McMaster University, a leading Canadian University based in Hamilton, Ontario, has promoted problem-based learning13 while Harvard has long championed Case Based Learning14. Mason should consider further development of these approaches.

11 A review from the Library Journal of the book The Nissan Report includes this statement: “The Nissan Report is a report on an "innovative method of innovation," based on the concept of the new community-focused responsibility-motivated consumer. Nissan assembled 25 top thinkers in various fields, i.e., philosophy, psychology, anthropology, and listened as they unleashed dozens of new ideas and approaches for developing products, learning to think ahead, winning public trust, and setting up systems to use customer feedback. This book provides no tidy, simple conclusions but ingeniously attempts to stimulate company dialog, adaptable to any line of business. Readers are encouraged "to participate creatively in and extend the conversation that is this book." Not necessarily to be read cover to cover, it definitely is thought-provoking and original. For all business collections.-- Susan Awe, Natrona Cty. P.L., Casper, Wyo.” accessed February 1, 2013 at http://www.amazon.com/Nissan-Report-The-Steve-Barnett/dp/0385421273.

Program Innovation & Growth
Dickeson and Ikenberry recently achieved some notoriety with the publication of their new book on Program Prioritization\textsuperscript{15}. They suggest the following ten criteria for evaluating academic departments and programs: history and expectations of the program; external demand; internal demand; quality of inputs; quality of outcomes; productivity, size and scope; revenue generated by the program; costs incurred by the program; justification, impact and essentiality; and finally opportunity analysis. Although this approach has been primarily used for cutting programs in an era of reduced budgets, it can easily be developed to evaluate new programs that academic units might want to introduce. Although the Dickeson-Ikenberry methodology is somewhat controversial, attracting criticism from rank-and-file faculty members, its use in the growth and innovation of new programs might well avoid the previous censure that accompanied its introduction on a number of campuses.

*George Mason must provide leadership from the top to drive this process*

In a university as decentralized as Mason, leadership from the President and his Office will be crucial to driving this initiative and keeping the “emerging ideas” issue on the front burner as an ongoing priority. We, therefore, recommend that a staff member in the President's Office be assigned responsibility for guiding the initiative and staffing the new external advisory board.

There are specific steps the President can take, as well, to promote new ideas and to foster existing initiatives. For example, his office can commission short white papers by faculty which can be given broad circulation. He can also sponsor a Presidential lecture series to give more visibility to emerging issues -- and to ongoing work at Mason that he hopes to see grow with greater attention.

On an annual basis—every May—the President's Office, working with the Provost, should prepare a report to the BOV, the Faculty Senate, and the broader University summarizing the results of the past year’s efforts, both internal and external, to identify new and emerging areas. More important than the annual report itself, however, are the action steps that are taken throughout the year. We see this as a *continuing process* in which innovation is fostered and efforts made *on an ongoing basis* to foster new ideas and help them take root within the University.

*Commitment:*

Mason commits to developing and following a process for identifying big and important areas, as well as to foster and scale up associated initiatives, on an annual basis—a and to creating an environment internally that can nurture and encourage even greater innovation.

Key Issue 3: How well-positioned is Mason to provide innovative and economical paths to teaching, learning, and degree completion?

The term “innovation” is a broad term and innovation without direction or focus could fall under multiple categories and be difficult to define and assess. In order to assess what other universities are doing to provide innovative and economical paths to learning and degree completion, it may be helpful to be specific and to examine not only how other universities are innovative, but why they have become innovative (a summary of the issues identified can be seen in Appendix C).

The landscape for college graduates has changed, and is much more problematic now than it has been in the past. Once number one in college degrees held by individuals between the ages of 25 and 34, the United States is now 12th out of 36 developed nations. This same report indicates that graduation rates lag, tuition rates are rising, the unemployment rate for recent graduates is very high, and college graduates graduate with large debt.

Although enrollment rates are indeed growing, graduation rates have slowed. Degree completion, once something taken for granted, is now a problem for many universities and colleges throughout the United States. The time needed to complete a bachelor’s degree has increased by one third year and the proportion of completers fell from 57.8 percent to 43.6 percent. This is a timely issue, and deserving of attention. In fact President Obama, in his 2012 State of the Union address, named college completion as the economic issue of our time.

In addition to the problem of college students not completing college, there also exists a problem of colleges and universities not properly preparing students for the current workforce. The problems of students not completing their degrees, not completing degrees in a timely manner, or not being properly prepared, signal that changes need to be made in higher education. Some institutions have implemented change, and some institutions are much further along than other institutions and have had more success than other institutions. An assessment of these attempts for change is useful as Mason looks for ways to be innovative in the future.

Next Generation Learning

With problems outlined above being so prevalent, some universities have attempted to find creative ways to combat these problems. The literature reveals that examining the way modern students learn is useful when creating or looking into creating innovative programs. Some researchers have catalogued attributes of “next generation learning,” and outlined how to actively engage today’s student. These attributes require that learning be:

- Personalized
- Flexible
- Interactive and engaging
- Relevant
- Organized
- Constantly informed

**Footnotes**


Programs that focus on these attributes exist across the country, and in order to successfully implement these attributes, the literature shows that there are six areas that programs looking to foster this type of learning can focus on. These areas include goal-setting and measurement, methodology, and the active support of the systems that surround learning.

**Innovative Programs**

There are several innovative programs that offer alternative paths to achieve economical means for education and degree completion. The common feature of these innovative programs is the use of technology, either in the classroom or in place of the classroom. For example, BYU-Idaho, operates year round on a 3 semester per year calendar, where students are admitted to 2 of 3 semesters. By maintaining operations throughout the year, problems associated with limited classroom availability are eliminated and overall productivity is enhanced with significant growth in the number of students who attend throughout the year. BYU-Idaho makes extensive use of hybrid online and in-class learning environments. The result is that BYU-Idaho serves 50% more students and saves 20% cost per student. In addition, BYU-Idaho is centered on a faith-building educational process known as the Learning Model that has at its core an emphasis on personal honor. While a faith-based model may not be relevant to Mason core values, the success of the BYU-Idaho model suggests that shared cross-cutting societal themes across educational programs benefits a university environment. For example, one can imagine Mason scholars with shared appreciation for ethics and diversity where these themes are woven into the educational offerings.

A leader in on-line education is National University, which has been accredited since 1977. It is the leading institution for preparation of credentialed teachers in California. National University is based in San Diego, CA with 30 locations throughout CA and NV, and offers year round classes where each course lasts one month. National University offers 70 degree programs that are 100% online and has recently expanded its offerings to include a Master’s of Science in Health and Life Science Analytics program.

Seton Hill University makes technology a centerpiece of the educational experience. Faculty and students are issued a 16Gb IPAD and MacBook Pro where the university owns and supports the technology without restrictions. The technology allows hybrid and on-line education where faculty members have committed to incorporating the technology into the educational experience. Seton Hill promotes a concept of “creative literacy” which recognizes rapidly emerging on-line sources of information that go

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beyond traditional academic sources, teaching students how to make sense of the information and use it to solve problems.

**MOOCs**

One of the most exciting developments in program innovation is the emergence of massive open online courses (MOOCs). MOOCs are online courses aimed at large-scale participation and open access via the web. MOOC participants do not need to be a registered student in a school to “take” a MOOC, and are therefore not required to pay a fee. An attractive feature of MOOCs is their inherent scalability – while we consistently consider the cost of education where the number of student to teacher ratios are a major factor, a MOOC could support an indefinite number of participants and may offer economic advantages. Several MOOC-type projects have emerged independently, such as Coursera, Udacity, and edX (led by Harvard & MIT), where institution membership is a measure of prestige and reputation within specific academic areas.

There is some question as to whether or not MOOCs simulate a classroom environment (perhaps not necessary or even desirable for some students), the extent to which “content delivery” provided by MOOCs corresponds to education, and which subjects are most conducive for MOOC-based approaches. At a minimum, it is clear that MOOCs can be a significant resource for some courses and programs. While MOOCs typically do not offer credit-bearing courses, there has been some early adoption for certification. Recently, the University of Washington has announced that it will be the first US institution to provide for credit classes and certificate programs on MOOC platform through Coursera. Course credit will be available at UW through “enhanced, instructor-led” versions of the MOOC and will have fees similar to traditional on-campus offerings. The specific academic programs targeted by UW emphasize technology and include: an applied mathematics program in scientific computing, computer science courses, computational finance, and a three-course certificate in information security and risk management.

**Initiatives for Degree Completion:**

**Posse Foundation** - The literature clearly shows that group learning is a major theme common in both innovative programs and in programs that focus on next generation learning. The Posse Foundation perfectly illustrates the importance and structure of the philosophy behind group learning, and goes a step further.

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While many institutions and academicians see the long-term value of group learning inside and out of the classroom, the Posse Foundation takes this principle farther by linking students together before they enter college. The intent is that the students stay together as a group throughout their college careers. The Foundation is a college access and youth leadership development program for students from diverse backgrounds. In this context, a posse is a multicultural team made up of 10 students that acts as a support system to ensure that each student succeeds and ultimately graduates from college. In the context of the degree completion problems facing colleges and universities, the Posse Foundation philosophy might be something that could be replicated. It has indeed been proven successful. Since 1989, more than 70 percent of Posse scholars have either founded or become leaders of campus organizations. Most importantly, posse scholars persist and graduate at a rate of 90 percent.

Legislation Concerns - State governments are becoming increasingly involved in the economic policy that relates to degree completion. Legislators from Florida, Ohio, Pennsylvania and other states are examining alternative models to support public higher education where funding models are incentive based depending on parameters such as course completion, time to degree degrees awarded, etc. There is significant state-level concern about the number of credit hours for academic programs raising the possibility of imposed caps for credit hours for undergraduate degree programs. A 2006 study by the Florida legislature revealed that credit hours taken beyond those required to graduate cost the state $62 million each year. Texas discourages excess credit hours by removing the state subsidy for students who exceed a certain number of credit hours. Ohio and Maryland have formed statewide efficiency councils which aim to increase higher education efficiency in energy, technology, administration, academics and procurement. In general, with many degree programs at 120 credit hours, Mason appears not to be at risk of evoking such concerns; however other institutions in the commonwealth may raise concern. With respect to tuition pressures faced by many families, the most prominent example of state government mandates has been in Texas where Governor Rick Perry has challenged Texas schools to provide a $10,000 college degree (total tuition for all 4 years). Ten Texas colleges so far are leveraging web-based instruction and improved efficiency measures to drive down the cost of a degree. The University of Texas at

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Permian Basin now offers a $10,000 Bachelor of Science degree to qualified full-time students seeking to study chemistry, computer science, geology, information systems, and mathematics.30

Commitment:

Mason will provide incentives for faculty to engage in programs (such as those offered by CTE, the DE office and ITU) on delivering curricula in more innovative ways.

Key Issue 4: What is the process by which Mason should evaluate new or existing programs?

For many years, Mason has seen itself as both a hub of innovation and a university that is responsive to the needs of the region within which it sits. In many ways, however, this is less true than it was 25 years ago. Many of Mason's early programs were interdisciplinary in nature, not discipline-bound, and tied to industry in the area (e.g., doctoral degrees in information technology and in computational sciences). In the ensuing years, new programs have become more traditional in nature. To develop ideas, we obtained input from committee members (who possess diverse backgrounds relevant to higher education administration), other members of the university community (through an online survey), and numerous published sources on criteria relevant to establishing new programs and evaluating existing ones (e.g., the Dean & Provost periodical, various journals related to higher education, and the Washington Monthly college rankings). A summary of the issues identified is shown in Appendix D. As we begin to think about investing in strengthening existing programs or building new ones, we need to consider the following principles and issues as we evaluate those options.

Program Quality

Program quality can be disaggregated into quality of inputs (e.g., students, faculty, resources) and quality of outcomes (e.g., graduate placements, research publications, employment statistics). The reputation or prestige of the program would ideally be based on the quality of outcomes, but many ranking systems (e.g., U.S. News & World Report) conflate inputs and outcomes.

It is also important to consider the fact that indicators of quality can differ based on whether one takes the perspective of the student, the university, or society at large. For the student, indicators of quality include (but are not limited to) employability/marketability, salary, the development of skills for lifelong learning (e.g., critical thinking, quantitative and communication skills), and breadth of knowledge (being “well-rounded”). For the university, indicators of quality include graduate placement and research publications. For society at large, indicators of quality include social mobility, social responsibility (e.g., the development of ethical reasoning and action), and research publications.

Vis-à-vis employability, there is frequently an attempt to forecast demand for various occupations on the basis of labor data (e.g., from the Bureau of Labor Statistics). However, it should be noted that, in dynamic market economies such as the U.S., employment forecasts are frequently highly inaccurate.

More generally, many indicators of quality are hard to quantify. They are also subjective, and their subjectivity renders them susceptible to ideological interpretation (consider, for example, the relative weighting of employability versus breadth of knowledge).

**Distinctiveness/uniqueness**

In addition to program quality, the distinctiveness or uniqueness of the program is important to consider. The program can be a source of competitive advantage to the university if its features are not shared by programs at other universities—and cannot be imitated easily. For example, Mason’s proximity to DC gives us distinct opportunities to collaborate with government institutions which are not available to many other universities. Building new programs and supporting existing programs around these types of collaborations will ensure their quality and relevance while enhancing Mason’s reputation.

Distinctiveness/uniqueness

It is important to remember that not every program should be distinctive or unique. While distinctive programs will attract some students to the university, many students are interested in more traditional academic programs and they may turn away from Mason if they cannot easily identify programs that interest them.

**Fit to Mason and Metropolitan Washington Region** – The extant literature on criteria relevant to establishing new academic programs and evaluating existing ones frequently notes that, although program quality and distinctiveness are important, so is the fit of the program to the university. A program is more likely to succeed and be sustainable in the long term if it is central to the university’s mission, key aspects of which are shaping the global community, establishing an academic setting that values diversity, and providing innovative and interdisciplinary courses of study. A related issue is that the program should be a good fit with the resources available from, and the priorities of, the region—in this case, the National Capital region and the Commonwealth of Virginia.

**Revenue vs. cost to mount program** – Comparative cost analysis is a process by which the ratio of the cost of a program to the number of students enrolled is compared against the same ratio for a comparable program at another university. This ratio is frequently used to decide which existing programs to terminate. Costs are difficult to calculate, however. For example, it is not simple to allocate capital costs such as library, central administration, and parking services to each program. In addition, some programs will incur higher costs due to expensive research instrumentation or specialized facilities that are needed to support the program. These costs may vary from one institution to another based on the focus of the academic program, making it more difficult to directly compare costs. Although cost savings are frequently invoked in program termination, cost

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[^31]: It might be useful to mine the Business Geographics database to which Mason has access to determine exactly what employers we have in the region.
savings are rarely tracked when programs are terminated. In any event, cost savings may not be realized from program termination, because courses and faculty may simply be reassigned to other programs. Program-specific revenues typically include categories such as net tuition and fee revenue per FTE student, state and local government appropriations per FTE student, grants/contracts (from government, foundations, corporations, etc.), and private gifts.

Inclusiveness – A program is more likely to succeed and be sustainable in the long term if it is inclusive. There are at least two aspects to inclusiveness. One aspect is that the program should serve several of the existing academic programs either because of its inter-disciplinary nature or because it provides skills relevant to multiple existing programs. A second aspect is that the program should be accessible to various sub-populations of students (and faculty). For example, there has recently been much discussion regarding how to make STEM programs more accessible to women and minorities.

Necessity – As new disciplines develop (bioengineering, for example) there may be a “necessity” to create programs in these areas. Or, as the President or Governor declares that more graduates are needed in area X, there may be a necessity to create a new program in area X or modify an existing program so that it better fits within area X.

The Role of Politics in Program Termination and Creation

Programs should be terminated by developing appropriate criteria (or principles), then evaluating existing programs on these criteria, and then terminating the lowest-scoring programs. However, the literature on program termination suggests that institutional leaders frequently do not use the criteria they specify in advance: in other words, the actual criteria used (which can be gleaned retrospectively by observers, on the basis of which programs were terminated) frequently do not match the stated criteria. Cost savings are frequently mentioned as an important reason for program termination, but, as previously noted, cost savings from program termination are rarely even tracked. Institutional leaders tend to display “action rationality” (i.e., programs that end up being closed are those that are most “close-able” based on a lack of resistance from internal and external constituencies) but not “decision rationality” (i.e., programs that end up being closed are not necessarily those that are least deserving of continued existence). Similar processes would presumably explain the creation of new programs. In short, program creation and elimination are frequently political decisions.

Building on Mason’s Strengths

As we consider investing in existing or new programs, it will be important for us to play to our strengths. Our instructional programming not only meets the needs of traditional students, but also meets the needs of individuals already in professional employment settings. This often multi-disciplinary, translational work is built, in part, on the connections between faculty and industry in the National Capital region. Many of our faculty members participate as commentators in local, national, and international media outlets; many serve as consultants to industry; others retain part-time positions within local industry settings; still others provide their expertise through volunteer work. Thus,
there is a high degree of Mason-community engagement across areas that are currently important regionally, nationally, and internationally, such as health care, conflict resolution, and cyber security.

Several strengths emerged from these sources that related to Mason as an academic institution. These include the incorporation of technology, like Blackboard and social media, to deliver and transmit information; a focus on multi-disciplinary, translational work; and an increase in engagement between faculty and students outside of the classroom, particularly through recent research initiatives at the undergraduate level. Additionally, given its location in a diverse industry region, Mason is able to draw upon academic “practitioners” with ties to industries. These have increased the quality of both faculty members and students, particularly through expanded research contacts, opportunities for collaboration and expanded instructional programming that meets the needs of individuals already in professional employment settings, benefiting both Mason and students. These qualities allow Mason to be more competitive in and strategically engaged with the regional, national and global community.

From a student perspective (in that this was a strength often articulated at student town halls), one of the greatest assets for Mason is the diversity, both of identity and experience, of its students. This diversity is the product of numerous initiatives, including outreach to international students, underserved populations, and opportunities for these populations at Mason. This diversity has contributed to the academic and programming life of the University, in both day-to-day and long-term goals.

It is also important for us to be aware of, and to address weaknesses and threats that could thwart the success of any program we mount. Weaknesses and threats were identified through two primary sources. First was input from the working group, students, faculty, staff, and alumni. The themes that emerged from these analyses are presented in Appendix E. Second were the SWOT analyses prepared by the deans and directors for each of their units. The individual strengths, weaknesses, opportunities and threats raised in these analyses are summarized in tabular form in Appendix F.

In terms of weaknesses, many that were identified can be tied to the lack of incentives for faculty to be as effective as they might be. Specifically, there are few incentives or guidance to try new things, and little room for failure or risk-taking, particularly at a time when faculty members are seen as being spread too thin. This includes a lack of support in the form of time off or financial remuneration for faculty to take advantage of opportunities to develop or redesign curricular offerings, in the use of Blackboard or other technology to support innovative classroom offerings without jeopardizing their research or teaching agendas. The working group also noted that it is difficult for untenured faculty to engage in interdisciplinary research, as this complicates the tenure process. As a result, faculty become tied to discipline-centric research early in their careers, making it more difficult to break out of that mold and engage in research with faculty in other units. Faculty members are also discouraged by the lack of space and

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32 These include health care, personalized medicine, global conservation and biodiversity, technology and the arts, arts policy, conflict resolution, cyber security, forensic accounting and information systems auditing, and global entrepreneurship.
infrastructure for carrying out their teaching and research activities. This weakness has also manifested itself as an obstacle to the integration of classes across programs, academic units, and physical campuses.

Institutional barriers were also cited as a weakness. The current financial model makes the current college structure a weakness as the model provides incentives for individual colleges to capture FTE and not to collaborate in program offerings. Tension also exists between faculty offering individual majors and units offering other curricular offerings, such as study abroad, to students. These issues may often arise from a concern about program quality, but they can leave students in the middle, unable to get the best experience from their time at Mason. In addition, it currently is difficult to accurately assess the Mason student experience. Although the university supports institutional assessment through offices that direct Academic Program Reviews (APR) and assessments of general education, departments are required to finance data collection and analysis. Further, there are no institutional “standards” for such assessment. Although the assessment process must, at some level, be tailored to individual departmental needs, the lack of any consistency in approach across the university makes it difficult to get baseline data on program performance. Finally, the institution is subject to increasing pressures from outside accrediting bodies. These agencies are increasingly dictating the composition of curricula and methods by which student performance should be measured, making it difficult for the university to decide what is best for our students.

In addition to these weaknesses, a number of threats to success were identified. Key among these is the potential loss of key faculty members. Increasingly, our faculty members are being approached by other universities who are able to offer more in the way of salary, student and laboratory support. We've started to lose good faculty members; we are particularly vulnerable to losing more unless regular raises can be reestablished for our faculty. We are also threatened by the changing landscape of financial models for education. At the same time that states are providing less support for higher education, state legislatures are introducing bills to reduce the costs of tuition and fees for students. Coupled with the expansion of for-profit education and community colleges who can often provide coursework at a lower cost, this is a difficult threat to overcome. It has been suggested that we offer additional online coursework to help address this financial gap; however, it is not clear that online courses can be delivered competitively against high profile universities who have already jumped into this market. Finally, the reductions in federal research funding that are likely given the federal deficit, support for research increasingly will need to rely on nontraditional sources of funding.

Commitment:

We commit to the development of an evidence-based process for evaluating existing and new programs.

Summary of Commitments

- Mason will respond to today’s needs and tomorrow’s challenges.
Mason will develop and follow a process for continually identifying important new areas for program development and for reporting on this process on an annual basis.

Mason will develop and implement an evidence-based process for evaluating existing and prospective new programs.

- Mason will lead the Commonwealth in providing educational opportunities to qualified students.
  - Mason will rapidly modify existing academic programs or create new academic programs to provide relevant educational opportunities.
  - Mason will develop extensive research and internship programs.

- Mason will produce the most highly-sought graduates in the Commonwealth.
  - Mason will be the number one choice within the Commonwealth for employers.
    - as evidenced, e.g., by the number of relationships/collaborations with private sector corporations and public sector organizations; number of internship offerings, etc.
  - Mason graduates will be sought after for their critical thinking and writing skills.
  - Mason graduates will be sought after for their commitment to civic engagement and ethical responsibility.

- Mason will be central to the economy of the National Capital region.
  - Mason will lead the region in the amount of relevant research developed/funded.
  - Mason will lead the region in attracting employers seeking to hire our graduates.

- Mason will lead the Commonwealth in applying effective new and emerging learning technologies.
  - Mason will integrate new techniques and teaching approaches with proven teaching methods.

References


Chris Vogel “How MIT Became the Most Important University in the World,” (November 2012), Boston Magazine.


Appendix A: Question 1

Question 1: What are the big and important issues that are confronting the region, the Commonwealth, the nation, and the world?

How are we addressing these issues?

J. Muir and M. Ginsberg

What are the big issues?

Top Tier Issues for the Nation

• The Economy – Domestic and Global
• National and International Security
• Healthcare – Accessibility, Affordability & Cost and Quality
• Energy Independence
• Education
Critical issues for VA: new & emerging issues

- Big Data
- Education
- Civility and Conflict Resolution
- Economic Development
- Global Affairs and International Relationships
- Healthcare
- Information Technology
- Leisure, Tourism and Hospitality
- Non-Traditional Students
- Population Demographics
- Public Administration & Public Policy
- STEM
- Transportation
- Workforce Development

Evidence Base: what the Data suggest

Pathways to Prosperity Project,
Harvard School of Education, Feb. 2011

- No more than 30% of young adults earn a bachelor’s degree by their mid-20s
- Men account for 43% of college enrollment
- Women account for 60% of nation’s grad students
- Need robust pathways from high school, to community college, to 4-year
- More apprenticeship opportunities/work experience (European models)
- Career Academy movement
- Greater employer involvement (National Academy Foundation – career themes plus internships)
The Future of the U.S. Workforce, September, 2012

- Employers looking for employees with more education and skills across every industry
- More jobs with specific technical requirements
- Increased employee diversity
- Highest reporting industries:
  - Health, manufacturing, state/local government, federal government, high tech, professional services

Future Work Skills 2020, Institute for the Future for University of Phoenix, 2011

Key drivers that will reshape the landscape of work

- **Extreme longevity** – increasing global lifespans (Americans over 60 will increase by 70% by 2025)
- **Rise of smart machines and systems** – more workplace automation (systems will free up humans to rethink work)
- **Computational world** – increased focus on manipulating data, thinking about the world in programmable terms
- **New media ecology** – multimedia technologies are transforming communication
- **Superstructed organization** – new generation of organizational concepts and work skills from fields such as game design, neuroscience, and happiness psychology (creation of new training paradigms and tools)
- **Globally connected world** – greater exchanges and integration across geographic borders

Future Work Skills 2020

Key work skills (proficiencies and abilities that will be needed)

<table>
<thead>
<tr>
<th>Transdisciplinarity</th>
<th>Cognitive load management</th>
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<tbody>
<tr>
<td>Social intelligence</td>
<td>Computational thinking</td>
</tr>
<tr>
<td>Sense-making</td>
<td>Cross cultural competency</td>
</tr>
<tr>
<td>Novel and adaptive thinking</td>
<td>Virtual collaboration</td>
</tr>
<tr>
<td>New media literacy</td>
<td>Design mindset</td>
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</tbody>
</table>
Four Core Principles

• Alignment: between high-quality CTE programs and labor market needs
• Collaboration: between secondary and post-secondary institutions, employers, and industry partners
• Accountability: improving academic outcomes and building technical and employability skills, common definitions and performance metrics
• Innovation: systemic reform of state policies and practices

Proposed Reforms, DOE Report

• Clear expectations for high-quality programming
• A more active role for states – in-demand occupations in high-growth industries
• Consortia funding
• Private-sector match
• Within-state competitions to distribute consortia funds
• Common definitions to strengthen data systems and close equity gaps for participation
• Incentives for high performance
• State conditions for success and innovation
• A competitive CTE innovation and transformation fund

DOE Goals

• Equitable and accessible to all students
• Student motivation – increased relevance and rigor
• Added credentials – certificates, degrees, licensures
• Long term career success – greater earning prospects over time
• Employers and industry contribution – program development to fill positions
• Access to highly skilled pool of workers
Conservable Economist, Timothy Taylor (Blog, 11/14/2012)

Predictions
- Emergence of global university brands (small number)
- Deepening role between industry with education
- Universities well positioned to bring credibility and to act as curators of content
- Higher ed model to be dramatically disrupted

Virginia Governor’s Commission on Higher Education: Reform, Innovation and Investment, 11/20/2012

- 100,000 more degrees
  - More Va students enrolled
  - More degree completion programs
  - Improve retention/graduation rates
- STEM and other high-demand degrees
  - Public/private collaborative efforts, K-12 comprehensive plan to increase high-demand degrees

Some Potential Considerations
- Big Data, Kirk Borne
- Baltic University, Frank Mannheim,
  - Consortium of 225 European universities and institutions, role for Mason
  - “Sustainable development, environmental protection, and democracy” in Baltic region
  - Cooperative university projects and courses
Committee Thoughts About Emerging Programs

- Increased support for Military veterans
- Adult learning completion pathways
- Greater connections to NOVA
- Opportunities in robotics, biochemistry, carbon-neutral energy sources
- All branches of IT especially intelligence and security applications
- Entertainment such as computer gaming and social media
- Geographic Information Science opportunities

Innovative models & strategies

- Partnerships Within and Beyond the University
- Applied Professional Experiences & Co-Op Learning
- Traditional and/or Adult Learners & Non-Traditional Students
- Convergence, Inter-Disciplinary & Collaborative Approaches
- Liberal Arts Education vs. Technical Training or BOTH
- E-Learning – Hybrid & On-Line & Other Delivery Systems
- “Mason Think Tank on the Future” – Durable Structure at the University
Appendix B: Question 2

Question #2
How can we identify emerging fields we should be paying attention to and pioneer?

What should be GMU’s approach?

Universities and Innovation Ecosystems – Tapan Munroe in “Is Silicon Valley Sustainable?”
What has been the experience of other universities and organizations?

- Corning Growth and Strategy Council – Investing in Future Portfolios
- Harvard Theme School

Corning Growth and Strategy Council

What should be GMU’s approach?

- An ongoing process – not a one-time effort.
- Foster and facilitate the regional innovation ecosystem and Mason’s associated role.
- Draw on ideas from both outside the University/academia and inside Mason.
- Recognize that recommendations can lead to changes in existing programs or the way programs are taught – not solely creation of new programs.
From Inside Mason

• Nurture existing “incubators” of innovation at GMU and tap them for ideas
  – e.g., the Krasnow Institute
  – e.g., [another example??]
• Draw on institutional knowledge of deans and directors through strategic planning sessions run by outside facilitators
• Hold annual focus groups of new faculty each fall as they come to campus

Things we might change at Mason:

When Hiring: Part of the interview process should include asking applicants what they like about GMU, what they don’t like and how THEY would change it and innovate and what ideas they would bring to the table from their former institutions

When Faculty retire or leave we should ask them a similar set of questions – we need a detailed exit interview not a quick survey that does lip service to the process

We need to do the same with a sample of students from all our undergraduate and graduate programs

From Outside the University

• Create a Presidential advisory committee of “big thinkers” from outside the University (e.g., business and tech leaders, journalists, foundation leaders, think tanks, etc.).
• Consider asking one of the large No.Va.-based consulting firms (e.g., Booz Allen, SAIC) to partner with the University in identifying on-the-horizon issues.
Some resources that we should consider are:
1. The Nissan Report
2. Artists, Craftsmen and Technocrats
3. An Optimist’s Tour of the Future

Organizational issues

• **Challenge:** How to keep the “emerging fields/ideas” issue on the “front burner” in a decentralized university?

• **Suggestions:**
  – Ensure one staff member in the President’s Office is guiding this initiative.
  – Commission short white papers to promote emerging fields identified.
  – Sponsor a Presidential lecture series on these new ideas/fields.

Questions

• How to keep the process fresh, energetic and non-bureaucratic?
• How to provide incentives and lower barriers to encourage multidisciplinary programs?
• How best to involve BOV? Faculty? Alumni? Students?
Question #3: What are other universities doing to provide innovative and economical paths to teaching and learning and degree completion?

JT Cantiello and JJ Pancrazio

Overview

• Defining the Problem
• General Concepts for Innovative Learning
• University/Educational Examples – Innovative Programs
• Environmental Influences - State Legislative Perspectives

Defining the Problem

• Once #1 in college degrees held by 25-34 year olds, the United States is now 12th out of 36 developed nations

• Graduation rates lag, tuition rates rising, unemployment rate for recent graduates is high, and graduates graduate with large debt.
  – Tuition at 4 year institutions increased by 250% over 3 decades

• Time needed to complete degree increased markedly in recent decades.
  – Students who complete degrees now do so at a slower rate than those in earlier generations.
  – Proportion of completers within four years fell from 57.8% to 43.6%.

Kirchner, 2012
Defining the Problem

• National Center for Education Statistics
  – Enrollment grew by 9% in the 1990s and 38% from 1999 to 2009.
• Graduation rates have stagnated.
  – US from 1st to 9th place
• College completion a Priority from Obama Administration
  – The economic issue of our time

Jenkins, 2012

Defining the Problem

• Academically Adrift – lack of writing, critical thinking and analytical thinking skills. No significant improvement between 1st and last semesters
• Not preparing students for the modern workforce (Kirschner, 2012).
• “Collegiate attainment has not kept pace with increases in demand for skilled workers”
• Number of hours students who have outside employment has been increasing:
  – 9.5 hrs/week in 1972
  – 12.4 hrs/week in 1992
  – 13.2 hrs/week in 2005

Bound and Turner, 2010

Next Gen Learning

• Next generation learning reflects different ways of thinking about goals, methodologies, and systems.
• How to engage today’s student?
  – A deepened understanding of learning: how, where, and why students learn most effectively
  – A deepened understanding of learners: what’s required to engage and meet students’ needs
  – The recognition that the world has changed: requires a higher level of achievement for much higher percentages of students.

Calkins and Vogt, 2012
Attributes of Next Generation Learning

- Personalized
- Flexible
- Interactive and engaging
- Relevant
- Organized around student’s own progress/goals
- Constantly informed
- Collaborative
- Agile and Supportive
- Challenging, but achievable
- Available

Calkins and Vogt, 2012

Next Gen Learning

- Goals
  - Defined and measurable
- Methods
  - Learning designs that are personalized, competency based, and integrated with technology
  - Effective implementation (restructuring roles and resources).
- Environments
  - Enabling conditions internally and externally (organization policy vs. public policy). Pilot new ideas
  - Sufficient investment, change management capacity, openness and cost effectiveness.

Calkins and Vogt, 2012

Next Gen Learning

- For example:
  - Texas A&M Commerce – Affordable Baccalaureate degree program.
    - The Bachelor of Applied Arts & Sciences (BAAS) degree and Bachelor of General Studies (BGS) are highly flexible programs.
    - Many military, veterans, and corporate employees regard these degrees as “degree completion programs”.
    - Students can transfer up to 85 hours to A&M-Commerce from approved/accredited institutions.

Calkins and Vogt, 2012
Next Gen Learning

- Southern New Hampshire University’s Pathway Project
  - Self-paced, competency-based associates degree in general studies online.
  - Reduces cost, increases access, focuses on learning that is relevant to employers and students. Uses a dynamic knowledge map to track progress. Individualized

Innovative Programs

From www.onlineuniversities.com – 10 most innovative colleges in the country:

The university model: BYU-Idaho (St. Rexburg, ID)
Features:
• Operates year-round: 3 semester per year calendar where students are admitted to 2 of 3 semesters, allowing thousands of students to attend each year.
• Result: serves 50% more students; save 20% cost per student.
• Other features:
  • Centered on a faith-building educational process known as the Learning Model and emphasis on Personal honor – can be adapted to other themes: e.g., ethics, social awareness, or diversity.
  • Hybrid online and in-class learning environments

Innovative Programs

From www.onlineuniversities.com – 10 most innovative colleges in the country:

Online Education - National University:
• 70 degree programs 100% online.
• Year-round classes
• Courses are one per month
• Based in San Diego, CA – 30 locations through CA and NV
• “National University Leads California in Preparing Credentialed Teachers for 12th Consecutive Year”
• “National University Embarks on Fundraising Campaign to Establish a Scholarship Fund for Military Veterans”
• “National University Announces Online Master of Science in Health and Life Science Analytics Program”
• Accredited since 1977
Innovative Programs
From www.onlineuniversities.com – 10 most innovative colleges in the country:
Technology – Seton Hill University:
• Faculty & students – 16Gb iPad & MacBook Pro.
• University owns and supports the technology without restrictions. After 2 years, Seton Hill replaces the laptop with a new one that students can take with them when they graduate.
• “creative literacy” – driven by students learning best by attending lectures and writing papers; others excel when given the opportunity to research a topic and create a video or an audio podcast.
Greensburg, PA

Innovative Programs
Math Emporium at VA Tech
• A learning center for the study of mathematics. There are 537 Apple Computer workstations arranged in hexagonal pods.
• Three courses are taught entirely at the emporium: college algebra and trigonometry, differential calculus and introductory linear algebra. Another half dozen math courses have an emporium component.
• Open to anyone with a valid Virginia Tech ID 24 hours a day, 7 days a week when semester classes are in session.
• Off-site at renovated mall space: an on-campus facility would have cost about $19 a square foot to build, while the mall department store could be leased for about $1 a square foot.

Decentralized instruction: Some Virginia Tech students have complained about not having a teacher in a classroom. But Chuck Hodges, math emporium manager and a former math instructor, responds, “No, you’ve got a dozen.” Help is available from math faculty, graduate students or other undergraduates most days and nights.

Innovative Programs
• Students learn at own pace, use technology to communicate with faculty and other students.
• Concept engagement occurs in classroom with instructor as a guide.
• Khan Academy – Salman Khan 2011 TED Talk (2 M hits on YouTube): video lectures are assigned as homework; then students work on exercises in class where the teacher can more easily assist and remediate. “Flipping the classroom” has become a crucial part of the story that Khan repeats in his frequent talks and media appearances.
• Harnessing internet accessible content.
• Tools: Educreation, ShowMe, Sophia, Knowmia


The Threat of MOOCs?

A massive open online course (MOOC): online course aimed at large-scale participation and open access via the web. Features:

- Open access. MOOC participants do not need to be a registered student in a school to “take” a MOOC, and are not required to pay a fee.
- Scalability. Many traditional courses depend upon a small ratio of students to teacher, but the “massive” in MOOC suggests that the course is designed to support an indefinite number of participants.
- MOOCs typically do not offer credits awarded to paying students at schools, although some early adoption for certification.
- Several MOOC-type projects have emerged independently, such as Coursera, Udacity, and edX (led by Harvard & MIT).
- Selective membership - Georgetown just joined edX very recently.

Going “Mooc-ulear”
Disruptive Innovation?

- Recently, the University of Washington said it was the first American university to offer credit for MOOCs, credit that could be used toward a degree from the school. The university’s online courses include those in computer science, information security and risk management.
- UW credit for instructor-enhanced courses.

Posse Foundation

- Posse is a college access and youth leadership development program for students from diverse backgrounds.
- A Posse is a multicultural team made up of 10 students. It acts as a support system to ensure that each Posse Scholar succeeds and graduates from college.
- Posse Scholars receive four-year, full-tuition leadership scholarships from Posse partner colleges and universities.
- Does Posse Work?
  - Since 1989, >70 percent of Posse Scholars have either founded or become leaders of campus organizations.
  - Posse Scholars persist and graduate at a rate of 90 percent. Posses help the retention of non-Posse students who are not part of the majority culture by fostering an inclusive campus community.
Initiatives for Degree Completion

• Completion Innovation Challenge: Grants from Bill and Melinda Gates Foundation to states to boost degree completion rates.

• Project Degree Completion – 490 4-yr public universities and colleges pledge to boost college completion to 60% by 2025.

Chronicle of Higher Ed, Feb 22, 2011

Legislative Action

• FL, OH, OK, PA, IN, TN, WA legislators using incentive funding. Funding models based on course completion, time to degree degrees awarded etc.
• Speed up graduation time - A 2006 study by the Florida Legislature found that credit hours taken beyond those required to graduate cost the state $62 million each year. States can set caps of 120 credits for a bachelor’s degree and 60 credits for an associate degree. Texas discourages excess credit hours by removing the state subsidy for students who exceed a certain number of credit hours.
• State supported enhancement of on-line learning – Montana
• Statewide Efficiency Councils: in Ohio and Maryland to increase higher education efficiency in energy, technology, administration, academics and procurement.

Legislative Action

• Rick Perry Pushes $10,000 College Degree: Under a plan unveiled in 2011, Texas Gov. Rick Perry challenged institutions in his state to develop options for low-cost undergraduate degrees. Limiting the cost of a bachelor’s degree to no more than $10,000,
• 10 Texas colleges so far which aim to "leverage Web-based instruction, innovative teaching techniques and aggressive efficiency measures" to drive down the cost of a degree.

The Texas Science Scholar Program
$10,000 (40% of usual tuition) Bachelor of Science Degree to qualified students seeking to study on a full-time basis. Eligible disciplines include:
- Chemistry (All Tracks)
- Computer Science
- Geology (All Tracks)
- Information Systems
- Mathematics

http://www.utpb.edu/texassciencescholar/
Appendix D: Question 5

What factors should we consider in evaluating new or existing program offerings?

Criteria to...

• Create new programs
• Prioritize existing programs
• Terminate existing programs (?)
• Use same or different criteria?

What This Group Came Up With

1. Cost
2. Distinctiveness/Uniqueness
3. Compatibility With Location (cf. Regional Strategy Working Group)
4. Benefits to students
   a) Employability/Marketability
   b) Salary
   c) Critical Thinking skills
   d) Becoming “well rounded”
5. Benefits to Mason
   a) Reputation/prestige
6. Benefits to Society
   a) Social Mobility
7. Demand (Enrollment)
8. Sustainability
9. Inclusiveness
   a) Interdisciplinary nature
   b) Access to various sub-populations of students
• **Additional Criteria**
  – Be assured that need for a program exists, and that revenue vs. cost remains in the black
  – Project future program growth

• **Advice**
  – Use good data
  – Honor your results. Some of them will be disconcerting
  – Emphasize that faculty must adopt a university perspective and not simply defend their discipline
  – Employ procedural justice
None of the institutions in this study tracked the savings from closures.

Institutional decision makers for the most part did not use the criteria they specified.

because institutional leaders did not invoke the stated decision rules but used alternatives, one might conclude that the process of determining programs for closure may have identified the actual criteria.


• Cost Model
  — Comparative Cost Analysis (across institutions)
  — Cost-Benefit Analysis
  — Reflections
    • Costs are difficult to ascertain
      — How to allocate capital costs such as library, central administration, parking services, etc., to each program may not lend itself to a simple computation.
    • Some benefits are nonquantifiable (and influenced by ideology)

• Quality Model
  — Difficult to operationalize quality
    • Does quality refer to input (students, faculty, administration), the conversion process (teaching, research techniques, campus life), or output (graduates, publications, services)?
    • These elements include students admission data (e.g., GRE, SAT), faculty productivity (teaching loads and publication records), and comments from program graduates
• **Market Model**
  – Simple market model: Evaluate enrollment in different academic programs across institutions within a particular system (for example, a state system).
  – Relative market share model: Compute the program enrollment within a system to identify a system-wide growth rate and determine a specific academic program share of the market.
  – Reflections:
    • By emphasizing enrollment alone, the model relies on the popularity of programs without considering that some programs may be important yet unpopular.

• **Employment Model**
  – A type of Market Model
  – Uses post-graduation employment statistics
  – Employment forecast approach: Relies on labor data to forecast demand for various occupations
  – Employment efficiency approach: Compiling a list of graduates from an academic program and calculating what percentage of them are employed in their primary areas of training
  – Reflections:
    • In rapidly changing societies typical in market economies, attempts to forecast employment are often fraught with difficulties

• **Political Model**
  – Not as irrational an approach as many may think
  – Uses information from constituents to decide
    • Decisions influenced by the size or impact of pressure groups
    • May also reflect social needs (e.g., caters to a specific demographic)
  – Reflections:
    • As long as higher education receives a substantial amount of revenue from the government, the political model will continue to influence decisions about what programs are offered
Appendix E: Question 4

Question 4: What are our strengths and weaknesses in learning/teaching innovation and what could be done to strengthen/build that capacity?

November 19, 2012

SWOT Analysis

• Done by each college/school/unit
• Not restricted to learning/teaching innovation
• May serve to provide some context
• Full analyses available on Blackboard
  – Summary table also on Blackboard

Strength “Themes”

• Curricular innovations (not specified)
• Technology-savvy information delivery
• Focus on multi-disciplinary, translational work
• Academic “practitioners” & ties to industry
• Community engagement
• Engagement of students with faculty outside the classroom
• Diversity (e.g., ACCESS, MasonLIFE)
• Instructional programming that meets the needs of individuals already in professional employment settings
• Specified topics:
  – health care, public health, personalized medicine, global conservation and biodiversity, technology & the arts, arts policy, conflict resolution, cyber security, forensic accounting and information systems auditing, global entrepreneurship
Weakness “Themes”

- Accreditation standards
- Lack of assessment systems
- Infrastructure (Space & instrumentation)
- Compensation (faculty, staff, UG/G students)
- Faculty development for curricular re-design

Threats “Themes”

- Loss of key faculty members
- Expansion of for-profit education and community colleges
- Insufficient online offerings (and competition from high profile universities in this market)
- Cost (affordability)
- Temptation to devolve into “training” model
- Changing landscape of financial models for education
- Reduction in federal research funding

Opportunities “Themes”

- Use online education to develop a “pipeline” of interest in our programs
- International expansion
- New programming:
  - Intersection of health and human services; impact of immigrants; social entrepreneurship (impact entrepreneurship); global entrepreneurship; biomedical education, global issues on environment, food security, energy; STEM; executive interdisciplinary; work force development; translational neuroscience; transportation; cyber infrastructure policy; energy and sustainability; nanotechnology; nuclear policy and security; robotics; neural engineering
From our Discussion Board

Strengths

• Use of Blackboard to supplement classroom
• Experiential learning (OSCAR, QEP, internships, global opportunities)
• Innovative teaching through technology use (twitter, facebook, Wolfvision, integration of media)

Weaknesses

• Use of Blackboard as replacement for classroom discussion
• Integration classes across programs
• Faculty spread too thin
• No incentives (time, money, or guidance) to try new things
• Interdisciplinary research makes tenure difficult
Institutional Barriers

- Fitting study abroad into a major
- Current college structure

Other Items?/Next Steps

- Remembering that focus is on teaching/learning innovations and how we can strengthen/build?
### Appendix F: Summary of SWOT from all Colleges/Schools

<table>
<thead>
<tr>
<th>College of Education and Human Development</th>
<th>Strengths</th>
<th>Weaknesses</th>
<th>Opportunities</th>
<th>Threat</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>• Nationally respected academic programs in fields such as Special Education, Athletic Training, Counseling and Development, Learning Technologies, Math and Science Education, and Education Leadership – among other strong programs – authentically linked to the core values of the college;</td>
<td>• A curricular model that is linked (at least in education and to a lesser extent in other fields within the college) to a very restraining set of state and national accreditation standards, particularly in teacher education. This external “inhibitor” can have a negative impact on our ability to be creative, innovative, and “edgy.” It is a structural concern about which we have relatively little control, yet it can have a rather dramatic and limiting impact;</td>
<td>• The construct of “human development” as an orienting framework for the college opens the door to greater “degrees of freedom” in terms of the substantive areas engaged within the CEHD – especially from the perspective of a cross-college and interdisciplinary approach that could engage the direct involvement of many sectors of the university</td>
<td>• Competition for students, particularly at the master’s and certificate levels, from local, regional, and national universities;</td>
</tr>
<tr>
<td></td>
<td>• Relationships with the community are a particular strength of the CEHD and unusual in depth and breadth including a strong network of professional development schools and other applied settings, that provide an interconnected network for internships and “real world” experiences;</td>
<td>• A need for better data management and assessment systems that integrate “value added” models of student achievement and program accountability;</td>
<td>• Programs also can be conceived as a direct consequence of the dynamic interface between the “university as incubator” and the “university as service provider.”</td>
<td>• Need for greater price competitiveness and greater flexibility in settings and delivery systems, for our courses, programs of study, research, consultation, and professional development activities;</td>
</tr>
<tr>
<td></td>
<td>• The creativity and entrepreneurial spirit of our faculty is an important asset and strength;</td>
<td>• Despite the size of the CEHD faculty (about 130 FT faculty with 74% being tenured or on the tenure track), there are relatively few senior faculty, and even fewer senior faculty with distinguished national reputations and large portfolios of funded research;</td>
<td>• Development of a full range of (online) tuition supported and no-fee professional development programs that builds a “pipeline” of interest in our programs and leverages initiatives being built by other universities – these would be regional, national, and international in scope;</td>
<td>• Reduced third-party tuition support, and available personal resources, for (CEHD) graduate-level education and a growing perception that well-paying jobs and career advancement are scarce;</td>
</tr>
<tr>
<td></td>
<td>• A growing research portfolio and an associated national reputation for excellence, with some faculty holding leadership positions in national organizations;</td>
<td>• The research portfolio has grown dramatically in recent years in terms of both the number of proposals submitted and projects funded. However, the decline (nationally) in funding opportunities and the increased competitiveness for sponsored research funding could compromise the trends of increased research funding support and associated faculty productivity as well as doctoral student interest in our programs;</td>
<td>• Development of new initiatives – the settings in which our graduates will work rapidly are changing and our academic programs also must change to reflect the “new reality” of the workplace. Aggressively seek major gifts, private philanthropy, and corporate support including the sponsorship of endowed senior faculty chairs and the naming of the college and our building(s);</td>
<td>• The loss of key faculty members through retirement or “academic mobility”;</td>
</tr>
<tr>
<td></td>
<td>• Relationships with well respected “first-tier” universities from other parts of the world is an important, positive asset of the college;</td>
<td>• The growth in both undergraduate (in RHT) and graduate (in GSE) student enrollment has been impressive, yet is subject to stabilization, or perhaps a modest decline;</td>
<td>• Need for greater price competitiveness and greater flexibility in settings and delivery systems, for our courses, programs of study, research, consultation, and professional development activities;</td>
<td>• As the context and demands of the workplaces that we prepare students for continue rapidly to change, there is a risk that our academic programs could be &quot;behind the curve&quot; without keeping pace with the breadth and depth of such systemic changes – currency is critical;</td>
</tr>
<tr>
<td></td>
<td>• A community of support for the college is growing among alumni as well as business and corporate leaders within the region as our “development program” achieves modest success and matures;</td>
<td>• The reduction in enrollment dollars to the academic units beginning in 2008</td>
<td>• Building new “non-traditional” partnerships and alliances.</td>
<td>• The need for greater investments in sophisticated marketing and communications, technology and other necessary infrastructure supports.</td>
</tr>
<tr>
<td></td>
<td>• The culture of the CEHD is a particularly important asset of the college:</td>
<td>• The loss of key faculty members through retirement or “academic mobility”;</td>
<td>• The playing field often gets crowded and we sometimes reach out to a</td>
<td></td>
</tr>
</tbody>
</table>

### Program Innovation & Growth

<table>
<thead>
<tr>
<th>College of Health and Human Services</th>
<th>Strengths</th>
<th>Weaknesses</th>
<th>Opportunities</th>
<th>Threat</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>• Because we had the opportunity to create a new college and to identify high</td>
<td>• CHHS contains disciplines and programs that are independent colleges at many</td>
<td>• Because we had the opportunity to create a new college and to identify high</td>
<td>• The playing field often gets crowded and we sometimes reach out to a</td>
</tr>
<tr>
<td></td>
<td>The reduction in enrollment dollars to the academic units beginning in 2008</td>
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</table>

54
<table>
<thead>
<tr>
<th>College of Humanities and Social Sciences</th>
<th>College of Science</th>
<th>Program Innovation &amp; Growth</th>
</tr>
</thead>
<tbody>
<tr>
<td>• World Class Faculty</td>
<td>• The College has pursued aggressive strategies to grow core areas of academic research and entrepreneurial strengths</td>
<td>• To realize our goal for a full range of medical education offerings, the College and the University should develop a plan based on expanding the key biomedical education programs and external partnerships.</td>
</tr>
<tr>
<td>• Highly Ranked Programs</td>
<td>• Some strengths that differentiate COS</td>
<td>• Due to the economic factors our inability to maintain competitive salary bases has resulted in the “poaching” of high performing faculty by other institutions.</td>
</tr>
<tr>
<td>• Focus on Research</td>
<td>• In the hard sciences a lack of scientific infrastructure, particularly specialized lab space and instrumentation, limits the College’s ability to expand programs and secure additional funding sources.</td>
<td>• Expansion of for-profit education and the expanding role for community colleges: In the past such units have not been significantly interested in the areas inhabited by social sciences and humanities. However, general education now has become a significant target. This could be a problem, not only for us, but for the entire university.</td>
</tr>
<tr>
<td>• Cutting Edge Centers</td>
<td>• With the likelihood that federal funding for research will decline, the College needs a higher market share and will continue to attract scholars with great ability.</td>
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</tr>
<tr>
<td>• Curricular Innovations in Teaching</td>
<td>• More significant is the potential for donor-funded research. Donors do not give across the board, and CHSS has traditionally been the beneficiary of greater interest than other units.</td>
<td>• More significant is the potential for donor-funded research. Donors do not give across the board, and CHSS has traditionally been the beneficiary of greater interest than other units.</td>
</tr>
<tr>
<td>• Active Communications</td>
<td>• We are increasing our efforts to support work on the impact of immigrants, social entrepreneurship, and economics. We have solid connections in these areas and hope to expand them.</td>
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<tr>
<td>• Technology-Savvy Information Delivery</td>
<td>• General education is also the easiest to make more efficient while continuing to improve in quality. Because this area of education is provided most often by multiple sections of the same course, investment in distance education and in other means of cost saving are possible and likely.</td>
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<td></td>
<td>• Embark on new areas to reach groups of students that have heretofore been underserved.</td>
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</table>

Priority areas, CHHS programs reflect the future of health care.  
- All of our academic programs were created with accreditation, certification, or licensure standards in mind. This process has enabled the planners to create competitive, high quality programs from the beginning and to consider modifications that would be relevant in the near and longer term.  
- The new presence in the area of public health has gained a great deal of attention throughout the Commonwealth. Currently there is no school of public health in Virginia.  

(from $7500 to $5000) came at a time when our new graduate programs were ready for full implementation. This reduction had a tremendous negative impact on our ability to hire senior faculty members with successful programs of research.  
- Academic space needed to support successful academic programs and specialized areas for high quality programs of research. The plans for Academic VII/Research III, the planned home for the college, have been delayed since 2008. With the plans somewhat back on track, the new challenge is to find $20 million in gifts to support the business plan for the college.  

Universities including colleges of nursing, social work, and community health in schools of public health. The organization of a multidisciplinary college presents the opportunity to build cross discipline academic, research and practice that intersects the programs in health and human services.  
- Being in proximity to Washington, DC and the health policy arena give us a distinct advantage over other programs in the Commonwealth and across the United States. Our competition in the region represents some of the most highly regarded programs in the nation.  
- Although the CHHS programs are largely new, community engagement and faculty practice opportunities in the region represent two of the greatest opportunities for future success.  

Community partner only to find that Hopkins or another university has gotten to the partner first and with more to offer.  
- The downside of growth and maturation is that more is at stake and risky decisions are sometimes harder to absorb or correct. The greatest threat appears to be our ability to find the right balance between opportunistic growth versus a vision for what we wish to be by the 50th anniversary of the university in 2022.
<table>
<thead>
<tr>
<th>College of Visual and Performing Arts</th>
<th>from units at other universities include the College’s focus on translational research, new interdisciplinary programs, unique learning experiences, and new facilities.</th>
<th>Seizing unique opportunities and tactical planning set the stage for COS to lead personalized medicine into a new era. These efforts have resulted in the formation of new spinoff companies and demonstrate the University’s leading position in translational research.</th>
<th>The Biomedical Research Laboratory (BRL), built in 2010 and commissioned in 2012, allows the University to conduct state of the art research in specific fields in bio-defense and infectious diseases.</th>
<th>Building on a longstanding relationship between the University and the Smithsonian Institution, COS and the College of Humanities and Social Sciences formalized the Smithsonian-Mason Global Conservation Studies Program to provide students and career professionals an extraordinary opportunity to study global conservation and biodiversity.</th>
</tr>
</thead>
<tbody>
<tr>
<td>College of Visual and Performing Arts</td>
<td>Faculty artist practitioners</td>
<td>Lack of resources in faculty development for curriculum redesign has limited the College’s presence in online education development.</td>
<td>Innovative programs that integrate service to the region</td>
<td>Recognized university service and operations support</td>
</tr>
<tr>
<td>College of Visual and Performing Arts</td>
<td>Vibrant community engagement and support</td>
<td>Insufficient graduate student compensation severely limits the College’s ability to attract highly qualified full-time graduate students.</td>
<td>Innovative new programs and approaches</td>
<td>Experienced professional staff</td>
</tr>
<tr>
<td>College of Visual and Performing Arts</td>
<td>Integrated model which reflects the “real world” of arts and culture</td>
<td>Not yet competitive with scholarship support, particularly in music and dance</td>
<td>Two badly outdated key instructional/performance facilities (Harris, PAB, CFA)</td>
<td>Steady enrollment and funding growth</td>
</tr>
<tr>
<td>College of Visual and Performing Arts</td>
<td>Growing international diversity and relations</td>
<td>Rapidly aging Center for the Arts facility</td>
<td>Development and specific training programs in high demand STEM fields and executive interdisciplinary premium priced programs</td>
<td>Innovative new programs and unique learning experiences</td>
</tr>
<tr>
<td>College of Visual and Performing Arts</td>
<td>Major facilities</td>
<td>Two badly outdated key instructional/performance facilities (Harris, PAB, CFA)</td>
<td>The College has been very active in creating collaborations across education, government and industry that result in program development/expansion and the potential for additional resources. This approach of partnership development will lead to additional opportunities in the future.</td>
<td>Experienced professional staff</td>
</tr>
<tr>
<td>College of Visual and Performing Arts</td>
<td>Experienced professional staff</td>
<td>Accelerate innovation with the arts and, technology, education and business, public policy and law</td>
<td>Other opportunity areas that need attention are work force development</td>
<td>Strong support from Mason’s central</td>
</tr>
<tr>
<td>College of Visual and Performing Arts</td>
<td>Steady enrollment and funding growth</td>
<td>International expansion, including branch operations in Korea and China</td>
<td>Regional expansion of the role of the Arts at Mason</td>
<td>Strong support from Mason’s central</td>
</tr>
<tr>
<td>College of Visual and Performing Arts</td>
<td>Innovative new programs and approaches</td>
<td>Regional expansion of the role of the Arts at Mason</td>
<td>Establishing and mobilizing an aggressive fundraising campaign</td>
<td>Innovative programs that integrate technology with the arts, and in arts policy</td>
</tr>
<tr>
<td>College of Visual and Performing Arts</td>
<td>Recognized university service and service to the region</td>
<td>Expanding and supporting an aggressive fundraising campaign</td>
<td>Explore new models for resource development through Game Design and through the CFA and Hylton</td>
<td>Strong planning approach to programs and facilities expansion</td>
</tr>
<tr>
<td>College of Visual and Performing Arts</td>
<td>Innovative programs that integrate technology with the arts, and in arts policy</td>
<td>Use fundraising and other revenue streams to accomplish the new facilities master plan for the College</td>
<td>Establishing and mobilizing an aggressive fundraising campaign</td>
<td>Strong planning approach to programs and facilities expansion</td>
</tr>
<tr>
<td>College of Visual and Performing Arts</td>
<td>Strong support from Mason’s central</td>
<td>The lack of start-up funding severely limits the College’s ability to attract high performing faculty from other institutions.</td>
<td>Insufficient on-line offerings make the College vulnerable and less competitive with institutions with significant online offerings. The College is working to develop a robust set of undergraduate and graduate on-line offerings so that students can decide if they wish to pursue a hybrid course offering to maximize their time and focus.</td>
<td>Insufficient on-line offerings make the College vulnerable and less competitive with institutions with significant online offerings. The College is working to develop a robust set of undergraduate and graduate on-line offerings so that students can decide if they wish to pursue a hybrid course offering to maximize their time and focus.</td>
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**Program Innovation & Growth**
| Honors College | Our unit is distinguished from many other Honors Colleges by the close connection between lower division students and research faculty, not only in the classroom and through academic mentoring, but also in the freshman residence through the Faculty Liaison program that brings students and faculty together informally outside the classroom. |
| Global Achievements: | We have also recently been approached by the Penny and E. Roe Stamps Foundation, an organization that funds merit-based scholarships at 25 prestigious institutions around the nation. They are interested in partnering with Mason and the University Scholars program to fund scholarships that cover the full cost of attendance plus additional grants for experiential learning (research, international travel, etc.). |
| | We also lack sufficient and independent resources to staff our courses with full-time faculty. |
| | We do not have sufficient, visible, or secure space for our offices, activities, or residences. |
| | We do not have an HC-specific Development officer or an External Board. |
| | Our relative lack of funding for merit-based scholarships and need-based grants prohibits us from recruiting top-flight students who receive more comprehensive offers from other institutions. |
| | In addition, to make our student body more competitive for the kinds of prestigious scholarships that will secure our place among the great public universities, Mason needs to recruit and prepare talented students from diverse populations. |
| Most significant accomplishments: | The current popular media meme that the cost of traditional higher education is not worth the money is based in part on a misconception of what really happens at a University and the growth that students make in the classroom, by interacting with other students and their faculty, and outside of the classroom through service, research, and community involvement. |
| o The development of a truly multi-disciplinary curriculum that is relevant for students in all undergraduate majors. | The Merten Scholarship and the proposed McGuire Prettyman Scholarship will begin to provide solutions to two of our weaknesses: our relative lack of scholarship funding, and the obstacle to a diverse student body exacerbated by this deficit. |
| o An advising structure that guides students not only through their course work but also to the kinds of research, service, and study abroad opportunities that provide them with experiences and connections that will strengthen their job, fellowship, and graduate school applications; | We may also benefit from the close connections between lower division students and research faculty -- especially in the intellectually disabled students of the MasonLIFE program, the international students in the ACCESS program, and with local non-profits through Leadership Fairfax. |
| o a vibrant and supportive student culture, increasingly known in the larger community for its leadership and service especially in connection with the intellectually disabled students of the MasonLIFE program, the international students in the ACCESS program, and with local non-profits through Leadership Fairfax. | | |
| | Global Achievements: |
| o Working with our Fellowship Office, in the last two years | Development Strategy: Mason’s current outreach to potential donors does little to highlight student achievement or to engage potential donors with current students -- who provide evidence of the impact a gift can have. Our students and our programs are ideal resources. |
| | Other sources of revenue for the university and in support of the HC: Continued development of the HC will continue to strengthen our out-of-state undergraduate pool. |
| | Opportunities to strengthen connections within Mason and between Mason and the larger community. |

Program Innovation & Growth
| School for Conflict Analysis and Resolution | Avoiding Growing Too Large and Silos: The Institute is almost unique with regards to institutes at other universities 1) because it is actually an academic unit and an “institute for advanced study” and 2) because the science program is centered at the intersection of neuroscience, cognitive psychology and computer science. | Global: The Institute is poised to build a significant international presence in Europe and Asia through its leadership in the Decade of the Mind Project and its new exchange agreement with The Humboldt University in Berlin. | Nobel Scientific DNA | US Sponsored Support: The Institute is heavily dependent on sponsored research. |
| Krasnow Institute for Advanced Study | CSS Critical Mass: One of the Institute’s two organic academic departments lacks critical mass (CSS). Program growth in CSS will be limited, not by demand, but by faculty size. | Neuroinformatics: The Institute has an excellent opportunity to take the lead in the Connectome Project with the work of Giorgio Ascoli’s Center with its NIH/DOD sponsored research on the mammalian hippocampus (which subserves learning and memory and is specifically damaged in Alzheimer’s Disease). | Recognized as a Leader | Executive Education: The new partnership with the Santa Fe Institute could build significant revenue streams in the future and might potentially lead to deeper partnerships. |

| | Brain Imaging Center: The Institute’s human brain imaging facility is structured to put the fiscal affairs of the academic unit at systemic risk due to volatility in imaging center revenues are large compared with the total Institute budget. | CSS Programs: As it has already in Europe, US Computational Social Sciences will mature as a discipline and when it does, Krasnow is positioned to be a world leader in the field. | Peer Reviewed and High Impact | Translational Neuroscience Partnerships: The existing translational neuroscience collaboration with Inova is now poised to grow as Mason combines its existing strengths in basic neuroscience with Inova’s neuroscience department to approach major problems such as TBI and PTSD in returning war veterans. |
| | Building Wet Lab Infrastructure: The Institute’s shared infrastructure is not adequately insured against breakdown and damage (e.g. vivarium equipment, autoclaves, cold rooms). | Executive Education: The new partnership with the Santa Fe Institute could build significant revenue streams in the future and might potentially lead to deeper partnerships. | Recognized as a Leader | Translational Neuroscience Partnerships: The existing translational neuroscience collaboration with Inova is now poised to grow as Mason combines its existing strengths in basic neuroscience with Inova’s neuroscience department to approach major problems such as TBI and PTSD in returning war veterans. |
| | The first weakness results from our success in growing the field and encouraging the establishment of new programs of conflict resolution in other universities, which now are competitors drawing students to other programs. | Academic integration: There is no other program in the world where the four degree-granting programs can work together the way they can here. | Peer Reviewed and High Impact | Translational Neuroscience Partnerships: The existing translational neuroscience collaboration with Inova is now poised to grow as Mason combines its existing strengths in basic neuroscience with Inova’s neuroscience department to approach major problems such as TBI and PTSD in returning war veterans. |
| | The strong identification of S-CAR with its own past can also be seen as a weakness, especially if this leads us to ignore the riches of intellectual production expressed elsewhere. | The evolution of the narrative approach to conflict resolution could have implications not only for the field as a whole but also the capacity of the school to tap into large-scale multiparty processes that require a collaborative frame that is challenging to identify when competing interests and established relational patterns prevent this from happening. | Program Innovation & Growth | The costs of education: Many of SCAR’S students are from other states or other nations and pay out-of-state tuition, as well as incurring the very high cost of living in Northern Virginia. |
| | The intellectual diversity and substantive breadth of the faculty. S-CAR has grown its faculty with a substantive and multidisciplinary focus, | Rubric of practice: Conflict Resolution | Record of Scholarship | In the place of providing a broad based and flexible education, we are tempted to devolve our programs into a training model that links the educational experience with ‘buying the degree’ rather than learning for the exchange, and confuses the market value of a degree with the competence that is required for intense learning and self-correction. |
| | 17 students have won national scholarships. | | | |
| 17 students have won national scholarships. | Avoiding Growing Too Large and Silos: The Institute is almost unique with regards to institutes at other universities 1) because it is actually an academic unit and an “institute for advanced study” and 2) because the science program is centered at the intersection of neuroscience, cognitive psychology and computer science. | Global: The Institute is poised to build a significant international presence in Europe and Asia through its leadership in the Decade of the Mind Project and its new exchange agreement with The Humboldt University in Berlin. | Nobel Scientific DNA | US Sponsored Support: The Institute is heavily dependent on sponsored research. |
successful renovation of Point of View and the availability of three very significant presences in Arlington, Fairfax, and Lorton/Point of View.

with leading scholars from disciplines with very different modes of inquiry and research cultures.

- The lack of financial endowment especially in support of students.

started at Mason with a strong emphasis on practice, and in recent years this focus has been rediscovered. A new center has been established, the Center for Peacemaking Practice, and students, faculty and alumni agree that conflict resolution research and theory must have a practical component and be practically relevant.

- Pedagogy: S-CAR has an enormous wealth of knowledge about teaching conflict resolution and because the field is still expanding, there continues to be a great need for people to reflect on how to teach within this field.

- Our greatest opportunities have to do with knowledge creation and S-CAR becoming an engine of sophisticated conflict resolution knowledge, where classics and new ideas are evaluated in a collegially rigorous environment.

- Point of View is definitely an opportunity and an extraordinary one. It is a site that invites self-reflection and learning, but also invites connectivity and respectful engagement. Its location is close to Fairfax and allows for programming that includes not only traditional classes, but also problem solving workshops, mediations, negotiations, as well as intense summer offerings.

- In addition to these resources and programs already in process of development, we have identified a number of areas in which a conflict resolution approach is sorely needed, and which current members of the S-CAR community wish to develop further as subjects for systematic research, practice and teaching.

- Finally, Conflict Resolution provides a wonderful way to explain the US to the world and vice versa, by providing a platform for engaging deeper understanding. This platform includes S-CAR’s location in Arlington Virginia, so close to DC, with POV’s ambitious goal of truly engaging the world as a whole, and using the lens of many conflicts in which the US and the world share

- Further differentiation and specialization of knowledge and applications that will make a synthesis and integration difficult. There is a need for S-CAR to follow both paths, on the one hand encouraging further differentiation of approaches, and on the other working towards the integration of all approaches into one whole.

- The result of our field’s success: As the U.S. government has become more interested in employing conflict resolution concepts and techniques, it has increased its contributions to the field in terms of research grants, employments opportunities for graduates and other options for collaborative practice efforts.
| School of Management | • Cyber security, forensic accounting and information systems auditing  
• Real Estate Entrepreneurship  
• Global entrepreneurship  
• China and Pacific Rim | • Our product is not clearly differentiated from UVA, UMD, Georgetown, or GW. Also, distance education from Top-20 schools could very possibly take an important part of our market share in some programs.  
• The size of our faculty is just sufficient for our current programs and teaching obligations. To add capacity to pursue new programs, we need to add faculty resources and/or reposition our faculty resources to focus on teaching/research and add supporting, lower cost resources, to improve the efficient use of resources (e.g., scarce, AQ faculty).  
• Our infrastructure—especially our building and classrooms—is a limiting factor in student recruitment. | • We plan to establish ourselves as the home of a Northern Virginia Innovation Center, and as a global leader in Global Entrepreneurship and in business related to China.  
• Innovation and entrepreneurship has been a central theme of the Center for Global Business Innovation and Transformation. That is, our Advisory Board is very keen to assemble a Northern Virginia Innovation Center. Several professors are interested in this idea as well. | • The biggest threat may be the changing landscape of the financial models of some of the leading institutions in the country. We are not yet ready to be autonomous, but the state funding model imposes too many constraints for adequate expansion and unrealistic expectations. |

| School of Public Policy | • SPP’s greatest comparative advantage vis-à-vis its competitors is, and will remain, locational. The fact that distance and location still matter in today’s globalized environment is a critical asset for SPP, to be leveraged even as the School takes full advantage of distance-leveling technologies.  
• By designing instructional programming to meet the needs of individuals already in professional employment, the School not only takes advantage of the extraordinary demographics of the region but builds relationships that enhance its capability to obtain and carry out funded research. At the same time, the School’s location makes it a national magnet for individuals who have not yet entered the professional labor market and for foreign students seeking exposure to Washington.  
• The School’s substantial institutional autonomy within the university has been and continues to be a critically important feature; this autonomy gives the School substantial advantages over competing public policy programs that operate as a department within a faculty of arts and sciences or that, while operating independently, rely on faculty with primary appointments in disciplinary departments. | • While the School’s financial situation remains sound, the principal challenge as the School moves forward is the shallowness of its financial foundation.  
• The success of the School, rather than any failure, that drives this need to broaden the School’s business plan. The School’s success in building the reputation of its masters programs means that it now attracts applicants who not only are being admitted to Georgetown, George Washington, American, and Maryland (as well as to out-of-town competitors like Harvard), but are being admitted there with financial aid. | • Science policy/technology policy/innovation/entrepreneurship: These distinct but linked policy concerns have been a central element of SPP’s intellectual agenda since the School’s creation, have been important to Mason as a whole, and are critical for Mason’s northern Virginia/DC metropolitan knowledge-based community. Globally as well as regionally, the issue of how to empower individuals and societies to unlock creativity is fundamental.  
• Regional governance and development: This has been a second central element of SPP’s agenda since the School’s founding.  
• Human and societal security: the School’s investment in research on democracy and revolution, fragile states, peace operations, transnational crime and corruption, emerging markets, sustainable development, global health and environmental concerns, cyber security, and terrorism give it a unique capacity, substantially distinct from programs at competing universities that approach “security” in more traditional military terms.  
• Transportation and cyber infrastructure policy: The School has a long-established reputation in the field of transportation policy. | • Reduction in federal research funding  
• Cutbacks in governmental work forces and perceived career opportunities  
• The strategic response of other DC-area institutions to these headwinds may also complicate SPP’s efforts. |
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<tr>
<th>Volgenau School of Engineering</th>
<th>SPP has an unusual institutional history that differentiates it from rivals</th>
<th>Inadequate level of State support for academic positions and programs</th>
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<td>Student/faculty ratio is far lower than that of our competition, due to an increasing dependence upon adjunct faculty to meet our teaching loads</td>
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<td>Growing research expenditures and doctoral degrees awarded</td>
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<td>A lack of laboratory and research space</td>
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<td>Salaries for faculty and stipends/financial support for graduate students lag that of our peers</td>
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<td>Creating a new mechanical engineering department and degree programs (BS, MS, and PhD).</td>
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<td>Creating new multidisciplinary programs in areas such as Energy and Sustainability, Nanotechnology, Nuclear Policy and Security</td>
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<td>Information and cyber security continue to be important areas for the Country; and because of our location, we have excellent opportunities with local industry and government organizations.</td>
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<td>The Applied Information Technology (AIT) Department and shows excellent promise for growth. Computer Science is also involved with their expertise in databases and data mining.</td>
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<td>Robotics is an emerging area with strengths in ECE and CS.</td>
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<td>The Bioengineering Department has substantial strengths in the area of neural engineering and collaborates closely with the Krasnow Institute and the Biology Department in the School of Science. Bioengineering also is poised to become a leader in Global Medical/Health Technology research and development, and is developing multidisciplinary partnerships with other GMU units in Biorobotics and Rehabilitation Engineering.</td>
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<td>Civil and Environmental Engineering (CEE) is leading the way in international humanitarian service learning through its Engineers for International Development program.</td>
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<td>Growth of humanitarian-oriented and multidisciplinary programs has been observed to broaden appeal widely to under-represented groups in engineering.</td>
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<td>Other VA universities are increasing their educational and research foothold in northern VA. This is particularly true in the area of cyber security.</td>
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<td>High profile US institutions are now offering distance learning programs that concentrate students into a few high profile US institutions such as MIT and Stanford. In addition, we are facing a serious threat of competition from peer universities that offer distance education programs and market heavily in our region.</td>
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