

**Pamplin Annual Report 2015-2016**  
**Prepared for Provost Rikakis**

DRAFT

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**Pamplin Annual Report  
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## **1. PAMPLIN MAJOR ACCOMPLISHMENTS 2015-2016**

### **1.1. Undergraduate education**

Exceeded 90% placement rate; average starting increased by 10% to \$56,500. 93% of seniors reported career-related experience. Career success and recruiting efforts help explain Pamplin's increasing popularity with nearly 2,800 first-choice fall 2016 freshman applications.

Improved student satisfaction with academic advising from 50% to 80% through fundamental changes such as training new professional advisors during 2015.

Pamplin student organizations received highly selective national recognitions including PRISM's 2016 Telly and GOLD Muse awards.

Pamplin undergraduate rankings continue to improve including #5 Hospitality and Tourism Management; #22 ACIS; overall BW ranking improved by 4 spots to #64.

Approved curricular improvements including the business core, consolidation of the Certified Financial Planning (CFP) program in Finance, and introduction or revision of many courses.

Expanded the Apex Systems Center for Innovation and Entrepreneurship (ASCIE) programs including the Innovate live-learn community and Innovation Treks.

### **1.2. Professional graduate education**

Increasing enrollment in Master of Information Technology (MIT) degree and Evening MBA (EvMBA) while launching new professional degrees (Master of Science in Business concentration in business analytics (Blacksburg) and Master in Hospitality and Tourism Management (National Capital Region (NCR))).

Improved program rankings. EvMBA ranked #16 by US News, MIT ranked #2 by US News, Master of Accounting and Information Systems (MACIS) ranked #22.

### **1.3. Research and doctoral education**

Finalized curriculum, services and instruction for executive doctorate in the NCR. Admitted 12 students (vs. goal of 10).

Six Pamplin faculty members have received major research awards since 2014 including two Fulbright awards. Eleven Pamplin faculty members received national press coverage over the past year for their research programs.

BYU ranked Accounting Information Systems faculty research program #7 in country.

### **1.4. Advancement**

Best fund raising year on record with cash nearly \$6.7M as compared to \$5.1M last year and several years at \$3.0-\$3.5M.

Outstanding Alumni engagement including events (e.g. 50th Gala, NYSE, record setting Hokies on Wall Street, Hokies on the Bay, increased Women in Business events), revised/improved boards (e.g., PAC) and the addition of five new advisory boards.

## 2. THREE-YEAR PLAN

### 2.1. Executive Summary

Pamplin adopted a strategic plan in 2014 which was updated as recently as August 2016 (See Appendix 1). The strategic plan describes the vision, mission, and actions by which Pamplin will advance and achieve greater national and international prominence. This three-year plan is based on Pamplin's strategic plan and the companion implementation plan.

This three-year plan provides detail about Pamplin's instructional and research programs than the Pamplin Strategic Plan. However, three topics critical to Pamplin's future but omitted from this three-year plan are addressed in the College's strategic and implementation plans:

1. a description of the facilities that will be necessary to accomplish the goals for our educational and research programs,
2. financial strategies for success, and
3. plans for further development of community within the constituent groups of Pamplin.

### Instructional Programs

#### **Globally competitive and nationally benchmarked instructional programs**

Pamplin will strengthen four programs in this category—BS in Business, MIT, Executive doctorate, and Evening MBA (EvMBA) programs. As the College's largest and best-known instructional program, Pamplin will seek to grow the BS in Business according to University plans while attracting a diverse class of highly qualified applicants with primary interest in studying business. We will insure that Pamplin students have access the range of services—instruction, advising, mentoring, and career services support—that will maximize their career prospects on graduation. Key improvements will include updating the business core curriculum, completion of the Innovation pathways minor, continued focus on increasing both racial and gender diversity of the student body, increasing opportunities for experiential learning, and strengthening the faculty. Through the success of its graduates, Pamplin will realize increased student satisfaction, graduates' career success, and improved rankings in national publications.

The MIT and EvMBA are Pamplin's largest professional graduate programs and growing these programs remains a College imperative. Enrollment growth in both programs is critical to the College's presence in NCR, its international reputation, and its resource base. The EvMBA is offered at the NVC (Northern Virginia Center in Falls Church) and the MIT (fully online) is administered there. The MIT was recently ranked 2<sup>nd</sup> in the country by US News and World Report. Pamplin's primary goals for this program are to improve marketing of the program, track student satisfaction, and expand course offerings addressing new concepts and technologies, thereby increasing student enrollment and career success. For the EvMBA, actions include tracking graduates' perceptions and program outcomes and exploring changes to the tuition model, financial aid, and program marketing to increase racial and gender diversity as well as overall enrollment.

The Executive doctorate (formally the Ph.D. in Business concentration in Executive Business Research) accepted its first cohort of twelve students for the Fall 2016 semester. We expect to accept cohorts of roughly ten students per year to reach a total of about 28 students in this three-year program. This is a new type of program so no ranking information currently exists. Among programs of its type, Pamplin's has a distinctive positioning and curriculum structure oriented to graduating the majority of students to become faculty members at accredited business schools. Our experience at this early stage suggests substantial demand for this program. To maximize its success we will focus on attracting diverse cohorts of academically outstanding experienced executives.

### **Regionally competitive programs**

Two undergraduate program offerings are included in this category. Pamplin's strategic plan identifies sustainable global prosperity as one of three focal areas. It reflects a new vision combining three areas of thought within the college—international business, corporate social responsibility, and social entrepreneurship. Pamplin's existing minor in international business will be expanded to encompass this vision, preparing students to tackle the challenges associated with raising world-wide standards of living in socially and environmentally sustainable ways. Pamplin also offers a growing undergraduate minor in professional sales with extensive experiential activities that enjoys excellent placement outcomes and which we plan to make available beyond the College.

Pamplin maintains several regionally competitive graduate programs—PMBA (including an MD/MBA track), MACIS, MSBS-BA, MSBA-HRM, the undergraduate BS minor in professional sales, and Ph.D. in Business. With the exception of the Ph.D., all of the graduate programs lead to a professional masters. The newest programs are the MSBA-BA—a one-year MS program focused on business analytics—and the MSBA-HTM. The MSBS-BA employs company-sponsored two-semester capstone projects that provide strong experiential learning opportunities and also provide funding for the program. For the professional programs, a primary goal and focus of action will be clear differentiation and positioning and updated curricula to support increasing enrollments and diversity, program visibility and applicable rankings.

Pamplin's Ph.D. in Business is a critical program for the College. Based on the Blacksburg campus but involving faculty from NCR as well, the Ph.D. program is not only essential for the College's scholarly reputation but also to its research programs. Almost all the program graduates take positions as faculty members in accredited business schools. We are investing heavily in this program and capitalizing on synergies with the executive doctorate. We are increasing student financial support to better compete for highly attractive applicants. We are also providing resources to enable students to focus on research and publication which will be essential to move this program into the globally competitive and nationally benchmarked category. We will also explore ways to provide formal instruction in teaching as part of this program.

### **Other Instructional Programs**

Two departments in the College maintain MS program concentrations in Finance and in Marketing—specialized programs with very limited numbers of students. No new investments in these programs are expected. The Executive MBA program, also in this

category, has attracted only a marginal number of qualified students for many years. Unless we can attract more qualified students, no significant additional resources will be allocated to the program.

Pamplin has, over the past three years, discontinued three instructional programs—the full-time MBA in Blacksburg and MS and Ph.D. programs in Hospitality and Tourism Management. The HTM programs were converted to concentrations in the appropriate Business degree programs. We are working with the Department of Economics to assume the BS program and discontinue it in Pamplin. The last students in the full-time MBA graduated in 2015; resources for professional graduate programs were concentrated in NCR.

## **Research and Doctoral Education**

### **Globally competitive and nationally benchmarked research**

Three research domains are strategically important to the College and can tie to other parts of the university through destination areas—research in business, business analytics and decision making, and innovation and entrepreneurship. Research in business is central to Pamplin’s national and international reputation as well as its continued accreditation being part of a Carnegie RU/VH university. Business research can contribute to all of the destination areas through examination of the commercial application of scientific and technical developments as well as their broader economic and social impact. While nationally ranked, our research quality and output in these areas does not meet our expectations and must improve. To that end, we have identified a set of peer and aspirational business schools—all at major research universities. We will seek to adopt strategies and tactics that have led to success in research and we will benchmark our progress using comparative statistics on major publications, citations, faculty participation, and publications by Ph.D. students. Given our College goals, our publication objectives as a College cannot be less than to double our publications in elite journals over the next five years.

Business analytics and decision making is an important domain of business research in all of Pamplin’s departments. Particularly over the past decade with the explosive growth of data availability, analytics has become an essential tool for business planning, decision making, and evaluation and research focused on techniques and applications of business analytics has become important in all areas of business. Pamplin faculty research in this area will continue to focus on publication in elite journals; in addition, this is a domain in which Pamplin faculty can participate in multi-disciplinary sponsored research projects and industry-funded research and we will promote this activity particularly through the Center for Business Intelligence and Analytics.

Pamplin’s development in entrepreneurship has advanced rapidly over the past three years. In addition to successful new instructional programs, the Apex Systems Center for Innovation and Entrepreneurship was formed and funded. Advancement results for the center are very encouraging and these resources will enable the College to advance its research programs in this area. Three recently-hired faculty members in the Department of Management have entrepreneurship as a research focus and we are

currently seeking a senior faculty member in the business strategy area with research interests related to entrepreneurship.

### **Major college specific research programs**

Major research programs are pursued by faculty members in each of Pamplin's six departments. These programs generally focus on functional areas in business and are linked to the organization of the College's instructional programs. These research programs in accounting, finance, hospitality and tourism management, marketing and consumer behavior, management (organizational behavior/human resources management and business strategy), operations and supply chain management (housed primarily in BIT), and sustainable global prosperity constitute the elements of the larger business research program referenced above. Through increased elite publications, Pamplin seeks to advance the state of the art in business that will inform better business practice, promote economic development, and address societal needs. We will track progress using national benchmarks and comparison to our peer and aspirational schools.

The College is devoting a large proportion of its increased resources to attract, support, and retain faculty members who will conduct and publish more research of this caliber and collaborate with and mentor other particularly junior faculty members. We will continue to make strategic hires and resource allocation to advance these programs of research. The College's goal is for these research programs to move to the globally competitive and nationally benchmarked category.

### **Research programs to remain status quo or be reduced**

Research in real estate is related to Pamplin's participation in the real estate program. Because of its focus on elite publications, Pamplin has not made specific investments in research of particular business sectors such as real estate. To the extent that real estate can be a context for examination of important business scholarship, we will encourage and support faculty research activities in this area.

Business law is an essential curricular component of the BS in Business. While we have no plans to expand tenure-track faculty in this area, our current faculty member has published in the strongest business law journals and been active in sponsored research projects with the Hume Center. The College will continue to support this research and participation in multi-disciplinary research projects, particularly those related to the destination areas.

### **Outreach programs**

Pamplin has long maintained strong relationships with external constituencies, particularly businesses and business leaders. These relationships are critical to the development of our students, placement of our graduates, and success of our advancement programs. Cultivating these relationships has also been crucial to the increasing success of the College's advancement program. Pamplin will continue to expand opportunities for alumni and business engagement with the college and its students. In light of Pamplin's aggressive advancement goals for the next several years, outreach remains a critical component of the College's strategic plan.



## 2.2. Instructional programs and student enrollment

### 2.2.1. Globally competitive and nationally benchmarked

#### BS in Business

The BS in Business is Pamplin's largest and best known instructional program. It provides deep knowledge appropriate to each of its major disciplines. One key goal is for graduates to have excellent career opportunities while students, at graduation, and throughout their lives. This is achieved in several ways including:

- attracting the right students,
- professional academic advising to assure that students take advantage of the breadth as well as the depth of educational opportunities available,
- Pamplin career services to compliment university career services, and
- peer, faculty and alumni mentoring.

The BS in Business is designed so graduates in every major to have a sound understanding of business analytics and core skills that allow them to apply analytics in their field. We also want all students interested in entrepreneurship to have excellent opportunities to learn about and experience company startup and early stage development. Courses and experiential opportunities are designed to assure that all graduates have an understating of the role of business in fostering sustainable global prosperity and that many students have an opportunity to experience the practice and culture of business in other countries.

#### BS in Business benchmarks

We use the following concepts to demonstrate the competitiveness of the BS in Business:

1. Applicant quality/interest
2. Student satisfaction
3. Pamplin academic pillar knowledge/experience
4. Student retention
5. Career success
6. Rankings

**Applicant quality/interest:** The success of the BS in Business is a result of the qualities of its students as well as the education provided by the program. The BS in Business received nearly 2,800 first choice freshman applicants for Fall 2016 representing an increase of more than 500 in the past two years. We can improve the program by attracting more high quality applicants and more diverse applicants who will attend if admitted. We use the measures in the list below. While it may be possible to obtain statistics for one or more of these metrics from other business

schools, we do not believe that meaningful conclusions could be drawn from a comparison. We will compare against our own results in previous years.

1. Number of freshman applications (first choice majors)
2. Number of transfer applications
3. Percent of admitted freshman applicants who enroll (yield)
4. Freshman class student diversity
5. Number of freshman students in the Honors College

**Student satisfaction:** Students are one good source of information about the quality of the education provided. We have obtained data from an annual survey of business school students conducted by Universum so it is possible to compare our overall student satisfaction against peer and aspirational schools. We also track student satisfaction with individual courses using the university's SPOT system. Faculty are strongly encouraged to assure students know we take their feedback seriously—this has resulted in Pamplin having a relatively high SPOT participation rate.

1. Overall student satisfaction (Universum)
2. Average overall student perception of course/faculty (SPOT)
3. Student participation in course evaluation (percent SPOT)

***Pamplin academic pillar knowledge/experience:*** Pamplin's strategic plan identifies these three academic areas as ones it will be known for excellence—our academic pillars—business analytics, entrepreneurship and sustainable global prosperity. We can benchmark the performance of Pamplin students on business analytics using two of the dimensions tested by the ETS field exam. This standardized exam is administered annually to a large number of business students across the country making comparisons possible. Tests conducted by Universum provide statistics that can be used to compare Pamplin students with those of other universities on dimensions of the knowledge and experience of international business. Universum also allows comparisons of Pamplin students with other schools in terms of entrepreneurship (start-ups).

1. Quantitative business analysis knowledge (ETS)
2. Information systems knowledge (ETS)
3. International mindset (Universum)
4. Percent who study abroad (Universum)
5. Percent with an international internship (Universum)
6. International issues knowledge (Universum)
7. Percent who have start-up (Universum)

**Student retention:** A well designed and executed program will tend to retain its students. We believe that national statistics are available to compare Pamplin with other schools. It will also be possible to use an analysis of retention between the

freshman and sophomore year to assure that various demographic groups are not failing disproportionately.

### **BS in Business enrollment projections**

Fall	2016	2017	2018	2019
Enrollment	4,040	4,200	4,400	4,800

Currently students are free to select among Pamplin's majors. We are implementing an enrollment management system to impose some control on the majors within the degree. This will improve our ability to plan and hire an appropriate number of staff. Enrollment management is particularly helpful for planning tenure track hiring when there is an expectation for undergraduate teaching and mentoring.

**Career success:** The BS in Business helps graduates achieve initial and sustained career success. While we have anecdotal evidence of long-term career success, reliable benchmarks are not readily available. Therefore, we focus on initial career success. We use the following measures:

1. Percent placed at graduation and at 6 months
2. Average starting salary
3. Proportion of students with career related experiences prior to graduation
4. Percent of students with significant practical experience (Universum)

**Rankings:** Since *Bloomberg-BusinessWeek* announced that it would no longer rank undergraduate programs, the most influential ranking of undergraduate business programs is published by *US News and World Report*. It includes an overall ranking and several specialty rankings (real estate, finance, etc.). The system is based entirely on the perceptions of deans, undergraduate program directors and business representatives so improved results are likely to go unrecognized. Many other rankings exist.

### **BS in Business strategies to achieve greater diversity**

Our strategies for increasing diversity are to focus on the recruiting a diverse freshman class while maintaining programs that have proved effective in retaining minority and other underrepresented students once admitted. The number of ethnically underrepresented students in Pamplin's freshman class has increased from 12% (100) in fall 2013 to 18% (164) in fall 2016. The number of black students in the freshman class has increased from 2.5% (21) to 6% (54) in that same time period. Some of the same actions that increase diversity also increase the overall applicant pool.

We have achieved greater diversity using several tactics:

- Created a full-time position to recruit students
- Developed the "New Horizons Scholarship" which is sponsored by more than 20 companies. In addition to providing funding, these companies

participate in the recruiting and retention of students. Monies are matched 2-1 by Pamplin scholarship funds to provide 10 under-represented students \$5,000 of support annually for 4 years. Currently, 30 New Horizons scholars are on scholarship. Beginning 2016-2017, the new "Lifelong Career Advancement Program" will generate additional funds to support these and other scholarships, such as the scholarships for students enrolled in the Honors College.

- Partnered with Universum for the 2016-2017 admission cycle to geo-target ideal profiles of students on social media to boost applications and yield using identical tactics ExxonMobil uses to improve their diversity recruiting.
- From high school visits, partnerships with key under-represented schools and groups yielded a student weekend "Business Explorations" of Pamplin and Virginia Tech of high-achieving young people. Each semester over 40 students participate from multiple target schools. Employers are also present at these events.
- LEAP, an under-represented student transition program, extends the students' two-day summer orientation by three days getting them acclimated to campus life, Pamplin, and establishes peer relationships that last throughout their undergraduate career. Employers also present life workshops. Two cohorts per semester and over 60 students participate in this program. LEAP was established in 2011.
- The Pamplin Undergraduate Mentoring Program (PUMP) matches over 300 new students with 60 upperclassmen mentors and 60 recent Pamplin alums in a series of periodic social, academic and career settings. GPAs are significantly higher for participants in this program than their peers. Over 125 of these students participated in company workshops and passed a series of tests to become Pamplin Career Certified. These students will be presented to employers in the fall to enhance internship and full-time job opportunities. Additional recent alumni mentors will be included in this program as a result of successful matches from Lifelong Career Advancement.
- Engaged a range of students through activities such as the Diversity Council, the Diversity Jubilee, the Diversity Case Competition, etc. and through organizations such as National Association of Black Accountants (NABA) and Association of Latino Professionals for America (ALPFA).

As mentioned in the section on benchmarks, we will also track the retention rates for various groups of students and be ready to address needs that may become apparent if a particular group is failing at an undesirable rate.

In addition to the efforts above, we are committed to gender diversity. The BS in Business was 60% male in fall 2016. The gender imbalance is greater in more technical business majors. Pamplin has a range of programs designed to promote gender diversity among its undergraduates (including Collegiate Women in Business and Females in Finance) and to promote interaction between undergraduates and successful alumnae (including Women in Business events).

## **BS in Business contributions to the VT-shaped student**

All Pamplin undergraduate majors have strong disciplinary cores. This helps explain their popularity with students and the very strong initial career success of graduates.

All students completing the BS in Business also complete the CLE and elective courses; these are selected based on the interests of the student in consultation with Pamplin's professional academic advisors who help students choose courses aligned with the principle of interdisciplinary collaboration. Some students choose courses beyond their majors to complete a second major; 75 May 2016 graduates received second majors outside of their primary major in business. When available, we expect students completing the BS in Business will take advantage of destination area majors.

The long term career success that we believe most graduates of the BS in Business achieve demonstrates their ability to use their interdisciplinary preparation to adapt to real world challenges in organizations and in life. In addition to their disciplinary specialty, BS in Business students learn to think critically, communicate effectively, solve problems, manage projects and work effectively in teams to leverage the unique skills and talents of individuals with diverse perspectives.

The BS in Business requires expertise in technology. All students complete foundational courses including calculus and business courses in quantitative methods. In spring 2016, Pamplin's Undergraduate Studies and Policies Committee recommended that all students complete a course in Business Analytics—we will implement this recommendation by the beginning of the next academic year. In addition, all must complete courses in the use of personal computers in business. Some majors require additional technology courses including computer programming (Java), computer simulation and mathematical modeling.

Pamplin's Career Services has been an inaugural member (2014) and conference committee member (2015) for the annual T-Shape Summit hosted by Michigan State and IBM that President Sands keynoted at the National Academies in March 2016. (Currently, an opportunity exists for Virginia Tech to host this conference in 2017.)

## **BS in Business purpose driven**

The College of Business challenges its students to look beyond the boundaries of a traditional classroom to seek purpose-driven opportunities that lead to a lifetime influenced by the motto of Ut Prosim. By shifting the discussion from "What classes do you want to take?" to "What goals do you want to achieve?" advisors/mentors can recommend curricular and co-curricular experiences that are the stepping stones needed for a student to navigate his/her personalized pathway.

Students who enroll in the Pamplin College of Business are driven by the desire to explore, learn, grow, discover themselves, and ultimately define meaning and purpose in relationship to their communities. The richness of their journey is largely determined by the quality of their experiences along the way. Intentional interaction

with real-world challenges (experiential learning) is retained throughout a student's lifetime. Boundaries imposed by a traditional classroom are broken down; our students (over 90%) complete one or more internships and externships with companies in many states and countries. Studying abroad provides students with a living laboratory that fosters exciting new perspectives and forever changes the way they look at the world. Case studies and corporate challenges cause Pamplin students to think bigger and more creatively.

### **BS in Business contributions to destination areas and pathways**

Some existing courses taken by students in the BS in Business will be good candidates to contribute to the destination area majors which will be created. There will be excellent alignment with the Data Analytics and Decision Sciences destination area major. Students completing the BS in Business with less technical majors may realize particular benefits from completing additional course work in this destination area major. There are similar opportunities with the Integrated Security and to some extent with other DA's. There is excellent synergy between the developing destination area (Strategic Growth Area) in Innovation and Entrepreneurship and the BS in Business. Courses already used in Pamplin's Entrepreneurship and New Venture Growth (ENVG) minor are good candidates for a DA major. Many students who complete a BS in Business would benefit from a DA major in Innovation and Entrepreneurship.

As Pamplin faculty move forward in the development of new courses, they are mindful of fulfilling pathways requirements. Additionally, existing courses are being reviewed to assess how they may be converted to being Pathway compliant. The Foundations of Accounting course (ACIS 1004) for non-business students is Pamplin's first pathways course to go through governance. Another course, Investments and financial Literacy (FIN 2113) also holds great potential as a pathways course. The existing Legal and Ethical Environment of Business course (FIN3054) is being evaluated to determine the modifications required to make it pathways compliant. We are currently working on the development of pathways minors including Innovation, Business Leadership, and Culture and Environment in Appalachia. Of these, Pamplin has the most significant role in Innovation.

Innovation pathways Minor. This minor is being designed to fit into the aspiration of developing the VT-shaped student. Pamplin is collaborating with the College of Engineering (mostly through the Engineering Education Department) as well as the Industrial Design department within the College of Architecture and the School of Architecture and Design. Involved is also the department of Science, Technology and Society (STS) in the Humanities. The minor is expected to be available in fall 2018. Core courses are already being offered, including the cross-listed, MGT / ENGE / IDS 4094 – Managing Technology Commercialization. This course includes students from many majors working in interdisciplinary teams on real-world projects, such as technology commercialization of innovation leveraging VTIP patents/innovations and other VT professor innovations, some which are already in startup mode, as well as projects from the community such as small or growing companies like Aeroprobe in Christiansburg.

Pathway minors' focus on developing basic technology proficiencies is well-served through the BS in Business that includes computer programming, production/operations systems ("making"), design thinking/collaboration, and education about the need to adapt to the complex environment. Our degree programs will include computer programming, production/operations systems ("making"), design thinking/collaboration, and education about the need to adapt to the complex environment. Pamplin will also help to develop personalized instruction in STEM-related courses through machine-assisted technology.

### **BS in Business curricular redesign plans**

Pamplin is participating in the university's efforts to develop personalized adaptive learning by converting BIT 2405 to this platform. In addition, one of our ACIS faculty members is also participating in the project as she develops (ACIS 1004) for delivery in spring 2017. Once developed, she plans to convert it to the adaptive learning format.

Required business courses for the BS in Business are in the process of revision. Pamplin's Undergraduate Studies and Policies Committee made a series of recommendations in spring 2016 which will be implemented in the coming months. The college is prepared to consider additional changes as destination area majors are developed—these may be beneficial in making it more practical for students to complete a destination area major in addition to the BS in Business.

Pamplin departments are currently evaluating curriculum revisions to the majors. The Finance department is introducing a new option structure and career development instruction that encourages students to choose a career path at an earlier stage of their studies.

The average time to degree is 4.1 years so it provides no motivation for changes.

### **BS in Business global gateways and the extended campus**

Students completing the BS in Business have a range of options for using study abroad programs, international internships, and exchange programs to include a global experience as part of the degree. Pamplin has long been educating students for the global marketplace to enable them to understand how to work with people from diverse cultures and to operate effectively in other countries. The most common way to achieve this has been through faculty-conceived study abroad programs. Programs of this type will continue but more emphasis will be put on strategically identifying opportunities for programs that align with Pamplin's strengths. These institutionally identified programs will receive more staff support and are expected to remain active beyond the interest of those initially engaged. The college will enhance and expand these opportunities, leveraging relationships with international partner schools, alumni contacts abroad, and on-campus partners.

Formally, the BS in Business does not make significant use of Virginia Tech's extended campus (Roanoke, NCR, etc.) However, many of our undergraduate students complete summer internships in the NCR in industries such as accounting

and consulting. If facilities for undergraduates in the NCR were available we would explore possible academic and experiential programs in that area. We could also leverage our existing faculty and programs at the NVC (Northern Virginia Center in Falls Church) and take advantage of opportunities for coop and internship positions. It is likely that we would be able to develop learning at startup and early state companies for students interested in entrepreneurship. It would be more difficult to effectively use facilities in other parts of the state.

### **BS in Business formal and informal experiential learning**

The majority of students completing a BS in Business participate in experiential learning. In spring 2016, 93% of seniors reported career-related experience prior to graduation. The range of opportunities is very wide and includes activities directly connected to classes and supervised by faculty as well as student-initiated activities connected to companies, as well as other activities. Students completing the BS in Business have opportunities to learn by participating in one of 35 Pamplin student organizations in addition to the even wider range of organizations throughout the university. In the examples below, the focus is on experiential learning that is facilitated by Pamplin faculty.

**SEED and BASIS:** These are highly selective programs for students who want hands-on experience directing investments in equities and bonds. We believe that the undergraduates in these programs manage the largest portfolio in the country. Students enroll in courses but also receive close supervision and mentoring from faculty, alumni and business professionals. While the majority of students are enrolled in the BS in Business, the programs are open to all majors and are particularly attractive to other technical majors including mathematics and engineering.

**PRISM:** Founded in 2011, PRISM is Virginia Tech's only student-run Social Media Organization. Its activities equip students to lead the development, marketing and measurement of the web and social media presence. The student organization allows Virginia Tech students to have excellent opportunities to create a strong social media brand for the College in a real world setting. Its members have served external corporate customers as well as Virginia Tech units. In 2016, PRISM projects received national recognition (TELLY and MUSE). Students in PRISM competed against more than 13,000 global entries for the Telly and against 1,200 submissions for the MUSE. The majority of PRISM students are in the BS in Business but all majors apply and frequently students from visual arts and STEM fields are included.

Students in the BS in Business (as well as students from other programs) have access to a range of experiential programs related to entrepreneurship. These include the Innovate living-learning community, Innovation Treks, etc. Other student organizations are also taking industry engagement trips including Collegiate Women in Business and PRISM.

Other departments also stress experiential learning. For example, in the BIT Expo each semester, teams of students completing semester-long projects display their work to corporate representatives throughout the day in the Pamplin atrium.



Pamplin Career Services facilitates company visits so that students can learn more about the firms, their industries, and employment opportunities.

Our plans are to continue to increase formal and informal experiential learning. To make progress we are increasing the engagement of alumni with our students to provide some of our experiential learning (e.g., through the Recent Alumni Board). Specifically, the establishment of the Lifelong Career Advancement model will provide job-search assistance to graduates by matching them to Pamplin employers. Upon successful matches, those recent alums and their new employers will participate in mentoring underclassmen students in the Pamplin Undergraduate Mentoring Program (PUMP).

We are also hiring more faculty and staff as the next section amplifies.

### **BS in Business Hiring Plans**

Hanover Research studied a range of performance/resource metrics comparing Pamplin to other business schools. Hanover's report concluded that Pamplin faculty teach about 23% more undergraduate SCH than those at SCHEV Peer Business schools; about 16% more than Pamplin peer business schools and about 38% more than Pamplin aspirational schools. Virginia Tech's Metrics Report for Academic Colleges and Departments for Academic Years 2010-2015 indicates that Pamplin 208 faculty teach more undergraduate SCH than any other college at the university so Pamplin's classes tend to be very large and managing these classes can impact faculty research productivity. Pamplin's enrollment in the BS in Business is planned to increase. These facts and others indicate that Pamplin needs more faculty teaching in this program.

The student experience in the BS in Business is influenced by class size and the number of sections we offer. Despite an increasing number of undergraduates we were able to decrease the mean section size for lower division courses from a recent average of about 120 to 86 in the most recent year while maintaining the size of upper division and graduate courses. This was accomplished by varying the number of sections assigned to tenure-track faculty based on their research success and by focusing hiring on non-tenure track faculty.

We do not designate faculty specifically for the BS in Business so I provide our plans for faculty hiring in Pamplin more generally. Below is a an update on faculty hiring plans originally published in section 5.1.2 of the Pamplin Implementation Plan and a status report on achieving the goals of that plan.

The table below summarizes our faculty and the expected teaching capacity for the all instructional programs in fall 2013. It does not include teaching by graduate students. For simplicity, we do not reduce possible sections for the small number of individuals with administrative assignments or increase capacity for the small number of instructors teaching more than six sections. Four rows are associated with tenure-track faculty. "New" tenure track faculty are given a reduced teaching load to allow them to establish a strong research program and faculty regularly publishing the most influential research ("Research Elite") also have reduced teaching expectations. Less research productive faculty who nevertheless meet the

standards to be certified as “scholarly academic or SA” for business accreditation purposes teach four sections while tenure-track faculty with less research success teach more. Non-tenure track faculty includes collegiate faculty, professors of practice, and full-time instructors.

#### Fall 2013 Pamplin Faculty Profile

Category	Faculty	Load	Sections/year
“New” tenure-track	22	3	66
Research elite TT	8	3	24
SA TT	51	4	204
Non SA TT	11	5	55
Non-tenure track	18	6	108
<b>Total</b>	100	-	457

The next table shows our faculty and their expected teaching capacity in fall 2016. The total number of faculty has increased, especially non-tenure track faculty. Raising and clarifying research expectations while providing resources and incentives has decreased the number of tenure track faculty who do not qualify as “scholarly academics” for accreditation purposes from 11 in 2013 to 8 currently. There is a substantial increase “Research Elite” faculty since 2013 despite the multi-year lead time associated with this type of research and publication.

#### Fall 2016 Pamplin Faculty Profile

Category	Faculty	Load	Sections/year
“New” tenure-track	18	3	54
Research elite TT	14	3	42
SA TT	55.5	4	222
Non SA TT	8	5	40
Non-tenure track	31	6	186
<b>Total</b>	126.5	-	544

The current approved hiring plan for the college includes one new senior faculty member to mentor junior faculty. The remaining 8 approved positions are replacements for retirements and other terminations. As additional faculty have announced their departure and their upcoming retirements, 3 positions have been requested to be added for the college. These are all tenure track positions which will be necessary to keep the tenured/tenure-track and non-tenure track balance of faculty within the college. The table below predicts the composition of Pamplin’s faculty for fall 2017. It shows a continuing increase in research active faculty (SA and Elite) and an overall increase in the number of faculty.

#### Predicted Fall 2017 Pamplin Faculty Profile

Category	Faculty	Load	Sections/year
<b>“New” tenure-track</b>	20	3	60
<b>Research elite TT</b>	15	3	45
<b>SA TT</b>	58.5	4	234
<b>Non SA TT</b>	6	5	30
<b>Non-tenure track</b>	30	6	180
<b>Total</b>	129.5	-	549

Over the next several years, the university has committed to increasing the college’s faculty by 20 although funding to support the market cost of these faculty will far exceed the funding expected for these lines—especially if top 30 tenure-track faculty are hired. We will want to hire a mix of tenure-track and non-tenure track faculty as our faculty expands. An increasing number of the tenure track faculty will have very high research productivity as shows in the table below.

#### **Planned Pamplin Faculty Profile**

Category	Faculty	Load	Sections/year
<b>“New” tenure-track</b>	30	3	90
<b>Research elite TT</b>	35	3	105
<b>SA TT</b>	30	4	120
<b>Non SA TT</b>	1	5	5
<b>Non-tenure track</b>	44	6	264
<b>Total</b>	140	-	584

Blacksburg faculty hiring among the academic departments will be guided by a mathematical model which allocates positions considering SCH taught, majors, research productivity, and Ph.D. placement success. Beyond the model, judgement is used to finalize hiring by area or department. Later section of this report describe some of the factors that will impact hiring beyond the mathematical model.

#### **BS in Business entrepreneurship**

Pamplin provides a range of classes and programs for students in Pamplin and other colleges. Some of the experiential entrepreneurship programs have been described above.

We believe that Innovate, the Living Learning Community with academic programming provided by the Apex Systems Center for Innovation and Entrepreneurship (ASCIE) is globally competitive program within the BS in Business. However, no national benchmarks exist for this type of program. We have requested statistics from other schools with similar programs but so far, have not received adequate information to benchmark Innovate. As mentioned in the

“Benchmarks” section, Universum, can provide information about the percent of business school students who report having a start-up company so this will provide one point of comparison.

Another significant program is the New Venture Growth (ENVG) Minor. This is not nationally or regionally benchmarked or ranked yet. It is open to all majors on campus, involves interdisciplinary coursework as such, and in the courses involves some experiential learning and exposure to actual entrepreneurs. Hence, this contributes to the development of VT-Shaped students. Clearly it fits well within the Strategic Growth Area for Innovation and Entrepreneurship.

## **Master of Information Technology (MIT)**

The MIT is a fully online program offered jointly with the College of Engineering and administered from the NVC. We want to increase the size of the program while maintaining high quality. The curriculum of the degree contributes directly to our reputation for business analytics.

### **MIT benchmarks**

1. Enrollment
2. Student satisfaction
3. Employer perception
4. Career success
5. Rankings

**Enrollment:** As explained below, we measure enrollment in SCH and plan for significant enrollment growth.

**Student satisfaction:** We are developing a survey that will ask graduates about the overall quality of the degree program. While students are asked to complete the SPOT survey after each course, we do not consider that measure particularly valuable.

**Employer perception:** We are developing a survey that will ask companies that employ MIT students and graduates about the overall quality of the degree program.

**Career success:** Generally MIT students are employed full-time while completing the degree so measuring the percent placed at graduation is less meaningful than measures of career progression. We are developing a survey for MIT alumni that will request information such as their increase in salary after graduation.

**Rankings:** *US News and World Report* ranks online information technology programs using a number of metrics. Our rank improved from #3 in 2014 to #2 in the most recent ranking. Given the instability of these rankings, our goal is to remain among the top ranked programs.

### **MIT enrollment projections**

Enrollment in the MIT is measured in SCH for each academic year since students study part time and the number of credits in which they enroll each semester will vary over time. We include Commonwealth Campus students taking MIT classes who plan to enroll in the degree. The table below includes only enrollment in business classes. Including the engineering courses that are part of the MIT would approximately double the SCH's.

### MIT Enrollment Projections

AY	2016-17	2017-18	2018-19	2019-20
Pamplin SCH	2,000	2,400	2,800	3,200

#### MIT strategies to achieve greater diversity

Diversity for the MIT includes gender, race, and other characteristics. However, we emphasize geographic diversity of the MIT than we do with other Pamplin instructional programs.

In fall 2014, only 23% of MIT students were from outside Virginia. By spring 2016 over half were out-of-state. This increase was achieved because of a tuition policy change (i.e., all students, regardless of location, are charged the same tuition rate for the MIT) and a change in student recruitment activities. MIT staff continue to attend in person activities which are often within driving distance and have limited geographic reach for new students. However, MIT student recruiting is increasingly accomplished through online activities with no geographic limitations.

Other forms of diversity are sought by participating in targeting forums (e.g., the Atria Women in I.T. Conference in Richmond or the Black/Hispanic MBA/IT Fair in Chicago). Language and images for online advertising are selected to demonstrate a commitment to diversity and inclusion. More work needs to be done to achieve a representative student body. As of spring 2016, 2/3 of students were Caucasian, 11% black and 5% Hispanic. The student body is overwhelmingly male (81%) or about the same percent as is found nationally in engineering programs.

#### MIT contributions to the VT-shaped student

The MIT Program contributes strongly to some components of the VT-Shaped Student but is not designed to fully contribute to all of its aspects. The required core courses of the MIT assure that graduates have solid IT preparation. The leadership and staffing from Pamplin and Engineering provide interdisciplinary collaboration—this also comes from the range of careers and undergraduate degrees of MIT students. Clearly all MIT students have technology expertise. It is less clear that all MIT graduates are purpose driven. While all have experiential learning due to virtual group projects in courses, we do not guarantee that these geographically disperse, online students have informal experiential learning.

#### MIT contributions to destination areas and pathways

The MIT Program is very supportive of the instructional goals of some of the destination areas. MIT program curriculum includes modules/concentrations that directly relate to Destination Areas in Innovation and entrepreneurship, Decision Sciences (Big Data, BI and Analytics), Cognitive Computing for Smart Services (Decision Support Systems), and Integrated Security (IT Security & Trust). These are popular specializations within the degree and are studied by more than 50% of enrolled students. There are plans to introduce additional courses on IT Innovation, and Integrated Security in the near future.

As a graduate degree, the MIT does not have a direct role in “pathways.” It does however, assure that its students exceed the goal of “basic technology proficiency.”

### **MIT curricular redesign plans**

This fully online program is available to students from around the world and consists of a curriculum in information technology that combines highly technical knowledge from engineering with applied concepts from business. In 2015-2016 the MIT Curriculum Committee recommended a series of changes to improve the program. This included converting courses to fully asynchronous delivery, offering scalable courses to meet the increase in enrollments, giving students the opportunity to create flexible study plans, and adding new courses.

MIT curriculum was revised to include six core/foundation courses, representing the five participating departments with IT focus, from which students will choose a minimum of any four courses. This allows students in the program to design a plan of study that best meets their professional needs. In addition, the committee added several new courses to the list of tracks in the modules (specializations). In particular, an existing module in Information Security was improved for content, a new module in Big Data was added to include courses in Social Media Analytics and Machine Learning, and a new course in Cognitive Computing for Smart Service Systems was added to the Decision Support Systems module. These curricular related changes have already resulted in higher enrollments in the program. It is expected that with the introduction of new concepts and technologies in the field MIT program will continue to update its curriculum to remain a leader in IT graduate education and effectively respond to the needs of technology-driven organizations.

To improve the quality of online course delivery and students’ learning effectiveness in MIT, faculty in the program are provided instructional training and support in order to meet national online certification requirements and to design highly engaging asynchronous courses benefitting students attending class online from many different time zones around the world.

### **MIT global gateways and the extended campus**

The MIT administration is located in the Northern Virginia Center and many of its courses originate with faculty based in the NCR. The MIT has the potential for global enrollment and we have devoted significant effort to promoting the program in locations outside the US including through a collaboration with Virginia Tech’s Research Center in India. Despite these efforts, we have few international students enrolled so far. Part of the problem is that there are attractive alternatives that cost much less than the online MIT.

### **MIT formal and informal experiential learning**

While all MIT graduates participate in formal experiential learning due to virtual group projects in courses, we do not guarantee that these geographically disperse, online students have informal experiential learning.

A typical student enrolled in the Master of Information Technology degree program is 29 years of age and holds a mid-level management or technical position at an organization. Such an individual has at least seven years of work experience working at various industries including information technology, services, government contracting, consulting, defense contracting, etc. Students are accustomed to working virtually in groups on projects that are closely tied to their companies using data and information gathered from their work. For example, in the Web-based Applications (BIT 5594) course teams of students engage in innovative e-commerce business development projects, prepare a business model, and dynamically create and operate the online business. This type of experiential learning exercise is also common in other courses in IT security, software development, healthcare IT, and others.

MIT students are exposed to a mix of business and engineering IT courses that nurture innovation and entrepreneurship. One of the first courses (MGT 5804-Strategic Leadership in Technology-based Organizations) taken by students is about disruptive technologies and the opportunities created for further innovation when such disruptive technologies are introduced. Students in this course work in teams identifying future potential technologies and their societal and economic impacts. Another highly engaging and experiential course is ECE 5585—IT & Security Trust, where students study cyber-security, attack and defense strategies, and incident response by analyzing common practices for security vulnerabilities in companies. Students build trustworthy systems and learn how to protect critical infrastructure through relevant security solutions.

### **MIT hiring plans**

Faculty from Pamplin and the College of Engineering design and teach course leading to the MIT degree. We have no plans for hiring additional faculty dedicated to the MIT. One of the design features of the MIT is its scalability. Each “master faculty” member can teach an almost unlimited number of students so long as we provide support including “distance learning instructors” or DLI’s. As enrollment grows, the program will need a modest increases in staff.

A significant issue is assuring that both colleges provide faculty well suited to designing courses for and teaching in the MIT.



## **Executive doctorate**

The executive doctorate (formally the Ph.D. in Business with concentration in Executive Business Research) enrolled its first students for class in fall 2016 so it does not have a wide reputation nor does it have a record of performance to support its classification as a nationally ranked program. However, I expect that within five years it will have a top tier reputation and list of key accomplishments.

### **Executive doctorate benchmarks**

1. Enrollment
2. Perception
3. Career success

At this time, no reputable ranking of executive doctorates exists. The Executive DBA Council (EDBAC) is lobbying major organizations (e.g., *US News and World Report*, *Financial Times*) to begin such a ranking but the small size and number of programs makes this a low priority for these organizations. EDBAC is also lobbying AACSB to collect and publish information about the programs to help potential students choose an appropriate program. We are actively supporting these efforts.

**Enrollment:** As more fully described below, our goal is for each entering cohort to consist of 10 students and for total enrollment to rise to 28 in steady state. We will monitor the diversity of the enrollment and as described below, take actions to attract a diverse class.

**Perception:** We will survey graduates from the Pamplin executive doctorate after graduation to monitor their perceptions of the quality of the program. The jobs that graduates assume after graduation is in part, a measure of the perception that other universities have about the quality of the program.

**Career success:** Pamplin's executive doctorate is unique in that our goal is for the majority of graduates to become faculty members at accredited business schools. Some will become tenure-track while others will take on "collegiate" faculty roles. We recognize that some graduates will prefer to remain in private business or government roles. We will track the number who are placed in AACSB accreted business schools and have a goal for 80% to be placed in these positions within one year of graduation.

### **Executive doctorate enrollment projections**

We plan to form a cohort of 10 each summer. The degree is designed to be completed in three years. While other executive doctorates in business exist, none of them are as research focused as the one we have created. This fact plus the fact that this is a new program makes predicting retention is less reliable than with other Pamplin programs. We had a strong applicant pool and so admitted 12 with the expectation that not all will be prepared for the commitment required to complete the degree.

### Executive Doctorate Enrollment Projections

Fall	2016	2017	2018	2019
Enrollment	12	20	28	28

#### Executive doctorate strategies to achieve greater diversity

The executive doctorate is located in northern Virginia. This location makes attracting a racially diverse class realistic. Pamplin's full-time Ph.D. program in Blacksburg has achieved some racial diversity by participating in the Ph.D. Project. (See <http://www.phdproject.org/>). The Executive Doctorate will be represented at the Ph.D. project by the program's director and alumni from the Ph.D. project who have had good experiences in our full-time Ph.D. program.

The first cohort includes ten males and two females. Eight identify as white, one as black, one as Hispanic, one as Asian and one did not self-identify.

#### Executive doctorate contributions to the VT-shaped student

The executive doctorate program contributes strongly to some components of the VT-Shaped Student but is not designed to fully contribute to all aspects. The required core courses assure that graduates have solid IT preparation. The creation of this degree has allowed Pamplin's doctoral program directors to reconsider the courses and requirements for the Ph.D. in Business more generally and create some courses across business disciplines. For example, the six academic departments (finance, marketing, etc.) formerly taught methodology courses for each of their concentrations—now only two versions of the course will be taught. All students in the Ph.D. in Business with the expectation of a relatively quantitative research experience will take one curriculum while other students will take another. Students in the full-time program and executive format program will share the same course section through a videoconference link.

All business Ph.D. students have technology expertise. The admissions process will assure that all executive doctorate students are purpose driven.

Executive doctorate students are selected, in part, because of backgrounds filled with experiential learning. These experiences will contribute to their classroom experiences and to the research that will be expressed in their dissertations and future work/publications.

#### Executive doctorate contributions to DA's and pathways

Students in the executive doctorate, like any business doctorate, will receive very personal instruction and mentoring as they select courses related to their research and conduct that research. A significant proportion of the students will choose to focus on data and decision sciences. Based on the first cohort, a significant proportion of these students will also focus their research on topics related to the Strategic Growth Area, Policy.

As a graduate degree, the Executive Doctorate does not have a direct role in “pathways.” It does however, assure that its students exceed the goal of “basic technology proficiency.”

### **Executive doctorate curricular redesign plans**

The executive doctorate is effectively a new degree. Nevertheless, it is based on the existing Ph.D. in Business. As explained above, the creation of the executive doctorate has caused Pamplin to make some changes in the Ph.D. in Business. Experience with the operation of the degree is expected to demonstrate the need for additional changes.

### **Executive doctorate global gateways and the extended campus**

The executive doctorate administration and courses are located in the Northern Virginia Center and the majority of its students will be based in that location. The first cohort has two students flying in from out of state to participate.

### **Executive doctorate formal and informal experiential learning**

The executive doctorate requires students to conduct original research so experiential learning is guaranteed.

### **Executive doctorate hiring plans**

The Director of the executive doctorate was hired one year ago from Johns Hopkins. As a well-known leader in business research, he is well qualified to set up the program. We do not plan to hire additional faculty specifically for the executive Doctorate but instead have scheduled faculty based at the Northern Virginia Center and in Blacksburg to teach and mentor our students. This can be accomplished through planned hiring in section 2.1.1 so long as we apply judgement to the mathematical model’s output for allocating faculty among the disciplines.

## Evening MBA (EvMBA)

The Evening MBA is a professional degree operating at the Northern Virginia Center in Falls Church. It is our flagship format of the MBA and is staffed largely by tenure-track faculty who reside in northern Virginia. We are reaching a point where the NVC is no longer adequate for the program. Some of the class sections are constrained by classroom size—a problem we did not face three years ago. We are beginning to run out of offices and other types of space to provide additional student services.

### EvMBA benchmarks

1. Applicant quality/interest
2. Student satisfaction
3. Career success
4. Rankings

**Applicant quality/interest:** We are actively seeking to increase the number, quality and diversity of applicants for the EvMBA. This applicant interest is expected to be reflected in increasing total enrollment measured in SCH. (See the table below.) We will also track the quality of the enrolled students measured by GMAT, GRE, previous grades and work experience. These quality measures must remain high but our focus is not to seek significant improvement in these measures. As explained below, we are taking steps to increase diversity and expect to see improvement.

**Student satisfaction:** We are developing a survey that will ask graduates about the overall quality of the degree program. We also track student satisfaction with individual courses using the university's SPOT system. Faculty are strongly encouraged to assure students know we take their feedback seriously—this has resulted in Pamplin having a relatively high SPOT participation rate.

**Career success:** Generally EvMBA students are employed while completing the program so measuring the percent placed at graduation is less meaningful than measures of career progression. We are developing a survey for EvMBA alumni that will request information such as their increase in salary after graduation.

**Rankings:** *US News and World Report* ranks the EvMBA as a part-time MBA program using a number of metrics. Our rank improved from 46 in 2014 to 16 in the most recent ranking.

### EvMBA Enrollment projections

Enrollment in the Evening MBA is measured in SCH for each academic year since students study part time and the number of credits in which they enroll each semester varies. We include Commonwealth Campus students taking MBA classes who may later enroll in the degree. The projections below are significantly higher than those in the 2015 "Pamplin Graduate Enrollment Plan." By the 2019-2020

academic year, the projections have increased by almost 50% as compared to those from the “Pamplin Graduate Enrollment Plan.”

**EvMBA Enrollment Projections**

AY	2016-17	2017-18	2018-19	2019-20
SCH	2300	2600	2900	3200

**EvMBA strategies to achieve greater diversity**

The EvMBA is located in northern Virginia. This location makes attracting a racially and ethnically diverse class realistic. For the past five years the Evening MBA has enrolled between 33% and 37% female students in the program. Our goal is to increase this percent to 40% in coming years. Historically more than 70% of students enrolled have been white. The remainder includes 15 to 26% Asian, 2 to 4% Hispanic, and 2 to 5% Black.

One reason for low number of Blacks and Hispanics is the high tuition differential charged at Virginia Tech out-of-state students. Other NCR universities such as the University of Maryland and George Mason University charge a uniform tuition rate for in-state and out-of-state students, resulting in much lower total tuition cost than Virginia Tech. A uniform tuition rate in the NCR would be very helpful in making the EvMBA class more racially diverse. We plan to work with the budget office to propose such a change in the 2016-2017 academic year. Other initiatives will also be taken to increase the number of minorities in this program including increasing availability of scholarship funds, increasing attendance at targeted events to recruit, production of relevant promotional materials, and using targeted social media to reach these groups.

**EvMBA contributions to the VT-shaped student**

The Evening MBA contributes strongly to most components of the VT-Shaped Student. The required core courses assure that graduates have solid IT preparation. The core assures interdisciplinary collaboration. All MBA students have technology expertise. It is less clear that all are purpose driven. All have experiential learning as described in a later section.

**EvMBA contributions to destination areas and pathways**

The Evening MBA Program is very supportive of the instructional goals of some of the destination areas. The MBA curriculum includes courses and concentrations that directly relate to Destination Areas in Decision Sciences, including Business Intelligence/Business Analytics and Information Technology Management; Innovation and entrepreneurship, including Entrepreneurial Leadership and Management; and Integrated Security, including IT Security & Trust. These are popular specializations within the degree and are studied by more than 30% of enrolled students.

As a graduate degree, the Evening MBA does not have a direct role in “pathways.”

## **EvMBA curricular redesign plans**

Pamplin College of Business undertook a comprehensive review of the Evening MBA (EvMBA) program curriculum in 2015-2016. The Graduate Studies & Policies Committee made a series of recommendations in fall 2015 that will be implemented with the incoming class of students in fall 2016. Major improvements recommended include: a) revising the curriculum to meet the national trend in business graduate education, allowing professional students working full-time to complete the degree in two years – this required introduction of few two-credit courses that can be taken in conjunction with regular 3-credit semester long courses; b) revising core courses to strengthen foundational knowledge of students; and c) incorporating Pamplin College's strategic focus and leadership on Business Intelligence and Analytics, Innovation through Entrepreneurship, and International Programs into core courses and by offering program level concentrations (specializations) in each of these areas.

These changes in the MBA curriculum at Virginia Tech continue to differentiate itself from its regional and national competition while also emphasizing one or more of the Destination Areas, preparing students for educational opportunities in these critical fields. Under this plan students will be given the opportunity to expedite their plan of study. In various surveys students have expressed the need for shortening the program duration and faculty have responded by introducing two-credit courses that can be taken on weekends in addition to semester-long courses that are available weekly. Similarly, a larger number of summer term courses will be introduced to support this plan.

Besides creating two-credit courses, there were new additions to the core including adding a second course in accounting that resulted in a 32-credit hour core program (MBA requires completion of 48 hours of course work). At the elective level, a new course in corporate communications was introduced in collaboration with the faculty of the College of Liberal Arts and Human Sciences. This was in response to feedback received from the alumni and national surveys conducted with corporate leaders. This course was offered in summer I, 2016, and has been received very positively by students. Other electives under consideration include courses in government contracting to meet the needs of students working in the defense contracting and consulting industries, additional courses in entrepreneurship, and international residency courses.

## **EvMBA global gateways and the extended campus**

The Evening MBA administration is located in the Northern Virginia Center and its courses originate with faculty based in the NCR. The program is one of the largest that Virginia Tech runs beyond Blacksburg.

## **EvMBA formal and informal experiential learning**

More than 95% of students completing the MBA from Pamplin are professionals working full-time at various industries including consulting, technology, healthcare, banking, government agencies, defense contracting and others. These organizations are excellent laboratories for Pamplin faculty to use for experiential

learning while teaching various concepts and theories in business. Every MBA course is designed and taught with practical applications relevant to these industries. Students are typically required to solve practical problems they identify from their respective organization. Such problems involve actual company information and data that students use to apply course related models, methods, and theories.

To further encourage experiential learning MBA students are provided the opportunity to work one-on-one with Pamplin's MBA alumni. Alumni serve as mentors sharing their corporate experience and knowledge and provide professional guidance on career related matters. More than 75% of enrolled students participate in this program. In some cases alumni in leadership roles serve on project teams with other corporate leaders to supervise student projects.

As part of the strategic management course MBA students participate in a statewide case competition with students from University of Virginia, William & Mary, and University of Richmond. This is a corporate sponsored and managed competition requiring student teams from each university to solve actual business problems located for companies located in Virginia. Often these cases are complex and multifaceted requiring both academic and experiential knowledge on the part of students. Participation in this exercise teaches teamwork, problem solving, and application of academic concepts to large-scale problems.

Many of the courses in the MBA curriculum equip students with the knowledge and preparation for one or more of destination areas. This can be found in core courses as well as in concentration courses specifically designed around Business Intelligence and Analytics (Decision Sciences DA), and Entrepreneurship (SGA). Many of the courses from the Master of Information Technology program (MIT) are also available as MBA concentrations where students can take information security courses (Integrated Security DA) and Machine Learning.

### **EvMBA hiring plans**

Pamplin's enrollment in the NCR is growing and that growth will continue for the foreseeable future. The Evening MBA is Pamplin's largest and most well-known master's program so additional teaching resources, including tenure-track and non-tenure-track faculty will be needed.

## **2.2.2. Regionally competitive programs**

### **BS in Business Minor in International Business (Sustainable Global Prosperity)**

Pamplin's strategic plan identifies sustainable global prosperity as one of its focal areas. Building on its existing minor in international business, this initiative will add courses and experiential learning opportunities in business ethics and corporate social responsibility, and social entrepreneurship. Combined, these three areas—international business, business ethics and corporate social responsibility, and social entrepreneurship—comprise a planned expansion of the international business minor to encompass the broader domain of sustainable global prosperity.

The existing Minor in International Business has focused on conducting business across international borders. There are inherent differences in doing business with and between business and government entities outside the US that require that students not only be able to translate standard business practices to other country contexts, but requires added international business skills including learning to speak a different language, understanding the customs of other countries, and navigating different political, government and legal systems.

#### **Expanding the Minor to focus on Sustainable Global Prosperity**

Expanding the minor to encompass sustainable global prosperity will involve adding two major topic domains—business ethics and corporate social responsibility, and social entrepreneurship. The former domain addresses the challenges faced by individuals in businesses and society to recognize not only the financial considerations of decisions but also their legal, moral and ethical components. The attendant dilemmas are challenges that all individuals face, often without clear simple solutions and often with potentially painful consequences. Learning how to recognize these dilemmas and providing frameworks with which to address them appropriately are skills every business person and member of society must learn. Moreover, managers today need to consider the consequences of business actions for not just shareholders but all organizational stakeholders—employers, customers, vendors, the communities in which business establishments reside and the environment. Effective global business leadership requires recognizing the needs and challenges of these various stakeholders and learning to manage effectively within these constraints.

The second major domain to be added to the minor is social entrepreneurship, which focuses on a positive approach to the use of entrepreneurial business ventures or business start-up techniques to develop, fund and implement innovative solutions to social, cultural, or environmental issues that either cannot or are not being effectively addressed. These ventures use the power of commerce to generate and coordinate the resources needed to fund new and innovative solutions to important problems—particularly problems that traditional firms don't address.

#### **Minor benchmarks**

1. Applicant quality/interest



1. Student satisfaction
2. Recruiter perceptions

While rankings of majors in international business exist, none are available for minors, particularly of the expanded type contemplated.

**Applicant quality/interest:** The current International Business minor is open to all Business majors. Trends across the country suggest that an increasing number of students are interested in programs that address not only international business but also the potential of business to effect economic development and social change. In addition, we will explore potential linkages of this program to majors in related destination and strategic growth areas and possible avenues to opening the minor to students outside of Pamplin.

**Student satisfaction:** We will track student satisfaction with individual courses using the university’s SPOT system. We will also develop a survey that will ask graduates about the overall quality of the degree program and its value to their development as business graduates.

**Rankings:** Recruiters of BS Business graduates often comment on the value of the international experiences. We will collect data from recruiters on their perceptions of the program and BS Business graduates who complete this minor.

**Enrollment Projections**

An increasing number of Pamplin students are expressing interest in pursuing coursework and activities related to social entrepreneurship. We extrapolate from enrollments in the current international business minor:

**Minor in Sustainable Global Prosperity Enrollment Projections**

AY	2016-17	2017-18	2018-19	2019-20
<b>Students</b>	91	100	120	140

In addition to enrollments specifically in the minor, Pamplin has a long history of very successful study abroad programs to help students understand how to work with people from diverse cultures and to operate effectively in other countries. The University scorecard indicates 37% of Pamplin students have participated in at least one study abroad experience; however, internal data suggest this number is closer to 25%.

**Minor in Sustainable Global Prosperity strategies to achieve greater diversity**

The Minor will capitalize on the programs developed for the BS in Business to increase the diversity of students pursuing the minor.

### **Minor in Sustainable Global Prosperity contributions to the VT-shaped student**

Open to all Pamplin majors, the minor provides extraordinary opportunities for enriching the student's exposure to the global context—not only in business but the broader economic, social, and political environment as well as development issues such as inequality and environmental degradation. Study abroad programs, international internships, and exchange programs are available to provide students with hands-on global experience.

### **Minor in Sustainable Global Prosperity contributions to destination areas and pathways**

Starting in Fall 2017, a new course, MGT/HTM 2314 International Business, will be made available to all students in the Pamplin college. This course will become a college requirement for all Pamplin majors starting with students graduating in 2020. We also will explore the potential of this course for pathways status.

The minor has natural links to the Global Systems Science destination area as well as the Innovation and Entrepreneurship strategic growth area. We will explore possible participation in curricular initiatives in these areas.

### **Minor in Sustainable Global Prosperity curricular redesign plans**

While the development of the minor will entail substantial redesign of the existing minor, the needed courses to offer this minor already exist. With respect to international business, Pamplin offers courses in upper level courses in International Finance, International Management, and International Marketing. Pamplin offers a range of courses for students in the BS in Business that offer intensive examinations of managing legally, morally and ethically. These courses include FIN 3055 Legal Dimensions of Business, MGT 4334 Ethical Leadership and Corporate Social Responsibility, and MKTG 4644 Marketing, Society and the Public Interest. Pamplin offered its first formal course in social entrepreneurship, MGT 3074 Social Entrepreneurship in the spring of 2016. Taught by a faculty member who had built a successful Benefit Corporation in Virginia, the course received strong reviews.

### **Minor in Sustainable Global Prosperity global gateways and the extended campus**

Pamplin will continue to offer faculty-led study abroad programs, but greater emphasis will be placed on strategically identifying opportunities for programs that align with Pamplin's strengths and offer the opportunity for richer relationships that build beyond the contacts of individual faculty to build multipoint relationships that incorporate not only instruction, but opportunities for research and service. These institutionally identified programs will receive more staff support and are expected to remain active beyond the interests and availability of those faculty initially engaged. The college will enhance and expand these opportunities, leveraging relationships with international partner schools, alumni contacts abroad, and on-campus partners.

In NCR, the College's graduate professional programs offer international experiences for students in the EvMBA program and requires an international experience for students in the EMBA. Both of these are expected to continue.

**Minor in Sustainable Global Prosperity formal and informal experiential learning**

The primary venue for experiential learning in this minor is and will likely remain a study abroad experience. Two of the College's semester-long study abroad programs have incorporated social outreach components involving projects in Africa. These programs enrolled over 100 students in total last year.

**Minor in Sustainable Global Prosperity hiring plans**

We do not plan to hire additional full-time faculty for this program. However, as the program grows, it is likely that we will need additional non-tenure track faculty with appropriate professional experience and expertise.

## **BS in Business Minor in Professional Sales**

The demand for graduates with the Professional Sales designation far outstrips supply not only at Virginia Tech but also throughout the nation. Currently there are less than 110 universities with professional sales programs. Of those programs, less than 100 are recognized by the Sales Education Foundation (SEF) and less than 70 are members of the University Sales Center Alliance (USCA). Virginia Tech is both a member of USCA and is recognized by SEF.

The Professional Sales Minor (also an option within the Marketing Management major) is an upper division undergraduate program housed in and administered by the Marketing Department in the Pamplin College of Business. The Professional Sales Minor provides students with the knowledge and skills necessary to successfully enter the field of professional sales. Currently open only to students in Pamplin, we plan to open the minor to students from other Colleges once the required resources are in place.

Professional sales classes are taught on the Blacksburg campus. For the most part, classrooms are sufficient and well equipped enough to handle the current level of participation in the program. However, the Blacksburg campus currently lacks the needed professional sales rooms used to video role plays and sales practice of the students. In addition, classroom setup is not ideal for sales studies, which require group project work and discussion. As the program grows, both additional classrooms and instructors will be needed in order to continue to deliver a competitive program.

### **Professional Sales benchmarks**

1. Applicant quality/interest
2. Student satisfaction
3. Placement success

Rankings are not available for this program. Virginia Tech is recognized by both the SEF and USCA, the two leading groups in collegiate sales education. In addition, as students participate in regional and national university sales competitions, we will gain further insight on the relative strength of our program.

**Applicant quality/interest:** Currently all Marketing undergraduates are required to complete the initial introduction to sales class (MKTG 4554, Buyer/Seller Relationships). In addition, the class attracts students from Finance, Management, HTM, and Apparel, Housing and Resource Management.

The senior level classes are currently limited to students in Marketing. We plan to open the minor to students from other disciplines may pursue the minor. However, the classes are already over capacity as demand has far outstripped supply.

Current plans are to consider increasing both the number of instructors and classes offered to accommodate new students. Included in that plan would be the expansion of the program. Initially, the courses would be opened to all business

students, followed later by engineering students and then ultimately to the entire university.

**Student satisfaction:** We are developing a survey that will ask graduates about the overall quality of the degree program. Initial communication with graduates on random basis has yielded very high satisfaction. This satisfaction is also found in the university's SPOT system. The courses generally score very well.

**Placement success:** The Professional Sales graduate enjoys a placement rate that few other disciplines at Virginia Tech achieve. Currently, the demand for the degree by industry far outstrips the supply. Consequently, most of our graduates with the professional sales degree have multiple offers upon graduation. Since 2013 when our first graduates were available for hire, we have placed 100% of the graduates of the program. Virtually all of the placements have been in the Business-to-Business marketplace where salaries are higher than retail and potential commissions earned are not limited.

### **Professional Sales enrollment projections**

Enrollment in the Professional Sales Program is measured as the number of students enrolled in the senior level classes each year. This includes the Advanced Professional Sales course and the Strategic Sales Management course. Keep in mind the Minor/Concentration is new (2013) and the Faculty are limited (1 at the senior level). We make the assumptions that Faculty numbers are increased and the sales program is not limited to students in Marketing.

**Enrollment Projections**

<b>Fall</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>
<b>Enrollment</b>	43	70	120	150

### **Professional Sales Strategies to achieve greater diversity**

The Professional Sales Minor/Concentration is offered on the Blacksburg campus. It follows the diversity trends of the Marketing discipline as well as the business school in general.

Our future plans to open the Minor to other disciplines will affect the diversity levels and we expect the Minor to mirror the diversity in Virginia Tech as a whole. Given that we have outside funding in the Professional Sales Minor, we may have the option in the future to supplement tuition costs for underrepresented students.

Other solutions for increasing the proportion of minority students in the program would be to attend professional events organized by minority groups, to prepare relevant promotional materials, and to use targeted social media to advertise.

### **Professional Sales contributions to the VT-shaped student**

The Professional Sales Minor/Concentration contributes strongly to most components of the VT-Shaped Student. The required core courses assure that

graduates have solid sales preparation. The core assures interdisciplinary collaboration.

### **Professional Sales contributions to destination areas and pathways**

The Professional Sales Minor is supportive of the goals of all of the destination areas. All areas require selling of some kind to achieve the goals of the organization. Whether it's a new medicine or new pathway of thought, one must ultimately sell the products, services or ideas to achieve support. This process applies whether it's locally, nationally or internationally sourced. Attracting people, projects and partners to Virginia Tech is a fundamental part of the sales process.

### **Professional Sales curricular redesign plans**

The curriculum is relatively new (2013) and will need to be in constant review. While fundamentals stay the same, new ideas and ways of selling occur frequently and we must stay on top of those changes to remain in the cutting edge of education. Both internal (professors, academic review) and external (Sales industry Board, corporate sponsors) review need to take place on an ongoing basis to determine what, if anything, needs to be updated to meet the demands of the marketplace.

The Professional Sales Minor is currently designed to serve students interested in the B2B corporate sales environment. Although presently aimed at the undergraduate level, the curriculum could be adapted to the graduate level of study. The program provides students with enough sales acumen that they can enter the workforce at a higher level than their counterparts and begin to create a ROI for their employer much faster than a non-sales student.

### **Professional Sales global gateways and the extended campus**

The Professional Sales program is located in Blacksburg. As an undergraduate program, it makes sense to keep it on the main campus so that local Faculty can teach the courses.

In the future, the program could be expanded to other campuses, including international destinations as well as to the graduate level of business study.

### **Professional Sales formal and informal experiential learning**

The courses include not only Faculty instruction but also corporate involvement. Due to the nature of sales and the demand for students, corporate executives request speaking engagements in the classrooms. Corporate sponsors routinely provide an additional look into the world of the salesperson by conducting live role plays and sales calls in the classroom environment. Students are asked to work current live case studies that directly affect the sales process of businesses presenting. Many of these projects require both an individual and team project work and presentation. Students get to see how their decisions affect the sales workplace and the ultimate decision implemented by the organization.

Experiential learning is a core part of the Professional Sales curriculum. The combination of course materials and corporate practice allow the student to achieve not only an academic foundation in sales, but also a practical, hands-on experience. Students in the program also have the opportunity to participate in regional sales competitions and VT students have been very successful in them, which contributes not only to their experiences but also to their placement success.

### **Professional Sales hiring plans**

The program faculty are located in Blacksburg. To accommodate program growth, added faculty support will be required. Many of the courses in the sales minor lend themselves to being taught by Professors of Practice or Instructors with strong professional backgrounds. No further tenure-track faculty are expected to be added for this program.

## **PMBA (Professional MBA)**

The Professional MBA (PMBA) is a professional degree with classes rotating between sites in Roanoke and Richmond. Course delivery is designed to accommodate the work schedule of many business professionals. We provide this program as a service to people in the state who desire to obtain a quality MBA at a competitive cost and with face-to-face interaction with faculty and peers. Students in PMBA are mid-level managers working in various industries including manufacturing, IT, banking, education, healthcare, etc. There are differences between EMBA and PMBA formats in course delivery, tuition, and frequency of class meetings. However, there are many similarities in the curriculum between EMBA and PMBA.

The facilities in Roanoke are well suited to the program. However, the facilities in Richmond are poor. We need to consider the value in holding classes in Richmond as opposed to focusing on the Roanoke location with marketing throughout the state. If the Richmond facilities are not upgraded quickly or if the proportion of students continues to shift to Blacksburg/Roanoke than we should make this change soon.

### **PMBA benchmarks**

1. Applicant quality/interest
2. Student satisfaction
3. Career success

Rankings are not available for this program. To a limited extent, its quality is reflected in the rank of the Evening MBA.

**Applicant quality/interest:** We are actively seeking to increase the number, quality and diversity of applicants for the PMBA. This applicant interest is expected to be reflected in increasing total enrollment. (See the table below.) We will also track the quality of the enrolled students measured by GMAT, GRE, previous grades and work experience. These quality measures must remain high but our focus is not to seek significant improvement in these measures. As explained above, we will also monitor the proportion of students coming from Richmond and consider dropping that location if it drops further. As explained below, we are taking steps to increase diversity and expect to see improvement.

**Student satisfaction:** We are developing a survey that will ask graduates about the overall quality of the degree program. We also track student satisfaction with individual courses using the university's SPOT system. Faculty are strongly encouraged to assure students know we take their feedback seriously—this has resulted in Pamplin having a relatively high SPOT participation rate.

**Career success:** Generally PMBA students are employed while completing the program so measuring the percent placed at graduation is less meaningful than measures of career progression. We are developing a survey for PMBA alumni that will request information such as their increase in salary after graduation.



## **PMBA enrollment projections**

Enrollment in the PMBA is measured as the number of students enrolled after census each fall. This includes students in two cohorts. We include Commonwealth Campus students taking MBA who plan to enroll in the degree. At present the room used in the Richmond Higher Education Center has a capacity of 30 which limits the size of the PMBA to 60. The projections below assume that a slightly larger classroom becomes available or we drop the Richmond location.

### **PMBA Enrollment Projections**

<b>Fall</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>
<b>Enrollment</b>	60	65	70	70

## **PMBA Strategies to achieve greater diversity**

The Professional MBA is offered in the Richmond and Roanoke centers. The Richmond location in particular provides greater opportunities to attract a racially diverse class but this potential has not been realized. For the past four years the Professional MBA has enrolled about 35% female students, 11% Asian students, and 4% African American students.

We have considered tactics to take better advantage of Richmond to increase class diversity. One possible avenue for this is to increase the tuition scholarship amount available for underrepresented students. Some universities in the Richmond area charge lower tuition than the PMBA. To offset this tuition differential additional scholarship funds can make Virginia Tech more competitive. Other actions to increase the proportion of minority students in the program are to attend professional events organized by minority groups, to recruit from colleges and universities with large number of minority students, to prepare relevant promotional materials, and to use targeted social media to advertise.

## **PMBA contributions to the VT-shaped student**

The Professional MBA contributes strongly to most components of the VT-Shaped Student. The required core courses assure that graduates have solid IT preparation. The core assures interdisciplinary collaboration. All MBA students have technology expertise. It is less clear that all are purpose driven.

## **PMBA contributions to destination areas and pathways**

The PMBA Program is supportive of the instructional goals of some of the destination areas. The PMBA curriculum includes courses and concentrations that directly relate to Destination Areas in Innovation and entrepreneurship, Decision Sciences. As a graduate degree, the PMBA does not have a direct role in “pathways.”

### **PMBA curricular redesign plans**

There are many similarities in the curriculum between EMBA and PMBA. As such, we expect that many of the recommendations to revise the EMBA curriculum made in spring 2016 will also be implemented in the PMBA program. Pamplin's Graduate Studies and Policies Committee will review the PMBA curriculum and possible revisions in 2016-2017.

### **PMBA global gateways and the extended campus**

The Professional MBA administration is located in Blacksburg but will be moved to the Northern Virginia Center during the next academic year. Faculty from Blacksburg and from northern Virginia teach its courses. Students are located primarily in proximity to the learning centers in Roanoke and Richmond but also come from other parts of the state. Some Virginia Tech employees in Blacksburg take advantage of the program.

### **PMBA formal and informal experiential learning**

The PMBA is designed to serve working professionals with several years of experience. It is designed to integrate students' experiential knowledge into courses through case analyses, team projects, and use of actual corporate problems and data. In addition to teaching fundamental knowledge of business curriculum faculty require students to apply such knowledge in their workplace. Many of the course requirements are based on student's ability to use the information from the course to solve problems facing the respective organization.

Involvement of corporate executives as guest speakers is commonplace in PMBA courses. In some cases corporate leaders serve as advisors to students in assembling a course project. Many of these projects are entrepreneurially motivated due to students' interest in start-up businesses. In short, experiential learning is built into the core of the PMBA curriculum and practiced by students in integrating course materials to solve organizational problems or in starting new businesses.

### **PMBA hiring plans**

Faculty from Blacksburg and to a lesser extent faculty based at the Northern Virginia Center teach courses for the PMBA. We do not plan to hire faculty specifically because of the needs of the PMBA program.

### **MD/MBA**

As one track in the PMBA, Pamplin and the Virginia Tech Carilion School of Medicine have collaborated on developing a curriculum for students interested in obtaining both an MBA and an MD. We are now finding that some practicing physicians also have interest in enrolling. This partnership provides an important service to the region but will never be large or attract physicians/students from beyond the region.

## **Master of Accounting and Information Systems (MACIS)**

The MACIS is designed for full-time students in Blacksburg. Most students enroll shortly after completing an undergraduate degree in accounting or another business major. The degree is normally completed in one year for students who enter with an undergraduate degree in accounting. Students with other business or non-business undergraduate degrees will need more time in the program to complete prerequisites.

### **MACIS benchmarks**

1. Applicant quality/interest
2. Student satisfaction
3. CPA pass rate
4. Career success
5. Rankings

**Applicant quality/interest:** We are actively seeking to increase the number, quality and diversity of applicants for the MACIS. This applicant interest is expected to be reflected in increasing total enrollment. (See the table below.) As explained below, we are taking steps to increase diversity and expect to see improvement.

**Student satisfaction:** We track student satisfaction with individual courses using the university's SPOT system. Faculty are strongly encouraged to assure students know we take their feedback seriously—this has resulted in Pamplin having a relatively high SPOT participation rate.

**CPA pass rate:** Our goal for the MACIS program is a three-year average percent CPA sections passed rate of 80% or higher for those with advanced degrees. For 2011-2013 the pass rate was 78%.

**Career success:** Students enrolled in the MACIS typically study full time and have employment goals that are qualitatively similar to graduates from our BS in Business. While we have anecdotal evidence of long-term career success, reliable benchmarks are not readily available. Therefore, we focus on initial career success using two metrics:

1. Percent placed at graduation and at 6 months
2. Average starting salary

**Rankings:** We consider the Public Accounting Report (PAR) ranking the most reputable for instructional accounting programs. Our goal is for the MACIS to be ranked at 20 or better among programs at "large" schools. We exceeded this goal with the rankings published in 2016 with a ranking of 13. Among all US schools, PAR ranks our MACIS program #22. The table below shows progress on this measure.

### PAR Ranking of MACIS among all US Accounting Masters

Year	2013	2014	2015	2016
Rank	NR	45	30	22

### MACIS enrollment projections

Enrollment in the MACIS is measured as the number of students enrolled after census each fall.

The projections below are reduced from those submitted in 2015 in the “Pamplin Graduate Enrollment Plan” because enrollment in fall 2016 is below expectations.

### MACIS Enrollment Projections

Fall	2016	2017	2018	2019
Enrollment	75	85	95	100

### MACIS strategies to achieve greater diversity

The MACIS is located in Blacksburg and enrolls primarily students who have completed a Pamplin ACIS degree. The population of the MACIS will become more diverse over time as the BS in Business becomes more diverse. Accounting firms are committed to diversity and are very active within the ACIS department. They have provided some resources to help increase diversity.

The tables below show how the enrollment in the MACIS has changed over the past few years in total and by race and gender.

### MACIS Racial Diversity

Race	2011	2012	2013	2014	2015
Asian	36	25	36	31	33
Black	2	0	2	2	1
Hispanic	2	3	0	1	2
Native American	0	0	1	0	1
White	72	47	47	32	44
Not reported	1	2	0	1	2
Total	113	77	86	67	83

### MACIS Gender Diversity

Gender	2011	2012	2013	2014	2015
Female	66	35	50	38	45
Male	47	42	36	29	38
Total	113	77	86	67	83

Our strategy to increase the diversity of our program involves investing in several different areas. First, we actively support and participate in the LEAP program run by the College. LEAP is a program for under-represented students to help them transition to College. Because many of the students in the MACIS program come from our undergraduate business program, this will increase the most likely pool of under-represented students to enter our graduate program. Second, we continue support for the National Association for Black Accountants (NABA) student group, and focus on and encourage its members to actively consider continuing on to the MACIS program. Third, in conjunction with our NABA emphasis along with efforts to reach external Pamplin students, we engage in development activities and fund raising with the goal of providing additional direct scholarship support for underrepresented students.

#### MACIS contributions to the VT-shaped student

The MACIS Program contributes strongly to some components of the VT-Shaped Student but as a specialized graduate degree, it is not designed to fully contribute to all of its aspects. The required core courses include accounting and information systems and so assure that graduates have solid IT preparation and technology expertise. There is some interdisciplinary collaboration but the undergraduate programs from which MACIS students are drawn are better suited to be the primary source of interdisciplinary education.

#### MACIS contributions to destination areas and pathways

The MACIS is supportive of the instructional goals of some of the destination areas. The MACIS curriculum includes courses and concentrations that directly relate to Data and Decision Sciences. As a graduate degree, the MACIS does not have a direct role in “pathways.”

#### MACIS curricular redesign plans

The ACIS faculty are currently providing an in-depth examination of the undergraduate and MACIS curriculum in order to ensure it remains current and rigorous, yet efficient for students to complete in a timely manner. An active part of this consideration involves moving some of the current courses from being required at the BS level and placing evolved content of those courses at the MACIS graduate level. This would provide efficiency and expediency for those wishing a basic undergraduate degree to enter industry while providing additional expertise and breadth useful for public accounting to be covered at the MACIS graduate level. This would encourage students wishing to go into public accounting to

continue to obtain their MACIS degree. This should help increase enrollment in MACIS while maintaining or increasing quality.

We have also worked to increase the attractiveness of our MACIS Graduate Assistantships by increasing the tuition remission from 35% to 50% which also increases the student stipend proportionally, and importantly, makes the student eligible for University sponsored health insurance. We continue to work to increase the number of tuition waivers granted to ACIS by the College to allow us to offer additional assistantships above what we currently offer. In an associated step, we continue development and fundraising efforts to provide additional scholarships for our MACIS students.

There is also discussion among faculty of the possibility of dis-entangling certain common requirements between accounting and information system student tracks. If this discussion should develop into specific future actions, we would take steps to ensure accounting students would continue to receive technology knowledge and skills which are valued by the marketplace.

As a longer term, but potentially important initiative, we are looking into the development of a four year BS/MS degree which facilitate students being able to complete the MACIS degree in four years along with their undergraduate degree. This program will need to be investigated by an ACIS faculty committee, and if considered viable, would need to be approved through the university governance process.

Additional strategies which should help increase MACIS enrollment include revising and updating our internet site describing the program and updating the descriptive videos included. We also have an initiative to visit various 4 year colleges in order to encourage them to obtain their MACIS degree at Virginia Tech. If this pilot program proves successful, we will expand the number of schools which are visited. Finally, the College has made major changes in the advisor system so it will be important for us to educate the relatively new undergraduate advisors regarding the merits and opportunities available to students through the MACIS degree.

### **MACIS global gateways and the extended campus**

The MACIS is administered in Blacksburg and all courses are taught in Blacksburg. A limited number of students are recruited from other accounting programs in the US and outside the US. We would like to attract more out of state students into our MACIS programs, but are faced with a number of significant hurdles, most important of which is likely the increased out of state tuition. If we are successful in increasing the number of tuition waivers made available to us, this would permit us to offer additional 50% assistantships. Importantly, this provides for in-state tuition for these students. Thus, increased assistantships and associated tuition waivers will be particularly attractive to out of state students. We plan to have a faculty committee examine possible ways to attract additional out of state students. There may be demand in the northern Virginia area sufficient to justify adding the NVC as a second degree location in the long run. However, the department does not have sufficient resources to create a second location. Our plan is to focus on improving

the quality and increasing the size of the Blacksburg-based program for the present.

### **MACIS formal and informal experiential learning**

The MACIS is primarily designed for students who have recently completed an undergraduate business degree and plan to begin a career in public accounting, industrial accounting, or governmental accounting. In addition, some students take positions with consulting firms. The range of opportunities for experiential learning is wide and includes activities directly connected to classes and supervised by faculty as well as student-initiated activities connected to companies, as well as other activities. Alumni from the ACIS department and other business professionals are very active in providing experiential learning activities. Accounting professionals and corporate executives as guest speakers is commonplace in MACIS courses.

### **MACIS hiring plans**

Our hiring plans for the future primarily focus on attracting top faculty who are experts in their area, and possess the ability to publish in elite accounting journals. Our current primary need is to attract at least one faculty member who possesses the ability to teach graduate tax classes in the MACIS program. As turnover and retirements occur, these hiring needs may expand.

## **Master in Business Analytics (MSBA-BA)<sup>1</sup>**

The Master in Business Analytics is a new program designed for full-time students in Blacksburg. We plan to recruit about half of the students from an undergraduate business major and about half from STEM and other fields. Most students will enroll while still an undergraduate and will begin the program in the summer after graduation. Some students will begin the program while still completing the requirements for a Virginia Tech undergraduate degree—we call this the “accelerated option.”

### **Master in Business Analytics benchmarks**

1. Corporate sponsorship (projects, cooperation, financial support)
2. Applicant quality/interest
3. Student satisfaction
4. Career success

Rankings of graduate business analytics degree programs (distinct from MBA concentrations) are not yet available. As these become available, Pamplin will seek to participate.

**Corporate sponsorship:** A key feature of this degree is the requirement for interdisciplinary student teams to complete a real project for a company over the course of two semesters. It is critical that the program directors identify enough good projects so that the team size is between three and five. Companies are required to interact with the student teams for the duration of the project to assure that the teams have access to data and fully understand the project even as its requirements may be changing. Companies are required to make a financial contribution to the program to have a project accepted.

**Applicant quality/interest:** We are actively seeking to increase the number, quality and diversity of applicants for the Master of Business Analytics. Applicant interest is expected to be reflected in increasing total enrollment. (See the table below.) As explained below, we are taking steps to increase diversity and expect to see improvement.

**Student satisfaction:** We track student satisfaction with individual courses using the university’s SPOT system. Faculty are strongly encouraged to assure students know we take their feedback seriously—this has resulted in Pamplin having a relatively high SPOT participation rate.

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<sup>1</sup> Formally the Master of Science in Business Administration with a concentration in Business Analytics



**Career success:** Students enrolled in the Master in Business Analytics typically have employment goals that are qualitatively similar to graduates from our BS in Business. The degree is new so we have no information about short term or long term success. We focus on initial career success using two metrics:

1. Percent placed at graduation and at 6 months following graduation
2. Average starting salary

### **Master in Business Analytics enrollment projections**

Enrollment in the Master in Business Analytics is measured as the number of students enrolled after census each summer. The degree is normally completed in one year so this is the enrollment of one cohort.

The projections below match those submitted in 2015 in the “Pamplin Graduate Enrollment Plan” except for 2016. The program was not approved for enrollment until one year later than expected so there was no class in 2015. The 2016 class was forecast to include 20 students. At this time, program enrollment exceeds our forecast with 19 full-time students, 1 part-time student, and 4 accelerated undergraduate students.

#### **Master in Business Analytics Enrollment Projections**

<b>Fall</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>
<b>Enrollment</b>	24	38	40	40

### **Master in Business Analytics strategies to achieve greater diversity**

The Master in Business Analytics is located in Blacksburg and enrolls primarily students who have completed a Virginia Tech degree. The population of the Master of Business Analytics will become more diverse over time as the Virginia Tech undergraduate population becomes more diverse. In addition to diversity in terms of gender, race, etc. diversity for this degree includes undergraduate background.

The first cohort is 73% male and 27% female. The table below summarizes the self-reported race of students who applied, were accepted and are enrolled either full-time or in the accelerated program.

#### **Master in Business Analytics Racial Diversity**

<b>Race</b>	<b># Applied</b>	<b># Accepted</b>	<b># Enrolled</b>
<b>African American</b>	6	5	4
<b>Asian</b>	9	7	4
<b>White</b>	18	18	14

For our inaugural cohort, 40% of students have an undergraduate degree in business (Accounting, BIT, Economic (2), Finance (3), and Marketing (2)). The remaining 60% of students come from varied academic backgrounds including:

Statistics (3); ISE (2); Apparel, Housing, and Resource Management; Consumer Science; English (combined with a JD); Environmental Policy; Human Nutrition, Food & Exercise; International Studies; Neuroscience; and Psychology.

The Center for Business Intelligence and Analytics will use GobblerConnect to identify student organizations consisting primarily of minority groups (e.g., Black Organizations Council, Black Student Alliance, Association for Women in Computing, Association for Women in Mathematics, etc.) to promote the MSBA-BA directly to members of these campus groups.

### **Master in Business Analytics contributions to the VT-shaped student**

The Master of Business Analytics contributes strongly to some components of the VT-Shaped Student but as a specialized graduate degree, it is not designed to fully contribute to all of its aspects. The required core and elective courses assure that graduates have solid IT preparation and technology expertise. The degree was designed around the concept of interdisciplinary collaboration including recruitment of a class with diverse undergraduate preparation and the requirement of a two-semester project assigned to interdisciplinary student teams.

### **Master in Business Analytics contributions to destination areas and pathways**

The Master in Business Analytics is supportive of the instructional goals of some of the destination areas. Its curriculum is designed to support Data and Decision Sciences. As a graduate degree, the MSBA-BA does not have a direct role in “pathways.”

### **Master in Business Analytics curricular redesign plans**

The Mater in Business Analytics is a new degree so its curriculum is not likely to require substantial change in the near term.

### **Master in Business Analytics global gateways and the extended campus**

The Master in Business Analytics is administered in Blacksburg and all courses are taught in Blacksburg. Most students will enroll after completing a degree at Virginia Tech’s Blacksburg campus. The required projects will be from companies that are typically outside of the New River Valley. Many will be from northern Virginia.

Once the program in Blacksburg is well established, we will explore the feasibility of providing the program at the Northern Virginia Center. We expect that there will be strong demand from students but staffing the courses, administration, and corporate relations/projects will be more significant challenges.

### **Master in Business Analytics formal and informal experiential learning**

The Master in Business Analytics is designed for students who have recently completed an undergraduate degree and plan to begin a career. Its courses use case analyses, team projects, and actual corporate problems. The two-semester

team project is the most intensive example of experiential learning in this instructional program. Representatives of the companies sponsoring the projects are required to act as advisors to the student teams and corporate executives are guest speakers in these courses.

### **Master in Business Analytics hiring plans**

There are no plans to recruit and hire faculty specifically to staff the courses and projects for the Master in Business Analytics. Faculty in Blacksburg teach all courses. If the program is expanded in the future to include a section in the NCR then it may be necessary to hire faculty specifically to make the program successful.

## **Master in HTM (MSBA-HTM)<sup>2</sup>**

The Master in HTM is a professional degree operating at the Northern Virginia Center in Falls Church. Course delivery is designed to accommodate the work schedule of many business professionals. The location takes advantage of major hospitality headquarters and industry partners located in the NCR. The program is staffed by tenure-track faculty who reside in northern Virginia, though some courses are taught via videoconference originating in Blacksburg and by adjunct faculty who are industry leaders in the field.

### **Master in HTM benchmarks**

1. Applicant quality/interest
2. Career success
3. Rankings
4. Student satisfaction

**Applicant quality/interest:** Interest in the master in HTM was strong for the inaugural class fall 2016 with nearly 30 applications. We are actively marketing the degree in various ways to both local and international students, including the development and approval of an accelerated degree program for our current undergraduates, collaborative proposals with the Language and Culture institute to attract international students to our certificate programs, joining forces with the Graduate School through attendance at graduate school fairs at our sister colleges and universities (including Virginia State University), and outreach to our corporate partners' minority leadership development programs. This applicant interest is expected to be reflected in increasing total enrollment. (See the table below.) As explained below, we are pleased with the diversity of our inaugural class and are taking steps to continue to increase the diversity of the program.

**Career success:** Generally MSBA HTM students are employed while completing the program so measuring the percent placed at graduation is less meaningful than measures of career progression. However, with a new degree, it is not possible to measure this. In the future, we will develop a survey for alumni that will request information such as their increase in salary, promotion rate, job satisfaction, and other measures of career advancement after graduation.

**Rankings:** As this is a new degree, the MSBA HTM is not ranked, nor is there a national standard ranking system currently in place specifically for MS degree programs in HTM. The program is generally ranked as a top 5-10 rated program depending on the system (<http://www.thebestschools.org/rankings/best-hospitality-degree-programs/>). We will investigate the most suitable ranking organization for it.

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<sup>2</sup> Formally the Master of Science in Business Administration with a concentration in Hospitality and Tourism Management

**Student satisfaction:** We track student satisfaction with individual courses using 1) a mid-term course evaluation and 2) the university’s SPOT system. Faculty take the feedback seriously, allow time in class for evaluations, and incorporate changes into the courses when appropriate. This has resulted in Pamplin having a relatively high SPOT participation rate.

**Master in HTM enrollment projections**

Enrollment in the Master in HTM is measured in number of students accepted into the program and attending HTM courses for each academic year. The projections are similar to the headcount based projections in 2015 in the “Pamplin Graduate Enrollment Plan” The program was not approved for enrollment until one year later than expected so there was no class in 2015; the 2016 class is expected to be 12 students.

**Master in HTM Enrollment Projections**

<b>AY</b>	<b>2016-17</b>	<b>2017-18</b>	<b>2018-19</b>	<b>2019-20</b>
<b>Students</b>	12	15	20	20

**Master in HTM strategies to achieve greater diversity**

The Master in HTM is located in northern Virginia. This location makes attracting a racially diverse class realistic. For fall 2016, the class of 12 accepted students is 50% white, 30% Asian, and 20% African-American/Black. HTM programs also tend to be more diverse in gender than the typical business program, and thus far this program is no exception, as women constitute 75% of the initial class.

The HTM Department is taking several actions to increase diversity. It is exploring the possibility of an agreement with Marriott Corporation to become more involved with their minority leadership development program. The department is also sharing information about this degree with Virginia State University with the intention of creating a diverse pipeline of students. It is also promoting the degree by speaking at NCR area chambers of commerce and tourism association meetings as well as participating in and advertising at the National Society of Minorities in Hospitality (NSMH) regional and national conferences. The department is keeping VP of Diversity and Inclusion, Dr. Menah Pratt-Clarke, abreast of the program.

**Master in HTM contributions to the VT-shaped student**

The Master in HTM contributes strongly to some components of the VT-Shaped Student but as a specialized graduate degree, it is not designed to fully contribute to all of its aspects. The required core and elective courses assure that graduates have solid IT preparation and technology expertise. Student achieve a depth of knowledge in one or more of the three concentrations of the Master in HTM: International Strategy in HTM, Entrepreneurship in HTM, and HTM Business Analytics and Revenue Management. This is complimented with a breadth of knowledge across business disciplines, achieved through the required core courses. Informal communal learning is facilitated through opportunities for students to engage outside the classroom. There is greater potential in this area,

however, for students to interact, if graduate student housing were to become available for students attending classes in the Falls Church campus. Finally, there are numerous experiential learning opportunities available through the program.

### **Master in HTM contributions to destination areas and pathways**

The Master in HTM Program is supportive of the instructional goals of some of the destination areas. The Master in HTM curriculum includes courses and concentrations that directly relate to Destination Areas in Innovation and Entrepreneurship and Decision Sciences. The degree has three areas of concentration: International Strategy in HTM, Entrepreneurship in HTM, and HTM Business Analytics and Revenue Management. The department also offers graduate certificates in each of these areas. The latter two concentrations/certificates are particularly well-suited for the Destination areas. Specifically, the purpose of the HTM Entrepreneurship concentration/certificate is to provide students with the specific tools and skills required to prepare them to engage in entrepreneurial activities in the area of Hospitality and Tourism management. In particular, this certificate will help students create a business plan that includes the financial, human resource, and leadership components vital for their success. What makes the program unique is the inclusion of a franchising course so that students can think beyond their initial start-up to the next step of becoming a franchise.

The concentration/certification in HTM Business Analytics and Revenue Management will provide middle managers in the Hospitality and Tourism industry with the tools and skills required to engage in high-level strategic thinking and analysis in the areas of revenue management and business analytics. In particular, this certificate will provide specific methods for students to utilize information systems as tools for dynamic forecasting of supply and demand and maximize profits in HTM-related businesses. Skills gained will ultimately allow certificate holders to compete for upper level managerial positions.

As a graduate degree, the Master in HTM does not have a direct role in “pathways.”

### **Master in HTM curricular redesign plans**

The Master in HTM is a new degree so its curriculum is not likely to require substantial change in the near term.

### **Master in HTM global gateways and the extended campus**

The Master in HTM administration is located in the Northern Virginia Center. It relies on courses that originate in the NCR as well as courses from Blacksburg. The degree has also been recently approved as an accelerated five-year degree program. This will be especially attractive to our undergraduates from the NCR as they can begin the coursework while still attending classes in Blacksburg and can complete the requirements when they return to the NCR upon their undergraduate graduation. OIRED and the Language and Cultural Institute have expressed interest in gaining access to certificates associated with the degree as part of a proposal to USAID.

### **Master in HTM formal and informal experiential learning**

Students in the Master in HTM participate in many experiential learning activities. Below, some of them are listed.

Students work on projects which require collecting data from a variety of hospitality businesses, such as hotels, restaurants, and attractions. For example, focus group research has been conducted and marketing plans developed for local businesses as a part of learning experience.

Groups of students visit service organizations in order to witness firsthand evaluation techniques for service quality.

Professors have held classes' onsite in hotels and conference centers.

Study abroad is available for those who would like to visit different countries as a part of the course work.

Guest speakers are common in all classes, bringing industry to the classroom. Whenever guest speakers are incorporated into the course, they use WebEx to connect to the Blacksburg campus so that undergraduate HTM students are able to take advantage of the experience remotely.

Students are encouraged to participate in international case study competitions. Several have won awards in the past.

Field trips are arranged to corporate headquarters of hospitality businesses.

### **Master in HTM hiring plans**

We do not plan to hire additional full-time faculty for this program. However, we will hire a small number of adjuncts. The location of the program makes it possible to hire experts in the areas of international strategy, human resources in the hospitality industry, hospitality finance, and revenue management. All have extensive and international experience working with major multinational hospitality corporations.

## Ph.D. in Business

The Ph.D. in Business is Pamplin’s traditional full-time doctoral program. It is discussed here as an instructional program and also in several places in section 2.2 where it contributes to various research programs in Pamplin. The focus of the program is to teach students how to conduct and publish high quality cutting-edge research as well as to excel in teaching. While it is categorized as a regionally competitive program, it has promise of becoming nationally ranked due to synergies with the new executive doctorate, new students being recruited and changes in faculty.

### Ph.D. in Business benchmarks

1. Career success
2. Publications
3. Perception

**Career success:** Pamplin’s Ph.D. in Business is intended for students who want to pursue intellectually challenging academic careers. Our long term goal is for 50% of them to be accept tenure-track positions at business schools from the “target” list. (See Appendix 4.) Currently slightly more than 10% achieve these positions shortly after graduation.

**Publications:** Number of accepted articles with at least one author who is enrolled in the Ph.D. in Business at the time of submission. (Only articles used by the department to maintain “Scholarly Academic” classification will be considered.) Our goal is for 20 acceptances per year. We also want our doctoral students to have research under review by Pamplin Elite journals prior to graduation.

**Perception:** At this time, no reputable ranking of business doctorates exists. The Public Accounting Report included Pamplin’s Ph.D. with an option in Accounting among the top 25 programs in the country for the first time in 2016.

### Ph. D. in Business enrollment projections

The Ph.D. in business typically requires between four to six years to complete. Our focus will be on improving quality rather than on increasing enrollment. The projections below match those from the 2015 “Pamplin Graduate Enrollment Plan.”

**Ph.D. in Business Enrollment Projections**

Fall	2016	2017	2018	2019
Enrollment	65	68	70	72

### Strategies to achieve greater diversity

Pamplin’s full-time Ph.D. program in Blacksburg has achieved some racial diversity by participating in the Ph.D. Project. (See <http://www.phdproject.org/>). We will continue to use the Ph.D. project to enhance diversity. We anticipate that the



Master in Business Analytics will be a feeder for the Ph.D. in Business so strategies planned to increase diversity of the masters program will benefit the Ph.D.

### **Ph.D. in Business contributions to the VT-shaped student**

The Ph.D. in Business contributes strongly to some components of the VT-Shaped Student but is not designed to fully contribute to all aspects. The required undergraduate preparation and required core courses assure that all graduates have solid IT preparation. The creation of the Executive Doctorate has allowed Pamplin's Ph.D. in Business to reconsider its courses and requirements. The college has created some courses across business disciplines. For example, the six academic departments (finance, marketing, etc.) formerly taught methodology courses for each of their concentrations—now only two versions of the course will be taught. All students in the Ph.D. in Business with the expectation of a relatively quantitative research experience will take one curriculum while other students will take another. Students in the full-time program and executive format program will share the same course section through a videoconference link.

All business Ph.D. students have technology expertise. The admissions process will assure that all executive doctorate students are purpose driven.

Executive doctorate students are selected, in part, because of backgrounds filled with experiential learning. These experiences will contribute to their classroom experiences and to the research that will be expressed in their dissertations and future work/publications.

### **Ph.D. in Business contributions to DA's and pathways**

Students in the Ph.D. in Business receive very personal instruction and mentoring as they select courses related to their research and conduct that research. A significant proportion of the students will choose to focus on data and decision sciences.

As a graduate degree, the Ph.D. in Business does not have a direct role in "pathways." It does however, assure that its students exceed the goal of "basic technology proficiency."

### **Ph.D. in Business curricular redesign plans**

The creation of the Executive Doctorate has caused Pamplin to make some changes in the Ph.D. in Business. Experience with the operation of the traditional and executive formats is expected to demonstrate the need for additional changes in the Ph.D. in Business during the next two years. Designing the Executive Doctorate highlighted the need for formal instruction in teaching. We will explore over the next two years methods for incorporating formal instruction in teaching into the Ph.D. in Business.

### **Ph.D. in Business Global Gateways and the Extended Campus**

The Ph.D. in Business is based on Blacksburg. However, the Executive Doctorate has enhanced the engagement between the two instructional programs. Some courses are now taught on Friday afternoon and Saturday and link students and faculty through videoconference technology.

### **Ph.D. in Business Formal and Informal Experiential Learning**

The Ph.D. in Business requires students to conduct original research so experiential learning is guaranteed.

### **Ph.D. in Business Hiring Plans**

The ability to teach in the Ph.D. in Business and to mentor Ph.D. students as they conduct research is an important consideration in hiring all tenure track faculty in Pamplin. As are currently searching for two senior faculty members who we expect to provide substantial leadership to Pamplin's doctoral programs. However, plans to hire in this program are a part of the aggregate plan to hire tenure track faculty rather than a separate allocation from that presented in section 2.1.1.

### **2.2.3. Other instructional programs**

#### **EMBA**

The Executive MBA (EMBA) is administered at the NVC with courses taught at Virginia Tech's building in the Ballston section of Arlington. The program has attracted only a marginal number of well-qualified students for many years. The class entering fall 2016 is projected to be somewhat larger. It is possible that the increased range of related programs in northern Virginia along with a revision of the curriculum will raise the number and quality of the applicant pool. Unless or until this is achieved, no significant additional resources will be allocated to the program. See Appendix 2 EMBA Curriculum Redesign and Implementation for information about plans for the curriculum.

#### **Full-time MBA**

Pamplin suspended enrollment after the fall 2013 class was admitted. The last students in this program graduated in spring 2015.

#### **Ph.D. Hospitality and Tourism Management**

In 2015, admissions to the Ph.D. in HTM were suspended. A new concentration in the Ph.D. in Business was created for HTM. By summer 2016, all students in the Ph.D. in HTM had graduated or transferred to the Ph.D. in Business.

#### **MS Hospitality and Tourism Management**

In 2015, admissions to the MS in HTM were suspended. A new concentration in the MSBA was created for HTM. By summer 2016, all students in the MS in HTM had graduated. The first class of students has enrolled in the MSBA in HTM at the NVC in fall 2016.

#### **BS-Economics**

In May 2016, Pamplin's Undergraduate Studies and Policies Committee recommended that this program be phased out as soon practical. Total enrollment in this major in fall 2016 is 114. If the university approves our recommendation, no new students will be accepted after next year and enrollment will drop to zero by fall 2021. Pamplin is working with the College of Science to allow that college to create a BS-Economics at the same time the Pamplin degree is eliminated.

### **2.3. Research Programs (including doctoral program) Globally competitive and nationally benchmarked research**

This section describes three research areas (business research; business analytics and decision making; and innovation and entrepreneurship) that are important throughout the college and can tie to other parts of the university through destination areas as well as in other ways. While nationally ranked, our research quality and output in these areas does not meet our expectations. As a result of actions taken over the last three years, we believe that we can make significant progress on the metrics we identify below over the next five years with clear goals, a reward system aligned with the goals, and appropriate resources.

#### **Business Research**

Pamplin, like other Business schools, is recognized for the overall impact of its research programs as well as for impact in more specialized areas such as accounting, finance, and marketing. Business research can contribute to all of the destination areas through examination of the commercial application of scientific and technical developments as well as their broader economic and social impact. This section begins with business research because many of the metrics, benchmarks, etc. for more specialized research programs are based on the metrics appropriate for the overall business research activity. These specialized research programs will be developed further as College specific programs.

#### **Productivity metrics for business research**

1. Number of faculty publications in UT-Dallas journals
2. Number of faculty publications accepted by “Pamplin Elite” journals.
3. Citations of research publications
4. Percent of Pamplin tenure-track faculty qualifying for SA status and faculty with superior research accomplishments including continued elite publication success.
5. Full-time Ph.D. publications

#### **Benchmarks for business research**

Pamplin has identified a set of peer and a set of aspirational schools. All are major research (RU/VH) university business schools. The peer schools have many similar characteristics. However, they have achieved greater overall distinction in business research and we need to emulate some of the strategies and tactics that have led to that success. The aspirational schools enjoy greater resources (on average roughly 50%) and have deployed them effectively to bolster their scholarly business research programs. Where practical, we will compare our performance on the metrics above with that of these particular business schools. In addition, we will compare against larger sets such as all US business schools, and all North American Business Schools when published rankings are used.

## University of Texas at Dallas (UT-Dallas) benchmark for business research

The Jindal School of Management at UT-Dallas maintains a web site (<http://jindal.utdallas.edu/the-utd-top-100-business-school-research-rankings/>) that allows comparison of Pamplin's research productivity based on total publications in 24 leading journals. We use the UT-Dallas ranking as a benchmark because it is widely recognized by business schools. UT-Dallas is a convenient, but not entirely representative, benchmark for Pamplin's research productivity. We compare Pamplin with our peer schools and aspirational schools over the most recent five calendar years in the table below. For the years 2011-2015 Pamplin has an overall ranking of 85 (among all North American business schools) with 28 articles published with at least one Pamplin author.<sup>3</sup>

### Business Research UT-D Benchmarks 2011-2015

Peer Schools			Aspirational Schools		
Institution	Rank N. America	Articles	Institution	Rank N. America	Articles
Virginia Tech	85	28	Virginia Tech	85	28
Georgia Tech	24	129	North Carolina	9	188
Michigan State	37	107	Maryland	16	188
Purdue	39	100	Penn State	18	166
Georgia	40	99	Ohio State	19	167
Arizona	44	89	Washington	22	149
Pittsburgh	45	79	Illinois	25	135
Iowa	71	47	Florida	31	96

### Pamplin elite journal benchmark for business research

The Pamplin Elite journal list is highly correlated to the UT-Dallas list but they are not identical. All 24 journals included in the UT-Dallas ranking are universally recognized as high quality. However, the UT-D list does not adequately reflect certain areas of research important in Pamplin given our mix of academic departments and programs. For example, Pamplin's list of "Elite Journals" also includes journals relevant to fields such as Business Law and Hospitality & Tourism Management. It was composed with consideration of various well-known systems for judging the quality of business journals beyond UT-Dallas including popular

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<sup>3</sup> The UT-D rank is calculated using number of papers adjusted for the number of authors on each paper so the rank is not perfectly correlated with number of papers. However, we track number of papers to make the goals and comparisons more transparent to the faculty.

press research rankings, bibliometric measures, British and Australian research journal quality ratings, and acceptance rate. The Pamplin elite journal list remains highly selective with a total of 32 journals.

We compare the number of publications with at least one Virginia Tech author with the number of publications published by each of our peer and aspirational schools. The table below shows this metric. The publications related to hospitality and tourism management are quite distinct with respect to research publication structure so are tabulated separately.

**Business Research  
Pamplin Elite Publication Benchmarks 2011-2015**

<b>Peer Schools</b>		<b>Aspirational Schools</b>	
<b>Institution</b>	<b>Number of Articles</b>	<b>Institution</b>	<b>Number of Articles</b>
<b>Virginia Tech</b>	38	Virginia Tech	38
<b>Georgia Tech</b>	156	Maryland	212
<b>Michigan State</b>	143	North Carolina	202
<b>Georgia</b>	121	Ohio State	183
<b>Arizona</b>	118	Penn State	180
<b>Purdue</b>	109	Washington	168
<b>Pittsburgh</b>	89	Illinois	162
<b>Iowa</b>	72	Florida	118

**HTM Research  
Pamplin Elite Publication Benchmarks 2011-2015**

<b>Peer Schools</b>		<b>Aspirational Schools</b>	
<b>Institution</b>	<b>Number of Articles*</b>	<b>Institution</b>	<b>Number of Articles*</b>
<b>Virginia Tech</b>	37	Virginia Tech	37
<b>Georgia Tech</b>	n/a	Maryland	n/a
<b>Michigan State</b>	9	North Carolina	n/a
<b>Georgia</b>	4	Ohio State	7
<b>Arizona</b>	n/a	Penn State	61
<b>Purdue</b>	84	Washington	n/a
<b>Pittsburgh</b>	n/a	Illinois	11
<b>Iowa</b>	n/a	Florida	23
<b>*Universities without hospitality or tourism programs are shown as n/a.</b>			

### Citation benchmark for business research

We consider the number of citations (average per tenure-track or visiting faculty member 5-year totals from SSCI and Google) as a historical benchmark. As can be seen, the impact of Pamplin faculty research has increased in the most recent 5-year period. We do not currently have the capacity to compare Pamplin faculty on this metric to the faculty from other groups of business schools. However, we will investigate the potential of Academic Analytics to provide some version of this comparison.

**Business Research  
Citation Benchmarks (per Faculty Member)**

<b>Metric Source</b>	<b>2010-14</b>	<b>2011-15</b>	<b>2012-16</b>	<b>2013-17</b>
<b>SSCI</b>	110.2	154.2		
<b>Google</b>	624.9	771.9		

In addition to citations, several members of the faculty have been recognized with major national awards for their research:

- Rajesh Bagchi, 2016 Society for Consumer Psychology Early Career Award
- Rick Perdue, 2015 Travel and Tourism Research Association Lifetime Achievement Award
- Nancy McGehee, 2015 Fulbright
- Zheng Xiang, 2015 International Academy for the Study of Tourism Emerging Scholar
- Chris Zobel, 2014 Fulbright
- Greg Jenkins, 2014 AAA/Deloitte Foundation Wildman Medal Award

### **AACSB SA qualification and superior research accomplishment benchmarks for business research**

AACSB is the premier organization for accrediting business schools in the world. Schools accredited by AACSB must have at least 40% of faculty teaching effort from faculty who maintain the status of “Scholarly Academic” (SA). AACSB doesn’t prescribe a universal definition; rather schools must adopt a definition of SA that is consistent with the mission of the school while also reflecting the broad requirements of the AACSB standards. Appendix 3 AACSB SA Faculty classification provides Pamplin’s definition for SA.

In January 2016, 69% of Pamplin’s faculty met the criteria for SA. Consistent with AACSB reporting, the percentage is based on all faculty who teach courses regardless of employment status. In other parts of this report, we compare the number of SA faculty to only those with research responsibilities. Of these faculty (tenured/tenure-track and visiting), 90.9% met the criteria for SA status.

Beyond SA qualification, we also identify faculty members with highly successful research programs resulting in continuing publication in Pamplin elite journals and achieving national research prominence. In general, faculty members with such superior research accomplishments are provided with a reduced teaching assignment, accelerated promotion, and are prime candidates for faculty fellowships and professorships. Based on research contributions in the 2011-2015 period, 15 Pamplin faculty members have achieved this level of research accomplishment. An additional 5 faculty members are likely to achieve this level of research accomplishment in the next year.

### Pamplin Faculty Research Qualifications

	2011-15	2012-16	2013-17	2014-18
<b>SA Status (overall)</b>	69.3%			
<b>SA Status (research expectation)</b>	90.9%			
<b>Superior Research Achievements</b>	15 (15.2%)			

### Full-time Ph.D. benchmarks for business research

As described earlier, the Ph.D. in Business is a full-time program which requires an expensive subsidy to attract competitive students and significant time from the college's leading researchers. It provides value to the college when its graduates are placed in tenure track positions at recognized research business schools. We track the number of graduates who accept tenure track positions at business schools on Pamplin's "target list." This list is primarily comprised of business schools at Carnegie RU/VH universities. It is attached as Appendix 4 Target Schools for Ph.D. It is not practical to compare Ph.D. in Business students to those from other groups of business schools so we compare to our own placement in prior years.

Research conducted by students in the Ph.D. in Business also benefits Pamplin when it is published in high quality journals. We track the number of publications by full-time Ph.D. in Business students accepted by journals that academic departments qualify for maintenance of SA status. (Research must have been performed and submitted while the author was a student but not necessarily accepted before graduation.)

### Business Ph.D. Program Research and Placement Outcomes

Metric	2010-14	2011-15	2012-16	2013-17
<b>% TT at target</b>	10.34%	10.94%		
	2014	2015	2016	2017



<b># SA Pubs</b>				
<b>Business</b>	8	7		
<b>HTM</b>	n/a	15		

### **Business research contributing to the VT-shaped individual**

Because research in business schools is not typically conducted using a lab model, faculty are required to be expert in both the substantive issues investigated as well as the methods (including analytical tools) involved in their research. In that sense, the faculty are already VT-shaped. Faculty participating in Destination Area research groups will broaden their substantive and potentially their analytical portfolios, strengthening their VT shape. Much of the research that faculty will conduct will require the use of technology and will involve students—especially graduate students. Some of the projects will appeal to our purpose driven students (e.g., using text mining to identify auto safety problems, using forensic accounting analysis to predict or identify fraudulent business practices, etc.).

### **Business research gateway strategies and relations to NCR**

Pamplin maintains its professional graduate programs in the NCR area. As a result, ten tenured/tenure-track faculty members are located at the Northern Virginia Center in Falls Church; all are expected to contribute to the College’s research programs. Pamplin is also building links to major research initiatives in the NCR region including the Hume Center and the Discovery Analytics Center. Students enrolled in the executive doctorate which is based at the NVC will conduct research in collaboration with faculty based in northern Virginia and faculty based in Blacksburg.

### **Opportunities for external funding for business research**

Business school faculty participate in sponsored research but to a much lesser extent than disciplines such as engineering. Public records indicate that Pamplin’s peer business schools averaged \$925,000 in funded research during 2015. Virginia Tech’s Office of Sponsored Programs (OSP) reports that Pamplin’s FY 2015 research expenditures were \$2.7M. This is misleading because a significant portion of this money is due to EMBA tuition and fees.

New sponsored research awards to Pamplin faculty (as PI) in fiscal 2016 totaled \$576,625 and expenditures for 2015 were \$236,560. However, it is unusual for Pamplin faculty be the primary PI on a sponsored research grant. They more often participate as co-PI’s. Figures gathered from the current OSP databases do not allow us to easily obtain grant award data for Co-PI’s.

Nevertheless, Pamplin is more likely to contribute external funds by attracting corporate sponsorship of research and educational programs and its faculty can participate as members of a team working on sponsored research. Chris Zobel is perhaps the most successful of our faculty members in pursuing such opportunities although several others are currently involved in industry-sponsored research

projects. Pamplin's Center for Business Intelligence and Analytics is actively seeking corporate research partnerships involving Pamplin faculty.

Pamplin alumni and companies have made significant philanthropic contributions to the college over the years. Pamplin's endowment is near the middle of our peer business schools. A significant part of the endowment provides support for faculty honorifics (fellowships, professorships and chairs) which are increasingly being used to provide summer funding support for faculty to promote research. We will increase funding for these honorifics in the coming years.

### **Research initiative and faculty hiring plans for business research**

Plans for faculty hiring, including tenure-track hiring is described in section 2.1.1. All tenure-track faculty will contribute to our research programs. Key senior hires are planned.

### **Promoting inclusion and diversity for business research**

Diversity of the faculty is a continuing consideration in hiring. As in many domains, the available pool limits our ability to increase diversity. Pamplin has been successful in increasing the diversity of new faculty hires although retirements and departures have impacted gender diversity.

The College is active in the Ph.D. Project, which focuses on attracting African American, Hispanic, and Native American candidates to business Ph.D. programs. We believe that our new executive doctorate with its concentrated part-time format will be attractive to some of these candidates and allow Pamplin to substantially increase the diversity of the student body in our doctoral programs. Longer term, the visibility of this program will contribute to the College's visibility with new faculty from these groups.

### **Research and curricular innovation**

The most significant impact that business research has had on the curriculum is on Pamplin's doctoral programs. The creation of the executive doctorate will provide a closer connection between corporate needs, data, and expertise and business research. The creation of this new doctorate also had a significant impact on the curriculum and scheduling of the full-time Ph.D. in Business. More about these changes is described in section 2.1.1.

## **Business analytics and decision making research**

Many Pamplin faculty from all academic departments in the college conduct research in the area of Business Analytics and Decision Making. This is one component of our overall business research program. It aligns well with the university's destination area and will provide opportunities for productive collaboration within and beyond the college.

### **Productivity metrics for business analytics and decision making research**

1. Number of faculty publications in UT-Dallas journals primarily related to business analytics and decision making
2. Number of faculty publications accepted by "Pamplin Elite" journals on topics related to business analytics and decision making
3. Percent of Pamplin tenure-track faculty qualifying for SA status through research on business analytics and decision making and faculty with superior research accomplishments in this domain including continued elite publication success
4. Full-time Ph.D. student publications

### **Benchmarks for business analytics and decision making**

Benchmarks for research productivity in the area of business analytics and decision making are based on the benchmarks defined above for business research.

### **UT-Dallas benchmark for business analytics and decision making**

As explained above, we use the UT-Dallas ranking as a benchmark because it is widely recognized within business schools. UT-Dallas allows comparison for a subset of the journals. Research related to business analytics and decision making could be published in any of the UT-Dallas journals. However, the journals most associated with that research area are:

1. The Accounting Review
2. Journal of Accounting and Economics
3. Journal of Accounting Research
4. Journal of Finance
5. Journal of Financial Economics
6. The Review of Financial Studies
7. Information Systems Research
8. INFORMS Journal on Computing
9. MIS Quarterly
10. Journal of Marketing Research
11. Marketing Science

12. Management Science
13. Operations Research
14. Journal of Operations Management
15. Manufacturing and Service Operations Management
16. Production and Operations Management

Based on these journals for the period from 2011 through 2015 Pamplin ranks 101 in North America with 12 articles published. We compare Pamplin with our peer schools and aspirational schools in the table below.

**Business Analytics and Decision Making Research  
UT-D Benchmarks 2011-2015**

Peer Schools			Aspirational Schools		
Institution	Rank N. America	Articles	Institution	Rank N. America	Articles
Virginia Tech	101	12	Virginia Tech	101	12
Georgia Tech	20	103	North Carolina	6	149
Purdue	36	78	Maryland	15	141
Pittsburgh	40	58	Ohio State	17	127
Michigan State	41	68	Washington	23	108
Georgia	44	58	Penn State	25	98
Arizona	45	64	Illinois	26	97
Iowa	64	37	Florida	34	67

**Pamplin elite journal benchmark for business analytics and decision making**

Any of the Pamplin Elite journals may publish research related to business analytics and decision making so it is impractical to compare our performance with other business schools. Instead, we use our historical performance as the benchmark. In the table below, we record the number of publications with at least one Virginia Tech author reporting research on business analytics and decision making.

**Business Analytics and Decision Making Research  
Pamplin Elite Publication Benchmarks and Faculty Participation**

<b>Metric</b>	<b>2011-15</b>	<b>2012-16</b>	<b>2013-17</b>	<b>2014-18</b>
<b># Elite Pubs</b>	20			
	2015	2016	2017	2018
<b># Faculty</b>	57			
<b>% Faculty SA</b>	84.2%			

**Pamplin SA benchmark for business analytics and decision making**

Any of the journals which academic departments use to qualify faculty for SA status may publish research related to business analytics and decision making. Given that this qualification may differ among schools it is impractical to compare against our performance against other business schools. We can, however track the success of Pamplin faculty in maintaining SA classification through scholarly publication. As shown above, 84.2% of the faculty members whose research has focused in the area of business analytics and decision making achieved SA status. Of these faculty, six have achieved a superior level of research accomplishment.

**Ph.D. analytics and decision making research benchmarks**

As previously explained, the Ph.D. in Business is a full-time program which requires an expensive subsidy to attract competitive students and significant time from the college's leading researchers. Research in business analytics is being conducted in all of the Ph.D. concentrations. The BIT option provides one track that is specifically focused on business analytics; those students and their accomplishments are shown in the table below. Other students pursuing analytics research are included in the Ph.D. concentrations linked to the College specific research areas. Business analytics research by Ph.D. students lends value to the college when the Ph.D. graduates are placed in tenure track positions at research-oriented business schools. Specifically, we track the number of graduates who accept tenure track positions at business schools on Pamplin's target list. It is not practical to compare Ph.D. in Business students to those from other groups of business schools so we compare to our own placement in prior years.

Research in business analytics conducted by students in the Ph.D. in Business also benefits Pamplin when it is published in high quality journals. We will track the number of publications by full-time Ph.D. in Business students pursuing the analytics track in the BIT concentration accepted by journals that the department qualifies for maintenance of SA status. Business analytics research by Ph.D. students in other concentrations is tabulated under the appropriate College specific research area. (Research must have been performed and submitted while the author was a student but not necessarily accepted before graduation.)

**Ph.D. in Business with BIT (Business Analytics) Concentration  
Research and Placement Outcomes**

<b>Metric</b>	<b>2011-15</b>	<b>2012-16</b>	<b>2013-17</b>	<b>2014-18</b>
<b># Placed TT at target school</b>	0			
<b>% Placed TT at target school</b>	0			
<b># SA Pubs</b>	2*			
<b>*2015 only</b>				

**Business analytics and decision making research contributing to the VT-shaped individual**

Research in analytics and decision making has a long history in Pamplin. Because research in business schools is not typically conducted using a lab model, faculty are required to be expert in both the substantive issues investigated as well as the methods (including analytical tools) involved in their research. In that sense, the faculty are already VT-shaped. Faculty participating in Destination Area research groups will broaden their substantive and potentially their analytical portfolios, strengthening their VT shape. All of the research that faculty conduct will require the use of technology and much will involve students—especially graduate students. Some of the projects will appeal to our purpose driven students (e.g., using text mining to identify auto safety problems, using forensic accounting analysis to predict or identify fraudulent business practices, etc.).

**Business analytics and decision making gateway strategies and relations to NCR**

Pamplin maintains its professional graduate programs in the NCR area. As a result, ten tenured/tenure-track faculty members are located at the Northern Virginia Center (NVC) in Falls Church; all are expected to contribute to the College’s research programs. Pamplin is also building links to major research initiatives in the NCR region including the Hume Center and the Discovery Analytics Center. Students enrolled in the executive doctorate which is based at the NVC will conduct research in collaboration with faculty based in northern Virginia and faculty based in Blacksburg.

**Opportunities for external funding for business analytics and decision making**

Pamplin faculty members are participating in sponsored research projects in business analytics and decision making unlikely to be PI’s on sponsored research grants that significantly raise Virginia Tech’s total research expenditures. Pamplin is more likely to contribute by attracting corporate sponsorship of research and educational programs and its faculty can be members of a team working on sponsored research.

Corporate funding—Through the Center for Business Intelligence and Analytics, corporate relationships are being developed to engage faculty in research projects. Funding has already been developed from Leidos, Deloitte, and Carilion Clinics to engage in research of this type. Additionally, corporate commitments to support course-related research projects in the new master in Business Analytics have been received from IBM, Altria, HP Enterprise, Carilion Clinics, and Beyer Automotive Group and additional support is being sought. The model is being expanded to other professional graduate programs of the College.

As previously described, Pamplin alumni and companies have made significant philanthropic contributions which support faculty research, particularly endowed faculty honorifics. We will increase funding for these honorifics in the coming years.

### **Research initiative and faculty hiring plans for business analytics and decision making**

Faculty are being recruited to teach and conduct research in business analytics and decision making in all Pamplin academic departments. This will increase Pamplin's capacity for participation in the Data and Decision Making destination area. Faculty with expertise in this research area will replace many of the faculty who leave or retire in the next several years. Many of the additional faculty we plan to add as described in section 2.1.1 will work in this research area.

### **Promoting inclusion and diversity for business analytics and decision making**

As explained above, diversity of the faculty is a continuing consideration in faculty hiring.

### **Research and curricular innovation driven by business analytics and decision making research**

The Center for Business Intelligence and Analytics coordinated the development of the new master in Business Analytics. This program has been described in an earlier section of this report. It is expected to be a feeder program for our full-time Ph.D. for students who wish to pursue research/academic careers in the area of business analytics and decision making. Students will complete a two semester company-sponsored, multidisciplinary-team project that will draw on both business and technology skills—an ideal structure for developing VT-shaped graduates. These projects have been helpful in attracting company funding for related research. If the program is successful on the Blacksburg campus, a part-time version for professional students will be explored in NCR. Such a program could also serve as a feeder to the executive doctorate.

Our research in business analytics and decision making is connected to new or revised graduate programs in the national Capital Region which have been previously described including the new master in Hospitality and Tourism Management with a focus on analytics and the revised Executive MBA program with a course module which recently employed a company-sponsored project on technology patent valuation—linking business and technology.

## **Innovation and entrepreneurship research**

Innovation and entrepreneurship is an area where good research can be scholarly or applied. We expect tenure-track faculty who work in this area to conduct original research with results that create, extend, or analyze concepts and findings about innovation and entrepreneurship. We expect that some of this research will be suitable for publication in Pamplin Elite journals. This type of research is found in journals related to strategic management rather than in journals dedicated to entrepreneurship. Professors of practice are more likely to conduct applied research which may or may not be published in peer reviewed journals. Scholarly and applied research projects can be collaborations between faculty and students.

### **Productivity metrics for innovation and entrepreneurship**

1. Number of faculty publications accepted by “Pamplin Elite” journals on topics related to innovation and entrepreneurship.
2. Number of faculty publications accepted in journals that contribute to SA status on topics related to innovation and entrepreneurship.
3. Funding generated through the Apex Systems Center for Innovation and Entrepreneurship to support faculty and student activities.
4. The number of technology companies founded with assistance from the Apex Systems Center for Innovation and Entrepreneurship.

### **Benchmarks for innovation and entrepreneurship research**

Scholarly benchmarks for research productivity in the area of innovation and entrepreneurship are based on the benchmarks defined above for business research. Additional benchmarks are defined for applied research.

### **Pamplin elite journal benchmark for innovation and entrepreneurship research**

Any of the Pamplin Elite journals may publish research related to innovation and entrepreneurship although none focus specifically on research in this area. The College has recently hired faculty whose research centers on entrepreneurship and we expect elite publications in this area in the near future.

#### **Innovation & Entrepreneurship Pamplin Elite Publication Benchmarks and Faculty Participation**

<b>Metric</b>	<b>2011-15</b>	<b>2012-16</b>	<b>2013-17</b>	<b>2014-18</b>
<b># Elite Pubs</b>	0			
	2015	2016	2017	2018
<b># Faculty</b>	7			
<b>% Faculty SA</b>	92.9%			



### **Pamplin SA journal benchmark for innovation and entrepreneurship**

We also track the success of Pamplin faculty with research programs related to entrepreneurship in maintaining SA classification through scholarly publication. As shown above, 92.9% of the faculty members whose research has focused in the area of entrepreneurship achieved SA status.

### **Funding for innovation and entrepreneurship benchmark**

The Apex Systems Center for Innovation and Entrepreneurship (ASCIE) provides resources to faculty and students to conduct research and engage in other activities. Major sources of funding are Pamplin, donations to the Center from individuals and funding from companies. The Center is developing strong donor relationships to support its activities including faculty research. Donors are attracted initially by the exciting educational programs spearheaded by the Center such as the Innovate Living Learning Community and the Innovation Trek program but in many cases their gifts can be used to support faculty scholarly research. Funding from companies may be philanthropic or directed toward projects. We have not been successful in getting reliable data on external funding for entrepreneurship centers in our peer and aspirational schools so we will track the increase in external funding for ASCIE over time instead.

#### **Funding Benchmark: External Funding for Apex Systems Center for Innovation and Entrepreneurship**

	<b>2016</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>
<b>\$</b>	\$741,607			

### **Technology company creation benchmark**

The Apex Systems Center for Innovation and Entrepreneurship (ASCIE), including programs offered in Innovate, is a resource for company creation. It serves primarily Virginia Tech students. We have not been successful in getting reliable data on company creation for entrepreneurship centers in our peer and aspirational schools so we will track the number created with help from ASCIE over time instead. We are in the process of getting data from Universum which includes the number of startups reported by students in schools across the country and so expect to have a basis for comparison in the future.

#### **Company Creation Benchmark Number Created with Assistance from ASCIE**

	<b>2015</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>
<b>Companies</b>	23			

### **Innovation and entrepreneurship research contributing to the VT-shaped individual**

Only recently have research and other activities related to innovation and entrepreneurship become significant for Pamplin's faculty. The field naturally bridges across disciplines. From a scholarly research perspective, entrepreneurial behavior and the development of entrepreneurial ventures is a rich context in which to examine broader research questions of management, psychology, strategy, game theory, finance, public policy, marketing, etc. Pamplin has a number of faculty whose research interests focus in these areas. From an applied perspective, the innovation and entrepreneurship ecosystem at Virginia Tech provides extraordinary opportunities for applied research related to the commercialization of technology and the formation of businesses to capitalize on new technology. Both of these research foci offer Pamplin faculty and students opportunities for enriched development as VT-shaped individuals. Some of the technologies that applied research might commercialize can also be strongly linked to the purpose driven individual.

### **Innovation and entrepreneurship research gateway for strategies and relations to NCR**

Pamplin maintains its professional graduate programs in the NCR area. As a result, ten tenured/tenure-track faculty members are located at the Northern Virginia Center (NVC) in Falls Church; all are expected to contribute to the College's research programs. We anticipate that some of the students enrolled in the executive doctorate which is based at the NVC will conduct research in related to innovation and entrepreneurship.

### **Opportunities for external funding for innovation and entrepreneurship research**

In the area of entrepreneurship, Pamplin faculty members are unlikely to be PI's on sponsored research grants that significantly raise Virginia Tech's total research expenditures. Pamplin is more likely to contribute by attracting corporate sponsorship of research and educational programs and its faculty can be members of a team working on sponsored research.

**Corporate funding**—Through ASCIE, corporate relationships are being developed to engage faculty and students in research projects. Some funding has already been provided by startup companies. Additionally, corporate support is being sought.

As previously described, Pamplin alumni and companies have made significant philanthropic contributions which support faculty research. Support from alumni and other interested individuals has been especially strong for the activities of ASCIE.

### **Research initiative and faculty hiring plans for innovation and entrepreneurship research**

At this time, we are recruiting one senior faculty member in the area of business strategy with an emphasis in entrepreneurial and early growth firms. We do not have immediate plans to recruit a significant number of tenure-track faculty to conduct research in the area of innovation and entrepreneurship. Additional professors of practice are a better match for our research expectations including applied research.

### **Promoting inclusion and diversity for innovation and entrepreneurship research**

As explained above, diversity of the faculty is a continuing consideration in faculty hiring.

### **Research and curricular innovation driven by innovation and entrepreneurship research**

In the area of entrepreneurship, the College's focus has had a transformative impact on our undergraduate program. The College partnered with the Office of Housing and Residence Life to develop the Innovate Living Learning Community which started with 35 students and in three years has grown to over 80 students and has spawned at least five companies. The students living in the community come from all the undergraduate Colleges. Coupled with the Innovation Trek program that takes groups of students to national centers of innovation and entrepreneurship including Silicon Valley, Boston, New York, and Austin, the Apex Center for Innovation and Entrepreneurship is providing an exciting array of enriching experiences for our undergraduate students. At the same time, the Center is coordinating the redesign and strengthening of the undergraduate minor in entrepreneurship.

### **2.3.2. Major college specific research programs**

This section describes research programs that are largely associated with one of Pamplin's academic departments. In some cases, a department has more than one program listed in this section. These programs are part of the programs described in section 2.2.1 but are recognized as distinct by business school faculty and the public.

#### **Accounting research**

Accounting research is conducted primarily by faculty in Pamplin's ACIS Department. While accounting research should be recognized as a college-level research program, much of accounting research can also be classified as "business research" and "research in business analytics and decision making." It is also important to note that some faculty in the Accounting and Information Systems Department focus on information systems (IS). This IS research is accurately described as business analytics and decision making research rather than accounting research. "Accounting" research aligns well with the university's destination areas and provides opportunities for productive collaboration within and beyond the college.

#### **Productivity metrics for accounting research**

1. Number of faculty publications in UT-Dallas journals primarily related to accounting.
2. Number of faculty publications accepted by "Pamplin Elite" journals on topics related to accounting.
3. Proportion of ACIS faculty who are classified as Scholarly Academic (SA) for AACSB accreditation purposes and faculty with superior research accomplishments in this domain including continued elite publication success.
4. Placement of graduates from the full-time Ph.D. in Business with an option in accounting.
5. Publications by students in the full-time Ph.D. in Business with an option in accounting.

#### **Benchmarks for accounting research**

Benchmarks for research productivity in accounting are based on the benchmarks defined in section 2.2.1 for business research. In addition, accounting research

productivity for programs around the world is tracked by the more specialized BYU rankings. The most recent BYU Global Accounting Rank (Overall) 2010-2015<sup>4</sup>: 79.

### UT-Dallas benchmark for accounting research

As previously explained, we use the UT-Dallas ranking as a benchmark because it is widely recognized within business schools. UT-Dallas allows comparison for a subset of the journals. Research related to accounting is most associated with:

1. The Accounting Review
2. Journal of Accounting and Economics
3. Journal of Accounting Research

Based on these journals for the period from 2011 through 2015 Pamplin ranks 101 in North America 1 article published. We compare Pamplin with our peer schools and aspirational schools in the tables below.

### Accounting Research UT-D Benchmarks 2011-2015

Peer Schools			Aspirational Schools		
Institution	Rank N. America	Articles	Institution	Rank N. America	Articles
Virginia Tech	114	1	Virginia Tech	114	1
Pittsburgh	20	17	Illinois	2	36
Arizona	22	22	Ohio State	10	25
Georgia	25	17	North Carolina	13	20
Purdue	37	12	Florida	17	18
Michigan State	43	11	Penn State	23	15
Iowa	50	11	Washington	26	18
Georgia Tech	69	5	Maryland	78	4

### Pamplin elite journal benchmark for accounting research

Journals that publish accounting research are well defined. Five of the Pamplin Elite journals publish accounting research.

1. Accounting, Organizations and Society

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<sup>4</sup> Based on publications in Accounting, Organizations, and Society; Contemporary Accounting Research; Journal of Accounting & Economics; Journal of Accounting Research; Review of Accounting Studies; The Accounting Review

2. Contemporary Accounting Research
3. Journal of Accounting and Economics
4. Journal of Accounting Research
5. The Accounting Review

Consistent with other college research programs, we use historical performance as the benchmark. The table below shows the number of publications with at least one Virginia Tech author in the journals listed above.

**Accounting Research  
Pamplin Elite Publication Benchmarks and Faculty Participation**

<b>Metric</b>	<b>2011-15</b>	<b>2012-16</b>	<b>2013-17</b>	<b>2014-18</b>
<b># Elite Pubs</b>	5			
	2015	2016	2017	2018
<b># Faculty</b>	17			
<b>% Faculty SA</b>	100%			

**AACSB SA qualification benchmark for accounting research**

AACSB is the premiere organization for accrediting business schools in the world. Schools accredited by AACSB must have at least 40% of faculty teaching effort from faculty who maintain the status of “Scholarly Academic” or SA. Schools must adopt a definition of SA that is consistent with the mission of the school while also reflecting the broad requirements of the AACSB standards. Appendix 3 provides Pamplin’s definition for SA and other AACSB classifications.

In January 2016, 100% of Pamplin’s ACIS faculty with an Accounting focus met the criteria for SA. (ACIS also includes faculty with research focus in information systems.) This percentage is based on all faculty who have research expectations in their portfolio of activities (tenure-track and visiting faculty). Of these faculty, one has achieved a superior level of research accomplishment. One additional faculty member is likely to reach this level in the next year.

**Ph.D. accounting research benchmarks**

As previously explained, the Ph.D. in Business is a full-time program which requires an expensive subsidy to attract competitive students and significant time from the college’s leading researchers. The accounting option provides value to the college when its graduates are placed in tenure track positions at research-oriented business schools. Specifically, we track the number of graduates who accept tenure track positions at business schools on Pamplin’s “target list” which is attached as Appendix 4. It is not practical to compare Ph.D. in Business students to those from other groups of business schools so we compare to our own placement in prior years.

Research conducted by students in the Ph.D. in Business with an option in accounting also benefit Pamplin when they are published in high quality journals. We will track the number of publications by full-time Ph.D. in Business students with an accounting option accepted by journals that the department qualifies for maintenance of SA status. (Research must have been performed and submitted while the author was a student but not necessarily accepted before graduation.)

**Ph.D. in Business with Accounting Option  
Research and Placement Outcomes**

<b>Metric</b>	<b>2011-15</b>	<b>2012-16</b>	<b>2013-17</b>	<b>2014-18</b>
<b># Placed TT at target school</b>	4			
<b>% Placed TT at target school</b>	20%			
<b># SA Pubs</b>	35			

**Contributing to the VT-shaped individual by accounting research**

Research in accounting has a long history in Pamplin. Because research in business schools is not typically conducted using a lab model, faculty are required to be expert in both the substantive issues investigated as well as the methods (including analytical tools) involved in their research. In that sense, the faculty are already VT-shaped. Faculty participating in Destination Area research groups will broaden their substantive and potentially their analytical portfolios, strengthening their VT shape.

**Gateway strategies and relations to NCR for accounting research**

Pamplin maintains its professional graduate programs in the NCR area. As a result, ten tenured/tenure-track faculty members are located at the Northern Virginia Center (NCR) in Falls Church. One of the faculty at the NCR contributes directly to accounting research. The new executive doctorate in the NCR will provide additional opportunities for accounting research.

**Opportunities for external funding for accounting research**

Alumni and the “big four” accounting firms have provided substantial philanthropic resources to the ACIS department and are expected to continue to do so. The greatest portion of the funding from these sources has been used to create professorships to support accounting research.

**Research initiative and faculty hiring plans for accounting research**

At present, the ACIS department has 10 assistant professors with an accounting research focus and only 3 full professors in accounting. This creates an imbalance between the junior faculty who must focus their efforts primarily on publishing their research in elite journals, and the senior faculty who must handle the bulk of the necessary service work while at the same time attempting to mentor the junior

faculty and Ph.D. students. In addition, the senior faculty must work to continue their own research programs. Because of this imbalance, the department has a great need to recruit additional senior accounting faculty to help mentor junior faculty and doctoral students. We are currently working to attract a world-class senior scholar who would like to move to Blacksburg and who would contribute very positively to the culture of the department as well as to its research portfolio. In addition to this one world-class senior scholar, ACIS would greatly benefit from additional experienced hires who could contribute to mentoring junior faculty and Ph.D. students, as well as continue their own successful research programs.

### **Promoting inclusion and diversity among accounting research faculty**

The ACIS Department embraces the concepts of inclusion and diversity, and wishes to attract highly qualified under-represented groups. In the most recent recruiting cycle, the ACIS department was successful in hiring the first black female tenure-track faculty member in approximately ten years. The Department continues to actively search for qualified members of under-represented groups.

### **Research and curricular innovation driven by accounting research**

Our research in accounting is connected to the new executive doctorate National Capital Region and the revisions to the full-time Ph.D. in Blacksburg which have been previously described.



## **Finance research**

Finance research is conducted primarily by faculty in Pamplin's FIN Department. While finance research should be recognized as a college-level research program, much of it is also appropriately classified as "business research" and research in business analytics and decision making.

### **Productivity metrics for finance research**

1. Number of faculty publications accepted by UT-Dallas journals primarily related to finance.
2. Number of faculty publications accepted by "Pamplin Elite" journals on topics related to finance.
3. Proportion of FIN faculty who are classified as Scholarly Academic (SA) for AACSB accreditation purposes and faculty with superior research accomplishments in this domain including continued elite publication success.
4. Placement of graduates from the full-time Ph.D. in Business with an option in finance.
5. Publications by students in the full-time Ph.D. in Business with an option in finance.

### **Benchmarks for finance research**

Benchmarks for research productivity in finance are based on the benchmarks defined in section 2.2.1 for business research.

### **UT-Dallas benchmark for finance research**

As previously explained, we use the UT-Dallas ranking as a benchmark because it is widely recognized within business schools. UT-Dallas allows comparison for a subset of the journals. Research related to finance is most associated with:

1. Journal of Finance
2. Journal of Financial Economics
3. The Review of Financial Studies

Based on these journals for the period from 2011 through 2015 Pamplin ranks 75 in North America with 5 articles published. Note however, that current finance faculty members had 9 articles accepted by UT-Dallas finance journals during this time period. The difference is due to some articles being authored by faculty who recently joined Pamplin and have other affiliations listed on their publications. In addition, some accepted articles will be published in 2016. It is also notable that faculty in the finance department publish research in UT-Dallas journals that are not specific to finance such as the Accounting Review, Journal of Accounting Research, Journal of Accounting and Economics and the Journal of International Business. During 2011-2015 finance faculty have published 5 additional UT-Dallas articles. However, no faculty from departments other than finance publish in the

above three journals. The finance faculty contribute more to the research reputation of Pamplin than is captured in the publicized UT-Dallas finance journal statistics.

We compare Pamplin with our peer schools and aspirational schools in the tables below based exclusively on the three finance specific UT-Dallas journals as recorded by the UT-Dallas web site.

**Finance Research  
UT-D Benchmarks 2011-2015**

Peer Schools			Aspirational Schools		
Institution	Rank N. America	Articles	Institution	Rank N. America	Articles
Virginia Tech	75	5	Virginia Tech	75	5
Purdue	34	18	North Carolina	4	51
Georgia Tech	35	16	Washington	10	40
Iowa	43	14	Ohio State	11	45
Michigan State	44	16	Maryland	16	33
Georgia	45	14	Illinois	26	24
Arizona	65	8	Florida	39	12
Pittsburgh	68	7	Penn State	48	10

**Pamplin elite journal benchmark for finance research**

Four of the Pamplin Elite journals are likely to publish finance research.

1. Journal of Finance
2. Journal of Financial and Quantitative Analysis
3. Journal of Financial Economics
4. The Review of Financial Studies

For consistency with other college research programs, we use our historical performance as the benchmark. In the table below, we record the number of publications with at least one Virginia Tech author in the journals listed above.

**Finance Research  
Pamplin Elite Publication Benchmarks and Faculty Participation**

<b>Metric</b>	<b>2011-15</b>	<b>2012-16</b>	<b>2013-17</b>	<b>2014-18</b>
<b># Elite Pubs</b>	11			
	2015	2016	2017	2018
<b># Faculty</b>	17			
<b>% Faculty SA</b>	70.6%			

**AACSB SA qualification benchmark for finance research**

AACSB is the premiere organization for accrediting business schools in the world. Schools accredited by AACSB must have at least 40% of faculty teaching effort from faculty who maintain the status of “Scholarly Academic” or SA. Schools must adopt a definition of SA that is consistent with the mission of the school while also reflecting the broad requirements of the AACSB standards. Appendix 3 provides Pamplin’s definition for SA classification.

In January 2016, 71% of Pamplin’s FIN faculty met the criteria for SA. (Note that this includes faculty who have a primary research area outside of mainstream finance e.g., business law.) This percentage is based on all faculty who have research expectations in their portfolio of activities (tenure-track and visiting faculty). Of these faculty, five have achieved a superior level of research accomplishment.

**Ph.D. finance research benchmarks**

As previously explained, the Ph.D. in Business is a full-time program which requires an expensive subsidy to attract competitive students and significant time from the college’s leading researchers. The finance option provides value to the college when its graduates are placed in tenure track positions at research-oriented business schools. Specifically, we track the number of graduates who accept tenure track positions at business schools on Pamplin’s “target list” which is attached as Appendix 4. It is not practical to compare Ph.D. in Business students to those from other groups of business schools so we compare to our own placement in prior years.

Research conducted by students in the Ph.D. in Business with an option in finance also benefit Pamplin when they are published in high quality journals. We will track the number of publications by full-time Ph.D. in Business students with the finance option accepted by journals that the department qualifies for maintenance of SA status. (Research must have been performed and submitted while the author was a student but not necessarily accepted before graduation.)

**Ph.D. in Business with Finance Option  
Research and Placement Outcomes**

<b>Metric</b>	<b>2011-15</b>	<b>2012-16</b>	<b>2013-17</b>	<b>2014-18</b>
<b># Placed TT at target school</b>	1			
<b>% Placed TT at target school</b>	11%			
<b># SA Pubs</b>	0			

**Contributing to the VT-shaped individual by finance research**

Research in finance has a long history in Pamplin. Because research in business schools is not typically conducted using a lab model, faculty are required to be expert in both the substantive issues investigated as well as the methods (including analytical tools) involved in their research. In that sense, the faculty are already VT-shaped. Faculty participating in Destination Area research groups will broaden their substantive and potentially their analytical portfolios, strengthening their VT shape.

**Gateway strategies and relations to NCR for finance research**

Pamplin maintains its professional graduate programs in the NCR area. As a result, ten tenured/tenure-track faculty members are located at the Northern Virginia Center (NCR) in Falls Church.

**Opportunities for external funding for finance research**

Alumni and firms in various parts of the finance industry have provided substantial philanthropic resources to support finance programs in Pamplin including professorships to support finance research.

**Research initiative and faculty hiring plans for finance research**

The finance department is working to recruit and retain tenure-track faculty who can contribute to high quality research. The department hired two seasoned Assistant Professors last year and intends to again recruit two or three seasoned faculty during the current year. The recruiting is focused on faculty who have already demonstrated an ability to conduct high quality research but are at lower-level schools and would like an opportunity to join Virginia Tech. Alternatively, our candidates may be at higher-level schools where their research productivity falls short of that institutions expectations, and the candidates would like to reset their tenure clock at Virginia Tech. The process of identifying potential candidates is very time consuming but the results last year were rewarding.

**Promoting inclusion and diversity among finance research faculty**

As has been described above, diversity is a continuing consideration in recruiting faculty.

### **Research and curricular innovation driven by finance research**

Our research in finance is connected to the new executive doctorate National Capital Region and the revisions to the full-time Ph.D. in Blacksburg which have been described previously.

## **Hospitality and tourism management research**

Hospitality and tourism management research is conducted primarily by faculty in Pamplin's HTM Department. While hospitality and tourism research should be recognized as a college-level research program, much of it is also appropriately classified as "business research" and research in business analytics and decision making.

### **Productivity metrics for HTM research**

1. Number of publications in UT-Dallas journals authored by faculty in the HTM department.
2. Number of faculty publications accepted by "Pamplin Elite" journals on topics related to hospitality and tourism management.
3. Proportion of HTM faculty who are classified as Scholarly Academic (SA) for AACSB Accreditation purposes and faculty with superior research accomplishments in this domain including continued elite publication success.
4. Number of faculty publications accepted in journals that contribute to SA status for Pamplin departments other than hospitality and tourism management.
5. Placement of graduates from the full-time Ph.D. in Business with an option in HTM.
6. Publications by students in the full-time Ph.D. in Business with an option in HTM.

### **Benchmarks for hospitality and tourism management research**

Benchmarks for research productivity in hospitality and tourism management are based on the benchmarks defined in section 2.2.1 for business research. HTM faculty conduct research that is specialized to the discipline and also that fits into Pamplin's globally competitive and nationally benchmarked research and also into other college specific research programs. Therefore, the benchmarks for HTM research differ slightly from that of other program listed in this section.

### **UT-Dallas Benchmark for hospitality and tourism management research**

Research from HTM faculty can be relevant to any of the journals used in the UT-Dallas ranking. However, few business schools include a department of hospitality and tourism management. Not surprisingly, none of the journals used by UT-Dallas is specifically designed as an outlet for hospitality and tourism management research. In judging HTM's performance on this benchmark, we consider the number of publications by HTM faculty in any of the UT-Dallas journals. Since no peer programs exist, we use our historical performance as the benchmark. In the table below, we record the number of publications with at least one Virginia Tech author in any UT-Dallas journal with an HTM faculty author.

**HTM Faculty Research**  
**UT-D and Pamplin Elite Publication Benchmarks and Faculty Participation**

Metric	2011-15	2012-16	2013-17	2014-18
# UT-D Pubs	0			
# Elite Pubs	43			
	2015	2016	2017	2018
# Faculty	11			
% Faculty SA	100%			

**Pamplin elite journal benchmark for hospitality and tourism management research**

Four of the Pamplin Elite journals focus specifically on hospitality and tourism management research.

1. Annals of Tourism Research
2. International Journal of Hospitality Management
3. Journal of Hospitality and Tourism Research
4. Tourism Management

For consistency with other college research programs, we use our historical performance as the benchmark. As shown above, the Pamplin HTM faculty published 43 articles in these journals during 2011-15.

**AACSB SA qualification benchmark for hospitality and tourism management research**

AACSB is the premiere organization for accrediting business schools in the world. Schools accredited by AACSB must have at least 40% of faculty teaching effort from faculty who maintain the status of “Scholarly Academic” or SA. Schools must adopt a definition of SA that is consistent with the mission of the school while also reflecting the broad requirements of the AACSB standards. Appendix 3 provides Pamplin’s definition for SA classification.

In January 2016, 100% of Pamplin’s HTM faculty met the criteria for SA. This percentage is based on all faculty who have research expectations in their portfolio of activities (tenure-track and visiting faculty). Of these faculty, four have achieved a superior level of research accomplishment.

HTM faculty publish quality research in journals dedicated to the field as well as other quality business journals. HTM dedicated journals enhance the reputation of the department primarily within the field. More general business publications enhance the reputation of the college. Therefore, we track the number of publications by HTM faculty that are in journals used by other departments for the maintenance of SA status.

### HTM Faculty Publications in SA Journals outside of HTM

Metric	2011-15	2012-16	2013-17	2014-18
Pubs	4			

### Ph.D. HTM research benchmarks

As previously explained, the Ph.D. in Business is a full-time program which requires an expensive subsidy to attract competitive students and significant time from the college's leading researchers. The hospitality and tourism management option provides value to the college when its graduates are placed in tenure track positions at research-oriented business schools. Specifically, we track the number of graduates who accept tenure track positions at business schools on Pamplin's "target list" which is attached as Appendix 4. It is not practical to compare Ph.D. in Business students to those from other groups of business schools so we compare to our own placement in prior years.

Research conducted by students in the Ph.D. in Business with an option in hospitality and tourism management also benefit Pamplin when they are published in high quality journals. We will track the number of publications by full-time Ph.D. in Business students with the hospitality and tourism management option accepted by journals that the department qualifies for maintenance of SA status. (Research must have been performed and submitted while the author was a student but not necessarily accepted before graduation.)

### Ph.D. in Business with HTM Option Research and Placement Outcomes

Metric	2011-15	2012-16	2013-17	2014-18
# Placed TT at target school	1			
% Placed TT at target school	6%			
# SA Pubs	15*			
*2015 only				

### Contributing to the VT-shaped individual by HTM research

Research in hospitality and tourism management has been part of Pamplin for over 10 years. Because research in business schools is not typically conducted using a lab model, faculty are required to be expert in both the substantive issues investigated as well as the methods (including analytical tools) involved in their research. In that sense, the faculty are already VT-shaped. Faculty participating in Destination Area research groups will broaden their substantive and potentially their analytical portfolios, strengthening their VT shape. The Ph.D. in Business with a concentration in HTM is also, by its nature, supportive of the VT-shaped student-researcher concept. The HTM Ph.D. student lab space is designed to be conducive



of informal communal learning, resulting in many impromptu discussions about current research and opportunities to hash out problems together. Our relationship with industry partners also provides opportunities for guided experiential learning. For example, at each HTM Advisory Board meeting we set aside time for Ph.D. students to interact with board members in a session we call “Industry Insights.” Board members provide input about current issues and pressing research needs in order to stimulate research ideas for Ph.D. students. This of course contributes to their disciplinary depth and provides resources for faculty-graduate student research.

### **Gateway strategies and relations to NCR for HTM research**

Pamplin maintains its professional graduate programs in the NCR area. As a result, ten tenured/tenure-track faculty members are located at the Northern Virginia Center (NCR) in Falls Church. One is a member of the HTM department. We are also engaging adjunct faculty who have extensive industry experience. The Blacksburg campus faculty have benefited from these developing relationships, engaging in early discussions about possible research projects that include industry partners.

### **Opportunities for external funding for HTM research**

Alumni and firms in various parts of the HTM industry have provided substantial philanthropic resources to support HTM programs in Pamplin including professorships to support hospitality and tourism management research. The increased presence in the NCR due to the MSBA with a concentration in HTM started in fall 2016 is expected to increase these opportunities. In particular, being within a stone’s throw of both the Hilton and Marriott international headquarters is a great opportunity.

### **Research initiative and faculty hiring plans for HTM research**

The hospitality and tourism management department is working to recruit and retain tenure-track faculty who can contribute to high quality research. It is currently recruiting for one Full Professor to take on the Marriott Professorship in revenue Management or HTM Finance as well as a more junior position of assistant or associate professor. For the second position we are taking a “best athlete” approach, seeking out the best and brightest researchers in the field of HTM with an eye toward the Destination area of Data Analytics and Decision Sciences in its broadest sense. Efforts to fill this position include reaching out to exceptionally qualified candidates currently teaching in our peer and aspirant schools. In particular, we are recruiting heavily from Penn State and Cornell. We have been able to take advantage of Charlie Phlegar’s recent experience at Cornell. We are also looking to develop more long-term relationships with young Ph.D.’s and faculty with experience in diversity and inclusion efforts in our field by first identifying and then inviting these young faculty to campus as guest speakers and consultants.

### **Promoting inclusion and diversity among HTM research faculty**

As has been described above, diversity is a continuing consideration in recruiting faculty. The HTM industry in particular has lead the way with research-based recognition that inclusion makes good business sense. Hiring faculty that understand this will be critical in the coming years. As part of the upcoming hiring process, we are engaged in exercises that identify unconscious bias in all of us and looking for ways to counter-balance these inevitably human tendencies.

### **Research and curricular innovation driven by HTM research**

Our research in HTM is connected to the new executive doctorate National Capital Region and the revisions to the full-time Ph.D. in Blacksburg which have been described previously. We are especially interested in further cultivating existing expertise with our faculty who are involved in the Destination Area of Data Analytics and Decisions Sciences. Two of the four new HTM Ph.D. students have interests and existing expertise in this area.

## **Marketing and consumer behavior research**

Marketing and consumer behavior research is conducted primarily by faculty in Pamplin's MKTG Department. While marketing and consumer behavior research should be recognized as a college-level program, much of it is also appropriately classified as "business research" and research in business analytics and decision making.

### **Productivity metrics for marketing and consumer behavior research**

1. Number of faculty publications in UT-Dallas journals primarily related to marketing.
2. Number of faculty publications accepted by "Pamplin Elite" journals on topics related to marketing.
3. Proportion of MKTG faculty who are classified as Scholarly Academic (SA) for AACSB Accreditation purposes and faculty with superior research accomplishments in this domain including continued elite publication success.
4. Placement of graduates from the full-time Ph.D. in Business with an option in marketing.
5. Publications by students in the full-time Ph.D. in Business with an option in marketing.

### **Benchmarks for marketing and consumer behavior research**

Benchmarks for research productivity in marketing and consumer behavior are based on the benchmarks defined in section 2.2.1 for business research.

### **UT-Dallas Benchmark for marketing and consumer behavior research**

As previously explained, we use the UT-Dallas ranking as a benchmark because it is widely recognized within business schools. UT-Dallas allows comparison for a subset of the journals. Research related to marketing and consumer behavior is most associated with:

1. Journal of Consumer Research
2. Journal of Marketing
3. Journal of Marketing Research
4. Marketing Science

Based on these journals for the period from 2011 through 2015 Pamplin ranks 43 in North America with 12 articles. We compare Pamplin with our peer schools and aspirational schools in the tables below.

### **Marketing and Consumer Behavior Research UT-D Benchmarks 2011-2015**

<b>Peer Schools</b>	<b>Aspirational Schools</b>
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Institution	Rank N. America	Articles	Institution	Rank N. America	Articles
Virginia Tech	43	12	Virginia Tech	43	12
Pittsburgh	19	33	Maryland	5	34
Georgia	39	16	Florida	11	35
Arizona	40	15	Penn State	12	36
Georgia Tech	51	13	Washington	30	24
Michigan State	65	9	North Carolina	31	24
Iowa	77	6	Ohio State	37	19
Purdue	118	3	Illinois	77	4

**Pamplin elite journal benchmark for marketing and consumer behavior research**

Four of the Pamplin Elite journals are likely to publish marketing and consumer behavior research.

1. Journal of Consumer Research
2. Journal of Marketing
3. Journal of Marketing Research
4. Marketing Science

For consistency with other college research programs, we use our historical performance as the benchmark. In the table below, we record the number of publications with at least one Virginia Tech author in the journals listed above.

**Marketing and Consumer Behavior Research  
Pamplin Elite Publication Benchmarks and Faculty Participation**

Metric	2011-15	2012-16	2013-17	2014-18
# Elite Pubs	12			
	2015	2016	2017	2018
# Faculty	12			
% Faculty SA	100%			

**AACSB SA qualification benchmark for marketing and consumer behavior research**

AACSB is the premiere organization for accrediting business schools in the world. Schools accredited by AACSB must have at least 40% of faculty teaching effort from faculty who maintain the status of “Scholarly Academic” or SA. Schools must adopt a definition of SA that is consistent with the mission of the school while also

reflecting the broad requirements of the AACSB standards. Appendix 3 AACSB SA Faculty classification provides Pamplin’s definition for SA classification.

In January 2016, 100% of Pamplin’s MKTG faculty met the criteria for SA. This percentage is based on all faculty who have research expectations in their portfolio of activities (tenure-track and visiting faculty). Of these faculty, two have achieved a superior level of research accomplishment. Three additional recently hired faculty are likely to achieve this level in the next year.

**Ph.D. marketing and consumer behavior research benchmarks**

As previously explained, the Ph.D. in Business is a full-time program which requires an expensive subsidy to attract competitive students and significant time from the college’s leading researchers. The marketing option provides value to the college when its graduates are placed in tenure track positions at research-oriented business schools. Specifically, we track the number of graduates who accept tenure track positions at business schools on Pamplin’s “target list” which is attached as Appendix 4. It is not practical to compare Ph.D. in Business students to those from other groups of business schools so we compare to our own placement in prior years.

Research conducted by students in the Ph.D. in Business with an option in marketing also benefit Pamplin when they are published in high quality journals. We will track the number of publications by full-time Ph.D. in Business students with the marketing option accepted by journals that the department qualifies for maintenance of SA status. (Research must have been performed and submitted while the author was a student but not necessarily accepted before graduation.) The Marketing faculty have been notably successful working with Ph.D. students on published research. Two articles co-authored with Ph.D. students have appeared in elite UT-D journals.

**Ph.D. in Business with Marketing Option  
Research and Placement Outcomes**

<b>Metric</b>	<b>2011-15</b>	<b>2012-16</b>	<b>2013-17</b>	<b>2014-18</b>
<b># Placed TT at target school</b>	1			
<b>% Placed TT at target school</b>	11%			
<b># SA Pubs</b>	3*			
<b>*2 UT-D journal publications</b>				

**Contributing to the VT-shaped individual by marketing and consumer research**

Research in marketing and consumer behavior has a long history in Pamplin. Because research in business schools is not typically conducted using a lab model, faculty are required to be expert in both the substantive issues investigated as well

as the methods (including analytical tools) involved in their research. In that sense, the faculty are already VT-shaped. Faculty participating in Destination Area research groups will broaden their substantive and potentially their analytical portfolios, strengthening their VT shape.

### **Gateway strategies and relations to NCR for marketing and consumer behavior research**

Pamplin maintains its professional graduate programs in the NCR area. As a result, ten tenured/tenure-track faculty members are located at the Northern Virginia Center (NCR) in Falls Church. After several years with no representation from marketing at the NVC, a senior scholar in that discipline was hired in 2015.

### **Opportunities for external funding for marketing and consumer behavior research**

Alumni and firms in various parts of industry have provided substantial philanthropic resources to support marketing programs in Pamplin including professorships to support marketing and consumer behavior research.

### **Research initiative and faculty hiring plans for marketing and consumer behavior research**

The marketing department is working to recruit and retain tenure-track faculty who can contribute to high quality research. The department will be recruiting for an advanced assistant or associate professor with demonstrated research expertise in data analytics. Successful recruiting will broaden and build on the department's research focus, as well as strengthen the college's focus on data analytics.

### **Promoting inclusion and diversity among marketing and consumer behavior research faculty**

As has been described above, diversity is a continuing consideration in recruiting faculty.

### **Research and curricular innovation driven by marketing and consumer behavior research**

Our research in marketing and consumer behavior is connected to the new executive doctorate National Capital Region and the revisions to the full-time Ph.D. in Blacksburg which have been described previously. Six of the newly enrolled executive doctorate students have elected the marketing option.

## Management research areas

Two major College-specific research programs are conducted primarily in the Department of Management (MGT):

- Organizational behavior and human resources management
- Business strategy

While both of these domains should be recognized as college-level research programs, much of the work is also appropriately classified as “business research” and some can be classified as research in business analytics and decision making. Benchmarking these programs is complicated by the fact that business schools vary on how these areas are structured. In some schools, the two reside in a single department as is the case in Pamplin. Other schools have separate Strategy groups or departments. Moreover, the major journals in Management in many cases publish work related to both of these domains. Thus, for one key productivity metric—UT-Dallas productivity—the two domains are combined. The two are separated with respect to other productivity metrics.

## UT-Dallas Benchmark for OB&HR and Business Strategy research

As previously explained, we use the UT-Dallas ranking as a benchmark because it is widely recognized within business schools. UT-Dallas allows comparison for a subset of the journals. Research related to OB&HR and Business Strategy are most associated with:

1. Academy of Management Journal
2. Academy of Management Review
3. Administrative Science Quarterly
4. Organization Science
5. Strategic Management Journal

### OB&HR and Business Strategy Research UT-D Benchmarks 2011-2015

Peer Schools			Aspirational Schools		
Institution	Rank N. America	Articles	Institution	Rank N. America	Articles
Virginia Tech	109	5	Virginia Tech	109	5
Michigan State	12	32	Penn State	5	51
Georgia	25	28	Maryland	13	37
Purdue	34	21	North Carolina	14	29
Georgia Tech	37	18	Washington	18	29
Arizona	56	14	Illinois	20	30

<b>Iowa</b>	95	6	Ohio State	28	28
<b>Pittsburgh</b>	159	1	Florida	82	7

## **Organizational Behavior and Human Resources Management (OB&HR)**

### **Productivity metrics for OB&HR research**

1. Number of faculty publications in UT-Dallas journals primarily related to OB&HR.
2. Number of faculty publications accepted by “Pamplin Elite” journals on topics related to OB&HR.
3. Proportion of MGT faculty who are classified as Scholarly Academic (SA) for AACSB accreditation purposes and faculty with superior research accomplishments in this domain including continued elite publication success.
4. Placement of graduates from the full-time Ph.D. in Business with an option in MGT and research focused on OB&HR.
5. Publications by students in the full-time Ph.D. in Business with an option in MGT and research focused on OB&HR.

### **Benchmarks for OB&HR research**

Benchmarks for research productivity in OB&HR are based on the benchmarks defined in section 2.2.1 for business research.

### **UT-Dallas Benchmark for OB&HR research**

(See above)

### **Pamplin elite journal benchmark for OB&HR research**

Five of the Pamplin Elite journals are likely to publish organizational behavior and human resource management research.

1. Academy of Management Journal
2. Academy of Management Review
3. Administrative Science Quarterly
4. Organizational Science
5. Journal of Applied Psychology

The first four of these elite journals are included in the UT-Dallas list. For consistency with other college research programs, we use our historical performance as the benchmark. In the table below, we record the number of publications with at least one Virginia Tech author in the journals listed above.



**OB&HR Research  
Pamplin Elite Publication Benchmarks and Faculty Participation**

<b>Metric</b>	<b>2011-15</b>	<b>2012-16</b>	<b>2013-17</b>	<b>2014-18</b>
<b># Elite Pubs</b>	10			
	2015	2016	2017	2018
<b># Faculty</b>	7			
<b>% Faculty SA</b>	100%			

**AACSB SA qualification benchmark for OB&HR research**

AACSB is the premiere organization for accrediting business schools in the world. Schools accredited by AACSB must have at least 40% of faculty teaching effort from faculty who maintain the status of “Scholarly Academic” or SA. Schools must adopt a definition of SA that is consistent with the mission of the school while also reflecting the broad requirements of the AACSB standards. Appendix AACSB SA Faculty classification provides Pamplin’s definition for SA classification.

In January 2016, 100% of Pamplin’s OB&HR faculty met the criteria for SA. This percentage is based on all faculty who have research expectations in their portfolio of activities (tenure-track and visiting faculty). Of these faculty, two have achieved a superior level of research accomplishment. One additional recently hired faculty member is likely to achieve this level in the next year.

**Ph.D. OB&HR research benchmarks**

As previously explained, the Ph.D. in Business is a full-time program which requires an expensive subsidy to attract competitive students and significant time from the college’s leading researchers. The management option provides value to the college when its graduates are placed in tenure track positions at research-oriented business schools. Specifically, we track the number of graduates with a management option and research focused on OB&HR who accept tenure track positions at business schools on Pamplin’s “target list” which is attached as Appendix 4. It is not practical to compare Ph.D. in Business students to those from other groups of business schools so we compare to our own placement in prior years.

Research conducted by students in the Ph.D. in Business with an option in management and research focused on OB&HR also benefit Pamplin when they are published in high quality journals. We will track the number of publications by full-time Ph.D. in Business students with the management option accepted by journals that the department qualifies for maintenance of SA status. (Research must have been performed and submitted while the author was a student but not necessarily accepted before graduation.)

**Ph.D. in Business with Management (OB&HR) Option  
Research and Placement Outcomes**

<b>Metric</b>	<b>2011-15</b>	<b>2012-16</b>	<b>2013-17</b>	<b>2014-18</b>
<b># Placed TT at target school</b>	0			
<b>% Placed TT at target school</b>	0			
<b># SA Pubs</b>	0			

**Contributing to the VT-shaped individual by OB&HR research**

Research in OB&HR has a long history in Pamplin. Because research in business schools is not typically conducted using a lab model, faculty are required to be expert in both the substantive issues investigated as well as the methods (including analytical tools) involved in their research. In that sense, the faculty are already VT-shaped. Faculty participating in Destination Area research groups will broaden their substantive and potentially their analytical portfolios, strengthening their VT shape.

**Gateway strategies and relations to NCR for OB&HR research**

Pamplin maintains its professional graduate programs in the NCR area. As a result, ten tenured/tenure-track faculty members are located at the Northern Virginia Center (NCR) in Falls Church.

**Opportunities for external funding for OB&HR research**

Alumni and firms in various parts of industry have provided substantial philanthropic resources to support Management programs in Pamplin including professorships to support OB&HR research.

**Research initiative and faculty hiring plans for OB&HR research**

The MGT department is working to recruit and retain tenure-track faculty who can contribute to high quality research. It will be seeking to replace a retiring faculty member to join a very successful young group of faculty members pursuing research in this area.

**Promoting inclusion and diversity among OB&HR research faculty**

As has been described above, diversity is a continuing consideration in recruiting faculty.

**Research and curricular innovation driven by OB&HR research**

Our research in OB&HR is connected to the new executive doctorate National Capital Region and the revisions to the full-time Ph.D. in Blacksburg which have been described previously.

## **Business strategy research**

### **Productivity metrics for strategy research**

1. Number of faculty publications accepted by UT-Dallas journals primarily related to business strategy.
2. Number of faculty publications accepted by “Pamplin Elite” journals on topics related to business strategy.
3. Proportion of MGT faculty who are classified as Scholarly Academic (SA) for AACSB accreditation purposes and faculty with superior research accomplishments in this domain including continued elite publication success.
4. Placement of graduates from the full-time Ph.D. in Business with an option in MGT and research focused on business strategy.
5. Publications by students in the full-time Ph.D. in Business with an option in MGT and research focused on business strategy.

### **Benchmarks for strategy research**

Benchmarks for research productivity in strategy are based on the benchmarks defined in section 2.2.1 for business research.

### **UT-Dallas Benchmark for strategy research**

(See above)

### **Pamplin elite journal benchmark for business strategy research**

Four of the Pamplin Elite journals are likely to publish strategy research.

1. Academy of Management Journal
2. Academy of Management Review
3. Administrative Science Quarterly
4. Strategic Management Journal

These Pamplin Elite journals are all included in the UT-Dallas list. For consistency with other college research programs, we use our historical performance as the benchmark. In the table below, we record the number of publications with at least one Pamplin author in the journals listed above.

**Business Strategy Research  
Pamplin Elite Publication Benchmarks and Faculty Participation**

<b>Metric</b>	<b>2011-15</b>	<b>2012-16</b>	<b>2013-17</b>	<b>2014-18</b>
<b># Elite Pubs</b>	4			
	2015	2016	2017	2018
<b># Faculty</b>	9			
<b>% Faculty SA</b>	100%			

**AACSB SA qualification benchmark for business strategy research**

AACSB is the premiere organization for accrediting business schools in the world. Schools accredited by AACSB must have at least 40% of faculty teaching effort from faculty who maintain the status of “Scholarly Academic” or SA. Schools must adopt a definition of SA that is consistent with the mission of the school while also reflecting the broad requirements of the AACSB standards. Appendix 4 provides Pamplin’s definition for SA classification.

In January 2016, 100% of Pamplin’s MGT faculty met the criteria for SA. This percentage is based on all faculty who have research expectations in their portfolio of activities (tenure-track and visiting faculty). Of these faculty, none have achieved a superior level of research accomplishment. One recently hired faculty member is likely to achieve this level in the next year.

**Ph.D. business strategy research benchmarks**

As previously explained, the Ph.D. in Business is a full-time program which requires an expensive subsidy to attract competitive students and significant time from the college’s leading researchers. The management option provides value to the college when its graduates are placed in tenure track positions at research-oriented business schools. Specifically, we track the number of graduates with a management option and research focused on strategy who accept tenure track positions at business schools on Pamplin’s “target list” which is attached as Appendix 4. It is not practical to compare Ph.D. in Business students to those from other groups of business schools so we compare to our own placement in prior years.

Research conducted by students in the Ph.D. in Business with an option in management and research focused on strategy also benefit Pamplin when they are published in high quality journals. We will track the number of publications by full-time Ph.D. in Business students with the management option accepted by journals that the department qualifies for maintenance of SA status. (Research must have been performed and submitted while the author was a student but not necessarily accepted before graduation.)

**Ph.D. in Business with Management (Strategy) Option**

<b>Metric</b>	<b>2011-15</b>	<b>2012-16</b>	<b>2013-17</b>	<b>2014-18</b>
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<b># Placed TT at target school</b>	0			
<b>% Placed TT at target school</b>	0			
<b># SA Pubs</b>	0			

**Contributing to the VT-shaped individual by business strategy research**

Research in strategy has a long history in Pamplin. Because research in business schools is not typically conducted using a lab model, faculty are required to be expert in both the substantive issues investigated as well as the methods (including analytical tools) involved in their research. In that sense, the faculty are already VT-shaped. Faculty participating in Destination Area research groups will broaden their substantive and potentially their analytical portfolios, strengthening their VT shape.

**Gateway strategies and relations to NCR for strategy research**

Pamplin maintains its professional graduate programs in the NCR area. As a result, ten tenured/tenure-track faculty members are located at the Northern Virginia Center (NCR) in Falls Church.

**Opportunities for external funding for strategy research**

Alumni and firms have provided substantial philanthropic resources to support management programs in Pamplin including professorships to support business strategy research.

**Research initiative and faculty hiring plans for strategy research**

The MGT department is working to recruit and retain tenure-track faculty who can contribute to high quality research. It is currently seeking to hire a more senior faculty member who will be able to mentor the group of young faculty, particularly those conducting research related to innovation and entrepreneurship.

**Promoting inclusion and diversity among business strategy research faculty**

As has been described above, diversity is a continuing consideration in recruiting faculty.

**Research and curricular innovation driven by business strategy research**

Our research in strategy is connected to the new executive doctorate National Capital Region and the revisions to the full-time Ph.D. in Blacksburg which have been described previously.

## **Operations and supply chain management research**

Operations and supply chain management (OSM) research is conducted primarily by faculty in Pamplin's BIT Department. While OSM research should be recognized as a college-level research program, much of it is also appropriately classified as "business research" and research in business analytics and decision making.

### **Productivity metrics for OSM research**

1. Number of faculty publications accepted by UT-Dallas journals primarily related to OSM.
2. Number of faculty publications accepted by "Pamplin Elite" journals on topics related to OSM.
3. Proportion of BIT faculty who are classified as Scholarly Academic (SA) for AACSB accreditation purposes and faculty with superior research accomplishments in this domain including continued elite publication success.
4. Placement of graduates from the full-time Ph.D. in Business with an option in BIT and research related to OSM.
5. Publications by students in the full-time Ph.D. in Business with an option in BIT and research related to OSM.

### **Benchmarks for OSM research**

Benchmarks for research productivity in OSM are based on the benchmarks defined in section 2.2.1 for business research.

### **UT-Dallas Benchmark for OSM research**

As previously explained, we use the UT-Dallas ranking as a benchmark because it is widely recognized within business schools. UT-Dallas allows comparison for a subset of the journals. Research related to OSM is most associated with:

1. Journal of Operations Management
2. Journal of Manufacturing and Service Operations Management
3. Production and Operations Management

Based on these journals for the period from 2011 through 2015 Pamplin ranks 107 in North America with 2 articles published. We compare Pamplin with our peer schools and aspirational schools in the tables below.

**Operations and Supply Chain Management Research  
UT-D Benchmarks 2011-2015**

Peer Schools			Aspirational Schools		
Institution	Rank N. America	Articles	Institution	Rank N. America	Articles
Virginia Tech	107	2	Virginia Tech	107	2
Georgia Tech	4	29	North Carolina	1	37
Michigan State	9	27	Ohio State	3	30
Purdue	17	20	Penn State	7	28
Arizona	83	5	Maryland	32	15
Pittsburgh	85	3	Illinois	34	14
Georgia	116	2	Washington	39	8
Iowa	n/a	0	Florida	45	8

**Pamplin elite journal benchmark for OSM research**

Four of the Pamplin Elite journals are likely to publish OSM research.

1. Journal of Operations Management
2. Journal of Manufacturing and Service Operations Management
3. Management Science
4. Production and Operations Management

For consistency with other college research programs, we use our historical performance as the benchmark. In the table below, we record the number of publications with at least one Virginia Tech author in the journals listed above.

**Operations and Supply Chain Management Research  
Pamplin Elite Publication Benchmarks and Faculty Participation**

Metric	2011-15	2012-16	2013-17	2014-18
# Elite Pubs	1			
	2015	2016	2017	2018
# Faculty	13			
% Faculty SA	76.9%			

**AACSB SA qualification benchmark for OSM research**

AACSB is the premiere organization for accrediting business schools in the world. Schools accredited by AACSB must have at least 40% of faculty teaching effort from faculty who maintain the status of “Scholarly Academic” or SA. Schools must

adopt a definition of SA that is consistent with the mission of the school while also reflecting the broad requirements of the AACSB standards. Appendix 3 provides Pamplin’s definition for SA classification.

In January 2016, 77% of Pamplin’s BIT faculty met the criteria for SA. This percentage is based on all faculty who have research expectations in their portfolio of activities (tenure-track and visiting faculty). Of these faculty, one has achieved a superior level of research accomplishment.

**Ph.D. OSM research benchmarks**

As previously explained, the Ph.D. in Business is a full-time program which requires an expensive subsidy to attract competitive students and significant time from the college’s leading researchers. The BIT option provides value to the college when its graduates are placed in tenure track positions at research-oriented business schools. Specifically, we track the number of graduates who accept tenure track positions at business schools on Pamplin’s “target list” which is attached as Appendix 4. It is not practical to compare Ph.D. in Business students to those from other groups of business schools so we compare to our own placement in prior years.

Research conducted by students in the Ph.D. in Business with an option in BIT who conduct research in OSM also benefit Pamplin when they are published in high quality journals. We will track the number of publications by full-time Ph.D. in Business students with the BIT option accepted by journals that the department qualifies for maintenance of SA status. (Research must have been performed and submitted while the author was a student but not necessarily accepted before graduation.)

**Ph.D. in Business with BIT (OSM) Option  
Research and Placement Outcomes**

<b>Metric</b>	<b>2011-15</b>	<b>2012-16</b>	<b>2013-17</b>	<b>2014-18</b>
<b># Placed TT at target school</b>	0			
<b>% Placed TT at target school</b>	0			
<b># SA Pubs</b>	3*			
<b>*2015 only</b>				

**Contributing to the VT-shaped individual by BIT research**

Research in operations and supply chain management has a long history in Pamplin. Because research in business schools is not typically conducted using a lab model, faculty are required to be expert in both the substantive issues investigated as well as the methods (including analytical tools) involved in their research. In that sense, the faculty are already VT-shaped. Faculty participating in



Destination Area research groups will broaden their substantive and potentially their analytical portfolios, strengthening their VT shape.

### **Gateway strategies and relations to NCR for OSM research**

Pamplin maintains its professional graduate programs in the NCR area. As a result, ten tenured/tenure-track faculty members are located at the Northern Virginia Center (NCR) in Falls Church.

### **Opportunities for external funding for OSM research**

Alumni and firms in various parts of industry have provided substantial philanthropic resources to support operations and supply chain management programs in Pamplin including professorships to support OSM research.

### **Research initiative and faculty hiring plans for OSM research**

The BIT department is working to recruit and retain tenure-track faculty who will contribute to high quality OSM research resulting in elite journal publications, enhance the learning experience for its undergraduate OSM option student majors, and engage its Ph.D. students in research resulting in publications in high quality and elite OSM journals. It is not recruiting faculty during 2016-2017.

### **Promoting inclusion and diversity among OSM research faculty**

As has been described above, diversity is a continuing consideration in recruiting faculty. The Department of Business Information Technology has a long-standing commitment to gender, ethnic and racial faculty diversity. As a result of this commitment, the faculty of the department is likely the most diverse in Pamplin. The department believes this is essential for attracting a diverse group of students to the IT field, which is important both to the College and to employers of its undergraduate BIT majors, and for achieving diversity in its Ph.D. program. Of the department's 25 current full-time faculty (including tenure-track faculty, instructors and professors of practice), eight (i.e., one-third) are female, and two are African-American. Its most recent tenure-track faculty hire was female, and its two new professor of practice hires for this coming year are a female Asian and a male Latino.

### **Research and curricular innovation driven by OSM research**

Our research in OSM is connected to the new executive doctorate National Capital Region and the revisions to the full-time Ph.D. in Blacksburg which have been described previously.

## Sustainable Global Prosperity research

### Productivity metrics for Sustainable Global Prosperity research

1. Number of faculty publications accepted by UT-Dallas journals primarily related to business Sustainable Global Prosperity.
2. Number of faculty publications accepted by “Pamplin Elite” journals on topics related to business Sustainable Global Prosperity.
3. Publications by students in the full-time Ph.D. in Business focused on sustainable global prosperity.

### Benchmarks for Sustainable Global Prosperity research

Benchmarks for research productivity in Sustainable Global Prosperity are based on the benchmarks defined in section 2.2.1 for business research.

### UT-Dallas Benchmark for Sustainable Global Prosperity research

As explained above, we use the UT-Dallas ranking as a benchmark because it is widely recognized within business schools. UT-Dallas allows comparison for a subset of the journals. Research related to sustainable global prosperity could be published in any of the UT-Dallas journals. However, the journal most associated with that research area is:

1. Journal of International Business Strategy.

Based on these journals for the period from 2011 through 2015 Pamplin ranks 75 in North America with 1 article published. We compare Pamplin with our peer schools and aspirational schools in the table below.

### Business Analytics and Decision Making Research UT-D Benchmarks 2011-2015

Peer Schools			Aspirational Schools		
Institution	Rank N. America	Articles	Institution	Rank N. America	Articles
Virginia Tech	75	1	Virginia Tech	75	1
Georgia Tech	NR	0	North Carolina	76	1
Purdue	55	1	Maryland	38	2
Pittsburgh	NR	0	Ohio State	8	7
Michigan State	27	2	Washington	76	1
Georgia	41	2	Penn State	75	1
Arizona	NR	0	Illinois	75	2
Iowa	75	1	Florida	NR	0

### **Pamplin elite journal benchmark for business sustainable global prosperity research**

Although research on sustainable global prosperity could appear in any of the elite journals, one journal has a specific focus on international business: the Journal of International Business Strategy. This journal is also included in the UT-Dallas list.

For consistency with other college research programs, we use our historical performance as the benchmark. In the table below, we record the number of publications with at least one Pamplin author in the journals listed above.

#### **Business Sustainable Global Prosperity Research Pamplin Elite Publication Benchmarks**

<b>Metric</b>	<b>2011-15</b>	<b>2012-16</b>	<b>2013-17</b>	<b>2014-18</b>
<b># Elite Pubs</b>	1			

### **Ph.D. business sustainable global prosperity research benchmarks**

We will track the number of Pamplin elite journal publications authored by Ph.D. students related to sustainable global prosperity including topics in international business, business ethics and corporate social responsibility, and social entrepreneurship. (Research must have been performed and submitted while the author was a student but not necessarily accepted before graduation.)

### **Contributing to the VT-shaped individual by business Sustainable Global Prosperity research**

Research in topics related to sustainable global prosperity have a long history in Pamplin. Because research in business schools is not typically conducted using a lab model, faculty are required to be expert in both the substantive issues investigated as well as the methods (including analytical tools) involved in their research. In that sense, the faculty are already VT-shaped. Faculty participating in Destination Area research groups will broaden their substantive and potentially their analytical portfolios, strengthening their VT shape.

### **Gateway strategies and relations to NCR for sustainable global prosperity research**

Pamplin maintains its professional graduate programs in the NCR area. As a result, ten tenured/tenure-track faculty are located at the Northern Virginia Center (NCR) in Falls Church.

### **Opportunities for external funding for sustainable global prosperity research**

Pamplin faculty conducting research on topics related to sustainable global prosperity could participate in research programs in the Global Systems Science destination area as well as the Innovation and Entrepreneurship strategic growth area.

In addition, alumni and firms have provided substantial philanthropic resources to support research programs in Pamplin including professorships to support sustainable global prosperity research.

### **Research initiative and faculty hiring plans for Sustainable Global Prosperity research**

Faculty interests in topics related to sustainable global prosperity can be found across the College—notably in Management (business ethics), Marketing (quality of life; poverty and consumer behavior), Finance (cybersecurity), and HTM (sustainable tourism). No faculty hires specific to this area are envisioned; however, many faculty members in Pamplin have research interests related to it so natural growth can be expected.

### **Promoting inclusion and diversity among business Sustainable Global Prosperity research faculty**

As has been described above, diversity is a continuing consideration in recruiting faculty.

### **Research and curricular innovation driven by business Sustainable Global Prosperity research**

Our research in sustainable global prosperity is connected to the offerings of related courses in the BS in Business Minor in International Business which we plan to expand into a minor focused on sustainable global prosperity.

### **2.3.3. Research programs to remain status quo or be reduced**

The research areas described in this section have limited impact on Pamplin's reputation as a business school. This may be because the number of research active faculty in the area is small. In this situation, the faculty may continue to produce high quality research in the area described and may also contribute to larger area such as those described in section 2.2.1. In other cases, the impact from the research areas below may be limited for Pamplin's reputation because the natural outlets are practice-oriented. Such research can be influential and is important but does not support our desire to be known for scholarly business research.

#### **Real estate research**

Some Pamplin faculty conduct research related to real estate. Their work covers special issues in the finance and marketing of real estate.

#### **Productivity metrics for real estate research**

1. Number of faculty publications accepted by "Pamplin Elite" journals on topics related to real estate.
2. Number of faculty engaging in applied research and outreach projects related to real estate.

#### **Benchmarks for continuing vs. phasing our real estate research**

If the number of faculty publications and faculty engaging in applied research and outreach projects does not increase over the next three years, the College may no longer treat this as an identified area of research.

#### **Real estate research contributing to the VT-shaped individual**

As noted earlier, Pamplin faculty are already VT-shaped. It is possible that faculty participating in Destination Area research groups will broaden their substantive and potentially their analytical portfolios, strengthening their VT shape as well as bolstering the program of research in real estate.

#### **Pamplin plans for real estate research**

Through its participation in the Real Estate Program, Pamplin will continue to monitor organized research opportunities in this area and insure that Pamplin faculty are apprised of these opportunities.

## **Business Law Research**

Pamplin has a significant number of business law classes. One of its finance professors is very well known in the field. Her work crosses into areas of policy, privacy, business analytics and other areas. We anticipate that she will continue to be highly productive in the Pamplin Elite journal American Business Law Journal.

Pamplin will continue to provide and perhaps expand innovative instructional programs related to business law. However, we will rely increasingly on professors of practice to provide this instruction. While these professors of practice will produce some applied research to stay current, it is unlikely that they will contribute significantly to Pamplin's scholarly reputation.

### **Productivity metrics for business law research**

1. Number of faculty publications accepted by the "Pamplin Elite journal" American Business Law Journal.
2. Number of faculty with business law as a primary academic interest engaging in basic or applied research in destination areas.

### **Benchmarks for continuing vs. phasing our business law research**

So long as Pamplin has one or more tenure track faculty conducting research in Business Law, the college will retain this research area.

### **Business law research contributing to the VT-shaped individual**

Faculty with expertise in business law have opportunities to participate in multiple destination Area research programs. Their participation will broaden the scope of many of the research areas by injecting ideas related to the connection between technology and policy and legal issues.

### **Pamplin plans for business law research**

Pamplin will hire additional business law Professors of Practice and Instructors as needed for instruction. These non-tenure-track faculty will be expected to remain current and some will accomplish this through research activity. Pamplin has no plans to hire additional tenure-track faculty in this area.

## 2.4. Outreach Programs

Pamplin has long maintained strong relationships with external constituencies. Of particular importance, of course, are our relationships with businesses and business leaders. These relationships are critical to the development of our students, placement of our graduates, and success of our advancement programs.

Some of the fruits of these outreach programs have already been mentioned:

- \$6.7 million in fund raising last year, best on record for the College,
- Involvement of over 1,600 alumni and business executives in engagement events,
- Naming endowment of the Apex Center for Innovation and Entrepreneurship less than a year after the College formed the center,
- Awards including Telly and GOLD Muse advertising competition awards

These accomplishments grew out of Pamplin's systematic efforts to engage Virginia Tech alumni in the business world and companies that have an interest in our students. A few of the highlights of the many programs that fall within this scope include:

- The Pamplin Advisory Council, Young Alumni Board, departmental advisory boards, and Center advisory boards that actively engage over 300 business leaders each year,
- Student programs such as SEED, BASIS, PRISM, and the BIT Showcase which highlight the work of our students to businesses. The BIT Showcase, for example, involves business sponsors and reviewers that have included major firms including Accenture, Capital One, CarMax, Hershey's, and Visa Credit Card Corp. PRISM students working with external clients won two industry (not just student) advertising awards.
- Student trips to businesses, for example those organized by PRISM, Apex CIE (Innovation treks), and by Pamplin's Career Services office.
- Business Horizons career fair, the largest student-run business school fair in the country with recruiters from over 150 firms participating each year.
- The recent growth in industry-sponsored research by Pamplin faculty, e.g., health analytics projects with Carilion Clinics, data analytics with Leidos, and product safety analytics that led to meetings with the Consumer Product Safety Commission with four students interning with CPSC.

In light of Pamplin's aggressive advancement goals for the next several years, outreach remains a critical component of the College's strategic plan.

### **3. 2013-2014 Progress against Metrics in the University Scorecard**

A copy of the university scorecard for Pamplin with comments for various performance measures is provided in Appendix 5. The college is developing and refining scorecards for all College units including the departments and areas reporting to each associate dean. This section provides comments on the university scorecard.

#### **Learning:**

The color performance rating of Pamplin suggests generally good performance on metrics associated with “learning.” First-year experience participation is stable despite continuing growth in the entering class, which will also result in future growth in degrees awarded. As already described, Pamplin is launching new graduate programs and updating curricula in existing programs; we expect these initiatives to increase future graduate enrollment. We are proud that efforts to increase underrepresented enrollment are successful and find the FYE course valuable so support its growth. Pamplin is concerned that the good performance on “learning” metrics in the university scorecard is stretching College resources and that specific consideration of this tension is needed.

#### **Discovery:**

The ability of business schools to attract the best faculty and students is related to its research productivity. For a RU/VH university business school, the central criterion is publication in elite business journals. The focal metrics for Pamplin’s core research programs focus heavily on such publication success and much progress is needed and expected. There is very limited traditional sponsored research activity in business schools, largely because of the limited funding agencies provide that is focused on mainstream business research. The metrics of the university scorecard do not capture Pamplin’s research activities; we are encouraged by the Provost’s indications that more tailored tracking of research accomplishment will be implemented.

#### **Engagement:**

Pamplin programs are very engaged with business and other constituencies. The college has a range of study abroad and related programs with strong student participation. Experiential learning opportunities in the college are increasing as shown by the continuing increase in student participation.

The number of students participating in study abroad shown on the scorecard in each of the three years is incorrect. Some courses with one section taught as part of a study abroad program have all sections included in the calculation. We believe approximately 25% study abroad.

With the growth of industry funding, Pamplin faculty conducting research and teaching in selected areas will have access to external funding and Pamplin will support these activities—particularly through CBIA and Apex CIE.

#### **Diversity of the Faculty**



In fall 2016, Pamplin hired twelve new full-time faculty members of whom five are tenure track. These new faculty include two females of whom one is black. We continue to seek a diverse pool of applicants for our positions.

## 4. Appendices

**Appendix 1**  
**Pamplin College of Business**  
**Strategic Plan**  
**2014-2022**

**Adopted: 5-13-2014**

**Revised: 7-3-2014**

**Revised: 8-31-2016**

**1. *Introduction***

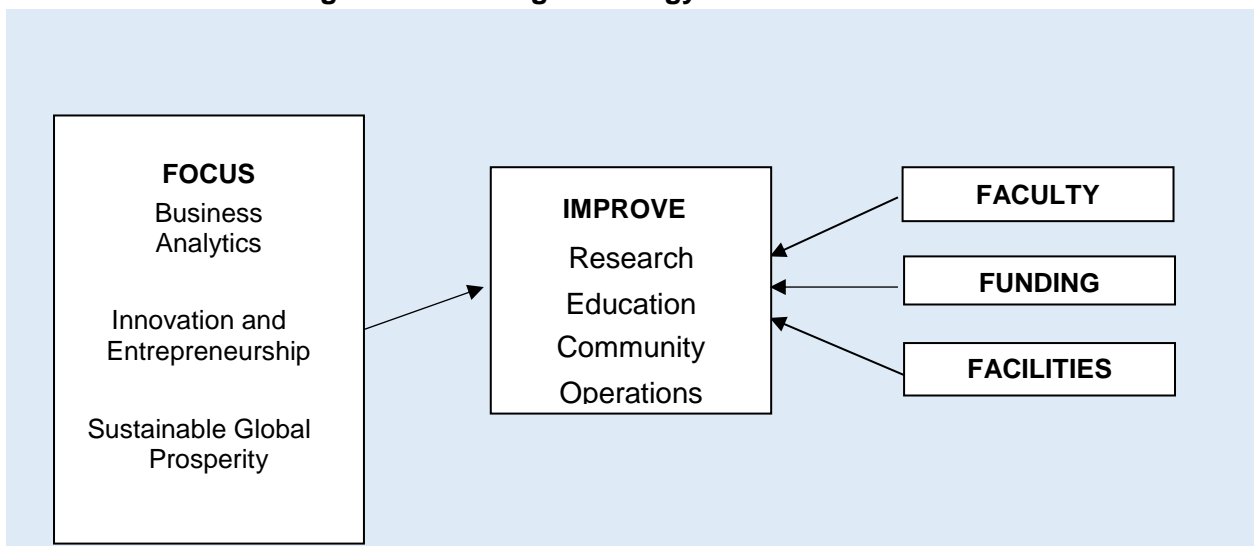
Pamplin is a nationally recognized, integral part of Virginia Tech—the premier research university of the Commonwealth. Changes at Virginia Tech and in higher education provide an opportunity for Pamplin to refine its mission and secure a more prominent role in the university’s future. The college must seize this opportunity to raise the aspirations and expectations of alumni, faculty, staff and students.

The vision, mission, and plan by which Pamplin will advance and achieve greater national and international prominence are described here. Companion documents, the *Implementation Plan*, scorecards, and the three-year plan being developed for the provost beginning in summer 2016 provide more details including quantitative goals and estimated costs. Progress toward these goals will be reviewed at least every two years. Over the course of this plan, we will monitor changing conditions and opportunities, and when appropriate, revise our direction.

Pamplin’s strategic plan is organized around four linked constructs—focus, faculty, facilities, and funding (Figure 1). Focus will help Pamplin become a more highly sought after destination for students who desire a business education combined with technology and strength in a select number of domains that cross majors. In order to align Pamplin’s strengths with those of the university and to distinguish itself among business schools globally, the plan focuses on excellence in: business analytics, innovation through entrepreneurship, and sustainable global prosperity. These focal areas will shape future enhancements in the college’s activities and programs. The focal areas will complement and enhance Pamplin’s existing strong programs such as its undergraduate majors. Realizing these improvements requires three central resources—the college’s faculty, sufficient funding to enable investments in improvement, and facilities designed to support the people and programs planned for Pamplin.

Our primary location, Pamplin Hall, does not support business education as practiced by top schools in the 21<sup>st</sup> century. Thus, it is a limitation on the ascendance of the college. The building lacks the types of space that facilitate hands-on and social learning such as team projects and networking. It does not promote a sense of community resulting from interaction between faculty and students beyond the classroom and it lacks specialized technology and classrooms important for certain disciplines in order to provide the best possible student experience. It is also isolated from the university’s plan to create themed districts which support current and planned areas of strength across traditional academic disciplines. Pamplin Hall has insufficient classroom capacity and format given the size of the college forcing most of the college’s teaching to be completed elsewhere and limiting the enhancement of student career and advising services. Because Pamplin Hall does not support business education as required in the 21<sup>st</sup> century, it has an adverse impact on our ability to recruit top-level faculty and purpose-driven students who can achieve the best possible cross disciplinary education. It also presents challenges to the development of a sense of community, and hampers our efforts to engage industry professionals. This plan calls for replacement of Pamplin Hall.

**Figure 1. Planning a Strategy for Excellence**



## **2. Vision**

Pamplin will be a leader in business education, developing knowledge and skills to enhance success in a complex, digital economy, and recognized by alumni and companies that employ our graduates and by individuals at influential universities. *We will be particularly known for our expertise and accomplishments in business*

*intelligence/analytics, innovation through entrepreneurship, and for programs/activities to foster sustainable global prosperity.*

## **2.1 Business Analytics**

The systematic analysis of vast collections of business data to inform business decisions has permeated organizations, with prominent applications in areas including accounting, finance, marketing, supply chain management, human resources, and strategic planning. Business intelligence and analytics builds on information technology tools for organizing and accessing large data structures, statistical and text mining tools for analyzing and interpreting data, and, guided by business concepts and theory, leverages that data to improve decision making and drive business performance. Pamplin will enhance its Center for Business Intelligence and Analytics, which will serve as an interdisciplinary resource to support faculty research both within the college and in cooperation with other centers and academic units on campus. The College will sponsor curricular initiatives for students with interests in business analytics and outreach to the business community. CBIA will focus on innovative applications of analytic assessment and predictive analysis and problem solving techniques to enhance decision effectiveness in a digital environment. The center will also consider the study of legal and ethical policy issues in a society that increasingly relies on analytics and digital information.

## **2.2 Innovation and Entrepreneurship**

Job growth in the United States depends heavily on innovative new businesses—innovation that extends beyond new products, services, and ventures to include new processes and visions such as design thinking, the “Internet of Things”, social entrepreneurship, the arts, non-profits, and extraordinary new technologies. Pamplin will enhance the education of its students and increase faculty research with respect to innovation and entrepreneurship. Experiential learning and mentoring opportunities related to entrepreneurship can assist students in developing the skills, drive and determination for succeeding in start-up environments and help them embrace innovation with confidence. These same educational experiences will also help graduates start and develop careers at existing companies. With partners, Pamplin will play a greater role in facilitating the commercialization of intellectual property developed at Virginia Tech and work with organizations (business, nonprofit, and government) to advance Virginia entrepreneurship activities, with special emphasis on the Roanoke/Blacksburg area and the National Capital Region. Pamplin’s Apex Systems Center for Innovation and Entrepreneurship will be a central part of advancing this aspect of our vision.

### ***2.3 Developing Sustainable Global Prosperity***

Through educational programs and research, Pamplin will help increase economic development and improve the understanding of how culture and local institutions impact business. Pamplin will enhance students' understanding of globalization concepts and drivers, and of the political risks and vulnerabilities in the global marketplace. Increased economic development will be achieved through immediate and long-term career success of Pamplin graduates directly through the activities of our programs, and in other ways. Pamplin programs will often highlight differences and opportunities related to the use of business analytics and the development of startup organizations either for-profit or for other societal reasons.

Pamplin will identify and develop partners for collaboration on activities related to global prosperity. Some of these partners will be other units of Virginia Tech such as the Office of International Affairs and Outreach and other Virginia Tech Colleges. Some of these partners will be international universities where joint programs involving faculty and students can be developed. We will also do more to engage international students with US students on our own campus.

Pamplin has long been educating students for the global marketplace to enable them to understand how to work with people from diverse cultures and to operate effectively in other countries. The most common way to achieve this has been through faculty-conceived study abroad programs. Programs of this type will continue but more emphasis will be put on strategically identifying opportunities for programs that align with Pamplin's strengths. These institutionally identified programs receive more staff support and are expected to remain active beyond the interest of those initially engaged. The college will enhance and expand these opportunities, leveraging relationships with international partner schools, alumni contacts abroad, and on-campus partners.

### ***2.4 The Facility of the Future: The Global Business and Analytics Complex***

Pamplin's facilities must support the type of business school it will become and support its evolution for many decades into the future. Therefore, we will develop plans to design, fund and construct the Global Business and Analytics Complex (G-BAC) on the main campus in Blacksburg. This space will be supplemented by use of the developing facilities in the University's Innovation District.

G-BAC will provide space that fosters experiential learning inside and outside the classroom while allowing key programs and services to expand. It will provide the venue for fostering a broader community of learning that will include not only students and faculty but also alumni and business leaders. Unlike any existing major

business school, this learning community will be designed with residential space for students—building on Virginia Tech’s success with living-learning communities themed to certain disciplines. The G-BAC’s residence component will reflect two of Pamplin’s three academic themes: business analytics, and sustainable global prosperity. The third theme, innovation and entrepreneurship, is already supported in a section of Pritchard Hall called “Innovate.” We plan to replace it with an updated facility to fully carry out its mission.

G-BAC will further a sense of community for students who want to pursue careers related to the use of analytics in business and other fields and it will also do the same for students who wish to pursue careers related to international business. Pamplin has already achieved this with the entrepreneurship residential community, Innovate. As with Innovate, the new residential communities associated with G-BAC and other learning and research spaces will be available to students and faculty from across the university and will accommodate resident scholars and practice fellows.

By providing space for all Pamplin faculty, G-BAC will allow more complete integration of the hospitality and tourism management department, currently located across campus from Pamplin Hall. G-BAC and the adjacent new classroom building as well as the university’s Innovation District will vastly increase the learning space available for business classes. G-BAC and the Innovation District will also provide the space necessary to increase academic and career advising for students, grow the college centers, and expand the size of other programs. It will include team rooms for group projects and specialized technology and classrooms to support specific disciplines. It will include technology to support online education, data visualization, high-performance computing, etc. The complex can also enhance faculty research opportunities by providing facilities such as state-of-the-art behavioral labs. The residence component can facilitate exchange programs that allows faculty from global universities to visit and interact with students, thereby enhancing their learning experience.

The need for the G-BAC to achieve specific goals is highlighted throughout the remainder of this document

### **3. *Mission***

As a large, comprehensive business school, Pamplin will contribute to solving some of society’s biggest challenges through the three main components of its mission.

- 3.1 Conduct research and disseminate the results as a means of improving the understanding and practice of business, improving our educational programs, and promoting sustainable economic development.

- 3.2 Educate ethical, motivated and well-prepared citizens of Virginia and the world so that they will be better able to contribute as to their communities, innovate in business practice, and enhance quality of life. While our focus will remain on students in business majors, we will include cross-disciplinary educational opportunities for students of all majors. Our main campus in Blacksburg will provide programs and facilities well-suited to serving the needs of traditional students—especially undergraduate students—who will benefit from the immersion of a residential college experience. Our extended campus facilities will primarily provide programs and facilities well-suited for working professionals and other experienced students while eventually providing specialized experiences for some students primarily enrolled on the main campus in Blacksburg.
- 3.3 Use our ideas and resources to improve the functioning of Virginia Tech and other universities; perform activities that support and engage our students, alumni and corporate partners; and serve the needs of relevant professional organizations.

#### **4. *Priorities for Improvement***

Pamplin has identified four broad areas that are priorities for improvement over the next five years: research, education (graduate and undergraduate), building community, and improved operations.

##### **4.1. Research (including the Ph.D.)**

We will increase the impact and reputation of research conducted by Pamplin faculty. The faculty will often work on research projects with graduate and in some cases, undergraduate students. Some Pamplin faculty will participate in research connected to the university's "Destination Areas."

Pamplin faculty, similar to faculty at other business schools with a research focus, will publish the results of their research in journals that include a rigorous peer review process and have a strong impact on the understanding and practice of business. The college will increase the support it provides to faculty to conduct this type of research. Beyond these influential publications, intended outcomes of this focus include:

- Increased visibility of Pamplin faculty research accomplishments as reflected in academic citations, participation in high-profile professional conferences, and calls by companies and government agencies for advice, education or other projects.



- Assuring that students, at every level, get the most up-to-date education. Faculty will use their research methods and results to improve their classes and other interactions with students.
- Improved ability of Pamplin to attract the best qualified doctoral students. Faculty research collaboration with doctoral students will result in improved placement of graduates in tenure-track positions at business schools in research universities.
- Collaboration with faculty from other parts of the university to leverage their expertise and increase the quality and quantity of their research output. The College's research centers will promote and support this collaborative research as will the resources and organization associated with the university's Destination Areas. Pamplin faculty and centers will also seek appropriate opportunities to collaborate with Virginia Tech's research institutes.
- Application of research to improve business practice, particularly in the areas of business analytics, innovation and entrepreneurship, and sustainable global prosperity, involving Pamplin's professors of practice and in collaboration with the external community.
- Enhancement of international research activities including collaboration with faculty from well-respected institutions outside the US.
- Seeking resources for research projects, including when appropriate, resources from federal, state and corporate funded programs.
- Establish collaborative research projects with business organizations who have mutual objectives and offer sources to supplemental research funding.

## **4.2. Education**

### **4.2.1. Graduate Education**

Driven by a desire to better serve the changing needs of our constituencies, Pamplin will improve and expand some of its existing programs, consolidate other programs and create innovative new programs. Major planned changes include:

- Continue to take advantage of the reorganization of MBA programs which began in 2013. Enhance the focus on working professionals in the National Capital Region. Continue to increase staff to competitive levels and take advantage of shared resources and synergy in operations for MBA and other extended campus programs. Continue to increase the range of courses and

services available to students in order to increase MBA enrollment while improving quality.

- Take advantage of the restructured masters and doctoral programs in hospitality and tourism management to enhance quality and increase enrollment.
- Maximize the value of the Masters of Accounting and Information Systems (MACIS), assuring that its graduates are well prepared for a career in public accounting and are highly sought after by the firms that will hire them. We will also increase the size of the program by enrolling more students as they complete accounting and other Pamplin degrees and by recruiting graduates from other accounting programs in the region.
- Capitalizing on the excellent reputation of the Masters of Information Technology (MIT) and changes to its tuition model to improve and expand the program. Increasing the scale of the program will require a redesign of the pedagogy of some of its courses so that they can provide effective education and personal interaction while reaching an unlimited number of students.
- Expand the master's program in business analytics which was launched in fall 2016.
- Continue the development and implementation of an executive doctorate in the National Capital Region after its first cohort starting fall 2016. This program will serve the unmet need for education leading to the ability to conduct research in business. This demand comes from business schools where there is a serious shortage of faculty with appropriate professional and academic credentials. There is also a shortage of professionals with business research expertise in business and government.
- Fully implement cooperative programs with the Faculty of Health Sciences or the Virginia Tech Carillion School of Medicine
- Looking opportunistically for ways to deliver education, especially in the National Capital Region that lead to rapid career opportunities and advancement. This may involve the use of existing courses and materials for specific companies on a contract basis or may involve awarding credentials (i.e., certificates) for completing sets of courses that require less time than the completion of a degree.

#### **4.2.2. Undergraduate Education**

Pamplin undergraduates receive an excellent education but students should expect to gain more from their education than competency in the activities of their future profession. To that end, Pamplin undergraduates will be required to take advantage of the university's curriculum for liberal education and complete a core set of business courses and elective opportunities outside their majors to assure that they have a broad understanding of business and how its functions interact.

As a part of Virginia Tech, Pamplin will participate in collaborative educational programs and research that help to distinguish the college and simultaneously enhance the university. Pamplin will assure that its students complete educational programs that combine technology with business. Our degree programs will include computer programming, production/operations systems ("making"), design thinking/collaboration, and education about the need to adapt to the complex environment. Pamplin will also help to develop personalized instruction in STEM-related courses through machine-assisted technology.

The college will provide students with opportunities to develop critical skills:

- Communication skills, through instructional activities directed to improving oral presentation, writing, and listening skills. Communication skills are one of the learning goals selected as a part of AACSB's Assurance of Learning expectation.
- Teamwork through required activities that assure students are trained to work in diverse teams as well as individually. Fully achieving this objective will require collaborative spaces and project (break-out) rooms;
- Networking, through interaction with other students inside and outside of class, with faculty, alumni and the business community. This will be promoted by the use of social and collaborative workspaces;
- Leadership, through volunteer activities, clubs, and other organizations that offer leadership opportunities. Providing space for Pamplin organizations will make the development of leadership more practical;
- High Ethical Standards and understanding of the legal and social responsibilities of business, through community engagement as well as curricular emphases.
- Career-enhancing expertise in the College's focal areas of business analytics, innovation through entrepreneurship, and developing sustainable global prosperity.

- Critical thinking and problem-solving skills.

Continuous improvement of the undergraduate program will require focused investments in:

- Enhanced learning and higher satisfaction with core business classes. We will experiment with changes to the current large lecture format of learning and, invest in increased faculty and other instructional resources, teaching innovations, and facilities appropriate for teaching business in the 21<sup>st</sup> century.
- We will align enrollment in the college and across college majors to balance student demand, employment opportunities, and resources.
- Academic advising is critical to the success of Pamplin students. The impact of the major improvements in 2015 needs to be monitored to assure that we are meeting the needs of students.
- Career services, career advising and greater collaboration with the companies who hire Pamplin graduates and support for any future university initiatives to offer services to alumni. This will require funding and space for activities convenient for students and for company representatives.
- We will provide enriched opportunities for all of the college's students in its interdisciplinary emphases—business analytics, innovation and entrepreneurship, and global prosperity.
- Beyond academic content, the college will provide students with opportunities to develop critical skills for long-term success. We will enhance experiential learning to give students more opportunities to apply their classroom learning to actual business situations. Internships, live cases within courses, and co-op positions can all contribute to this improvement.

The improvements we make in undergraduate education both in the classroom, in extracurricular activities, and in services to students, including career services, will result in our graduates having opportunities to begin careers shortly after graduation and to adapt and progress through their careers. These improvements will be evident by career and salary progression.

### **4.3. Community**

Virginia Tech is well known for not only its academic programs but its spirit of community that attracts and energizes students and faculty, and promotes alumni pride and engagement long after graduation. The Pamplin community is rich, including approximately 125 teaching faculty, 70 academic support, staff, and administrative personnel, 4,500 students, and 45,000 alumni. The Pamplin

community to which we strive is an inclusive community—welcoming individuals with a range of backgrounds, characteristics, and interests. We will encourage participation in Pamplin by individuals from underrepresented groups and cultivate an appreciation of diversity (race, color, religions, sex, national origin, disability, age, and ancestry) among faculty, students, and staff. Beyond strong academics, Pamplin will improve its programs by promoting not only pride but a sense of community that comes from long-term relationships among its stakeholders.

Pamplin will develop structures and activities that promote greater engagement, collaboration, and belonging throughout its community. It will also increase the information it provides various components of the Pamplin community through traditional publications and new media.

#### **4.3.1 Faculty and Staff**

Over the course of this plan, Pamplin will develop structures and activities that promote greater collaboration and community. This will be accomplished in a variety of ways. Pamplin will further develop and strengthen the CBIA and ASCIE to support research and academic programs across departments. These Centers will provide a mechanism for engaging with related organizations at Virginia Tech and externally. In addition, Pamplin will further develop social activities for faculty, staff, alumni and students.

We will also develop programs to support faculty success that lead to promotion and tenure. These will range from building community to improving information about resources/expectations to mentoring. Our faculty recruiting efforts will focus on hiring the highest quality individuals who can support and enhance Pamplin's mission.

#### **4.3.2 Alumni and the Business community**

Pamplin alumni are spread across the country and increasingly around the world; many of them hold prominent positions in business. Because of the importance of Pamplin's educational and research programs, there is also a group of business leaders who are not alumni but nevertheless choose to support the college. Some of these alumni and business leaders are formally engaged with Pamplin through organizations including departmental, center and program advisory boards and college-wide organizations including the Pamplin Advisory Council (PAC). Others have been engaged as part of the Pamplin community through social activities. Many also hire graduates of Pamplin or benefit from the services of Pamplin faculty.

Since 2013, new structures for alumni engagement have been developed including the Recent Alumni Board (RAB) and the Emerging Leaders Board. Existing organizations are being significantly revised including PAC and the R.B. Pamplin Society. We must continue to further engage highly successful alumni and also enhance the engagement of recent graduates. Additional staff will be devoted to working with this constituency to the extent that funding and space constraints allow. We will make greater use of our facilities in the National Capital Region for these activities.

#### **4.3.3 Students**

We will emphasize diversity and inclusion in our recruitment of students, faculty and staff to enhance the entire Pamplin student experience. In developing these networks and opportunities, we will further enhance an already strong affinity for the college and better prepare our graduates for the increasingly diverse world of business.

Students will benefit from the additional points of connection with alumni and business leaders allowing us to enhance student learning (through speeches, guest lectures in classes, and mentoring) and to develop new experiential learning such as internship and consulting class opportunities.

Finally, we will create the physical space necessary to support these improvements, foster experiential learning, and enhance our already strong sense of community.

#### **4.4. Operations**

Pamplin must assure that it is using its resources effectively and efficiently. We will institute better processes for managing our budget in order to ensure that we fund essential and constructive ideas. In part, Pamplin will rely on resource forecasts from the new university funding models. In part, we will use other projections for available resources and expenses to plan for the future.

Pamplin will reorganize its staff dedicated to fund raising, alumni relations and communications into an advancement structure. This will reflect changes that have been made within the university. These changes allow Pamplin to formalize the organizational structure which it has sought to create since 2014. Our new structure will reduce barriers that separate activities and information flows between student, alumni and other groups. We anticipate adding experienced staff to achieve greater levels of fund raising, alumni engagement and to enhance our communications with all groups. Pamplin will increase the percentage of alumni who provide their philanthropic support to the college

## **Appendix 2**

### **EMBA Curricular Redesign and Implementation**

The Executive MBA (EMBA) program at Virginia Tech is offered at the National Capital Region to meet the educational needs of corporate managers and executives. Such individuals manage large groups of employees and resources within their organizations and often set strategic goals for the firm. EMBA program structure appeals to these individuals due to its scheduling convenience of courses offered on the weekends and the highly engaging team-based model of instruction used by the faculty.

In 2015-16 the Graduate Studies & Policies Committee in Pamplin College began a review of the EMBA curriculum for possible improvements in program structure and course content. Program alumni, MBA Advisory Board members, and executives in various corporations at NCR were surveyed to obtain feedback on the program and recommendations for possible improvements to the program. A complete review of peer and aspirant EMBA programs around the nation was also undertaken for curriculum comparison and format. Next the committee reviewed core/foundation courses in the program in relation to feedback received from survey respondents and other core courses offered by leading EMBA programs. As a result, GS&PC recommended adding more information technology related courses and content to the core including business intelligence, an accounting course in financial statement analysis, and a course in corporate communications.

The committee further reviewed the program structure to insure uniformity in course expectations, student team dynamics, and the use of common cases in courses to help faculty and students integrate knowledge gained in various stages of the program.

GS&PC plans to continue its review of EMBA curriculum in 2016-17 to revise the upper level courses in the program. It will consider aligning the curriculum with Pamplin's strategic pillars on Business Intelligence and Analytics, Innovation through Entrepreneurship, and International Programs in order to differentiate Pamplin's EMBA from the regional competition at NCR. A curricular review of several other EMBA programs offered in the Washington, D.C., area demonstrates a higher emphasis on general management courses and no clear differentiation among these programs. By focusing the Pamplin EMBA on information technology and entrepreneurship, in addition to offering general management courses, Virginia Tech will create a highly specialized program that captures Pamplin College's strategic direction and leadership and the university's destination areas on Decision Sciences (DA), and Entrepreneurship (SGA).

GS&PC committee's recommendations once approved will be implemented with the incoming class in fall 2017.

## Appendix 3 AACSB SA Faculty Classification

### Scholarly Academic Status

Consistent with AACSB, Pamplin considers doctoral recipients to hold SA classification for five years from the awarding of the degree. Also consistent with AACSB, Pamplin considers dissertation stage doctoral candidates to have attained this classification for three years from the start of the dissertation. Any faculty member who is granted a tenure clock extension by Virginia Tech during preceding five years will also have the time period for judging SA classification extended.

Faculty will maintain SA classification if they have published the number of articles in the approved Pamplin College list of elite journals required to qualify for summer research grant funding during the preceding five years and at least two other intellectual contributions from Table 1. (See Pamplin Elite Journal List for details.)

Alternately, faculty can maintain SA classification by achieving **at least four** intellectual contributions from Table 1, "Scholarly Contributions for Maintaining SA Status," within the preceding five years, **including at least two** refereed journal articles as described in Table 1, Point 1.

#### Table 1 Scholarly Contributions for Maintaining SA Status

1. Peer reviewed journal article that is among those considered high quality and impactful by the academic department,
2. Scholarly book (i.e. not text or popular press) publication or book revision,
3. Scholarly book (i.e. not text or popular press) chapters,
4. Externally funded grant to support scholarly research to a funding organization outside of Pamplin.
5. Publication of a full paper in refereed conference proceedings,
6. Presentation at a major refereed national or international conference for the discipline,
7. Service as an editor, associate editor or member of an editorial board, or at least six ad hoc reviews for journals considered high quality and impactful by the academic department.

Editorships, book reviews, editorials, and activities in academic societies are encouraged but will not normally be sufficient to count as activities toward maintaining Scholarly Academic status.



## **Appendix 4 Target Schools for Ph.D. Placement**

As a basis for evaluating the placement success of the College's doctoral programs, the business schools in the following list have been identified as targets reflecting placements in strong research-oriented business schools. The metric used for the evaluation will be the proportion of each department's placements in these business schools.

The schools were identified using the following process:

1. A superset was constructed including all schools in:
  - a. Business Week Undergraduate ranking for 2013 (124 schools);
  - b. US News Undergraduate business ranking for 2013 (a total of 117 schools rated #1 to #101);
  - c. Business Week MBA ranking for 2013 (58 US programs);
  - d. UTD research ranking (North American ranking for those schools, worldwide ranking for schools outside North America) including top 75;
  - e. Financial Times research component ranking (global ranking) including top 75.
2. A composite rank was calculated for each school as the lowest numerical rank (thus the most optimistic rank) of the five indices.
3. The Carnegie classification of all the US schools included in these lists was tabulated. The list was culled to include only RU/VH (Research University/ Very High Research Activity) and RU/H (Research University/High Research Activity) universities.
4. Within Carnegie classification the schools were ordered by composite rank.
5. For Canadian schools, no Carnegie classification was available but all the universities with which the schools were associated were classed as comprehensive (thus having substantial research activity) and had a research ranking by FT in the top 75 globally.
6. The list of target schools was then identified as: 1) Carnegie RU/VH schools with composite rank up to 75, 2) Carnegie RU/H schools with composite rank up to 50, and 3) schools outside North America with Financial Times research ranking up to 75.

The list includes 98 schools from the US and Canada, and an additional 26 from outside North America. This list will be reviewed annually with any proposed changes approved by the Dean.

**Table 1: Target Ph.D. Placement School List**

North American Schools (See Table 2 for list in alphabetical order)

<b>University</b>	<b>Min Rank</b>	<b>Carnegie</b>	<b>BW U/G</b>	<b>US News</b>	<b>BW MBA</b>	<b>UTD</b>	<b>FT Res</b>
Pennsylvania (Wharton)	1	1	5	1	3	1	2
Notre Dame (Mendoza)	1	1	1	10	20	43	
Chicago (Booth)	1	1			1	9	7
Harvard	1	1			2	2	1
Michigan - Ann Arbor (Ross)	2	1	8	2	8	4	13
MIT (Sloan)	2	1	19	2	9	8	4
UC - Berkeley (Haas)	2	1	11	2	14	24	6
Virginia (McIntire)	2	1	2	5		74	
NYU (Stern)	3	1	14	5	16	3	3
Cornell (Dyson)	3	1	3	10			
Northwestern (Kellogg)	3	1			5	7	3
Washington U. - St. Louis (Olin)	4	1	4	13	31	23	17
Stanford	4	1			4	11	10
Texas - Austin (McCombs)	5	1	9	8	19	5	13
Duke (Fuqua)	5	1			6	13	5
Maryland College Park	6	1		18	24	6	24
North Carolina - Chapel Hill (Kenan Flagler)	7	1	10	7	17	14	10
Emory (Goizueta)	7	1	7	13	22	28	36
Cornell (Johnson)	7	1			7	33	36
Columbia	7	1			13	12	7
Carnegie Mellon (Tepper)	8	1	24	8	11	29	42
Toronto	9					18	9
Indiana (Kelley)	10	1	13	10	15	22	17
USC ( Marshall)	10	1	31	13	28	10	28
Virginia (Darden)	10	1			10	72	48

Dartmouth (Tuck)	12	1			12	50	
Minnesota (Carlson)	15	1	39	18	35	15	28
Georgetown (McDonough)	16	1	16	16	30	57	33
Illinois - Urbana-Champaign	16	1	21	16	40	21	36
Ohio State (Fisher)	17	1	34	18	27	17	17
UC - San Diego (Rady)	17	1		58		69	17
Wisconsin – Madison	18	1	32	18	33	51	65
UCLA (Anderson)	18	1			18	20	
Penn State - University Park (Smeal)	19	1	26	22	38	19	40
Yale	21	1			21	34	23
Arizona (Eller)	22	1	50	22		48	
Purdue (Krannert)	22	1	58	22	41	37	
U. of Washington (Foster)	22	1	48	22	37	31	
Georgia Tech (Scheller)	23	1	41	27	23	26	28
Boston U.	23	1	23	43	39	52	
University of British Columbia	24					25	24
Vanderbilt (Owen)	25	1			25	71	
Texas A & M (Mays)	26	1	33	27	26	32	42
Arizona State (Carey)	27	1	77	27	49	27	42
Florida (Warrington)	27	1	37	27	47	35	
Georgia (Terry)	27	1	44	27	52	40	
Michigan State (Broad)	27	1	43	27	36	30	42
California - Irvine (Merage)	28	1			43	45	28
Rice (Jones)	33	1			34	53	33
York	33					57	33
Case Western (Weatherhead)	34	1	69	34			
Iowa (Tippie)	34	1	100	34	53	62	
Colorado - Boulder (Leeds)	38	1	101	38		63	
George Washington	38	1	71	38		66	74
South Carolina (Moore)	38	1	87	38		38	
Pittsburgh (Katz)	39	1	82	47		39	54

Georgia State	41	1		47		41	
McGill	42					42	48
Tulane (Freeman)	43	1	49	43			74
Virginia Tech (Pamplin)	43	1	52	43			
Rochester (Simon)	44	1			50	44	
Massachusetts - Amherst (Isenberg)	45	1	45	58			
Connecticut	46	1	54	47		46	
Arkansas - Fayetteville (Walton)	47	1	105	47		64	
Oklahoma (Price)	47	1	88	47			
Oregon (Lundquist)	47	1	107	47		75	
Rensselaer Polytechnic Institute	47	1		47			
Utah (Eccles)	47	1	117	47		47	
Western Ontario (Ivey)	48					55	48
Alberta	49					49	
Houston (Bauer)	54	1	103	101		54	
Missouri - Columbia (Trulaske)	56	1	78	58	56		
U. of Miami	56	1	70	72		56	
Buffalo	57	1	112	86	57	73	
CUNY – Baruch	58	1		58		59	
Kansas - Lawrence	58	1	110	58			
Kentucky (Gatton)	58	1	122	58			
Tennessee - Knoxville	59	1			59		
Rutgers - New Brunswick	61	1	81	101	61	67	
UC – Davis	61	1				61	
North Carolina State (Poole)	63	1	95	72	63		
HEC Montreal	70					70	
California - Riverside	72	1	124	72			
Florida State	72	1		72			
Illinois - Chicago	72	1		72			
Louisiana State (Ourso)	72	1	118	72			
Nebraska	72	1		72			

Boston College (Carroll)	6	2	6	22	48	36	36
Brigham Young (Marriott)	12	2	12	27	32	68	71
Texas - Dallas (Jindal)	16	2	75	101		16	
Wake Forest	18	2	18	34	44		83
Miami U. (Farmer)	22	2	22	47			
Northeastern (D'Amore-McKim)	25	2	25	72	51		
William & Mary (Mason)	27	2	27	38			
Southern Methodist (Cox)	29	2	30	38	29	60	
Lehigh	35	2	35	86			
Fordham (Gabelli)	40	2	40	86			
Syracuse (Whitman)	43	2	72	43	55		

Schools Outside North America

London Business School						24	17
Insead						14	24
Rotterdam School of Mgt (Erasmus)						37	28
Imperial College Business School							40
Hong Kong UST							51
HEC – Paris							51
Iese Business School - Spain							54
Oxford (Said)							54
Warwick Business School							54
National University of Singapore						47	54
City University (Cass) - London, UK							54
Melbourne Business School						70	54
University of Bath Sch of Mgt							54
Cambridge (Judge)							63
European Sch of Mgt and Tech - Germany							63
Hong Kong						66	65
Indian School of Business							65
Nanyang Business School - Singapore						63	65
Australian Graduate School of Mgt							65
Mannheim Business School							65
SCA Bocconi - Italy							71
Tilburg University - Netherlands						32	71
IMD – Switzerland							74
IE Business School – Spain							74
Ceibs – China							74
University College Dublin (Smurfit)							74

**Table 2: Target Ph.D. Placement School List (Alphabetical)**

North American Schools

<b>University</b>	<b>Min Rank</b>	<b>Carnegie</b>	<b>BW U/G</b>	<b>US News</b>	<b>BW MBA</b>	<b>UTD</b>	<b>FT Res</b>
Alberta	49					49	
Arizona (Eller)	22	1	50	22		48	
Arizona State (Carey)	27	1	77	27	49	27	42
Arkansas - Fayetteville (Walton)	47	1	105	47		64	
Boston College (Carroll)	6	2	6	22	48	36	36
Boston U.	23	1	23	43	39	52	
Brigham Young (Marriott)	12	2	12	27	32	68	71
Buffalo	57	1	112	86	57	73	
California - Irvine (Merage)	28	1			43	45	28
California - Riverside	72	1	124	72			
Carnegie Mellon (Tepper)	8	1	24	8	11	29	42
Case Western (Weatherhead)	34	1	69	34			
Chicago (Booth)	1	1			1	9	7
Colorado - Boulder (Leeds)	38	1	101	38		63	
Columbia	7	1			13	12	7
Connecticut	46	1	54	47		46	
Cornell (Dyson)	3	1	3	10			
Cornell (Johnson)	7	1			7	33	36
CUNY - Baruch	58	1		58		59	
Dartmouth (Tuck)	12	1			12	50	
Duke (Fuqua)	5	1			6	13	5
Emory (Goizueta)	7	1	7	13	22	28	36
Florida (Warrington)	27	1	37	27	47	35	
Florida State	72	1		72			
Fordham (Gabelli)	40	2	40	86			
George Washington	38	1	71	38		66	74

Georgetown (McDonough)	16	1	16	16	30	57	33
Georgia (Terry)	27	1	44	27	52	40	
Georgia State	41	1		47		41	
Georgia Tech (Scheller)	23	1	41	27	23	26	28
Harvard	1	1			2	2	1
HEC Montreal	70					70	
Houston (Bauer)	54	1	103	101		54	
Illinois - Chicago	72	1		72			
Illinois - Urbana-Champaign	16	1	21	16	40	21	36
Indiana (Kelley)	10	1	13	10	15	22	17
Iowa (Tippie)	34	1	100	34	53	62	
Kansas - Lawrence	58	1	110	58			
Kentucky (Gatton)	58	1	122	58			
Lehigh	35	2	35	86			
Louisiana State (Ourso)	72	1	118	72			
Maryland College Park	6	1		18	24	6	24
Massachusetts - Amherst (Isenberg)	45	1	45	58			
McGill	42					42	48
Miami U. (Farmer)	22	2	22	47			
Michigan - Ann Arbor (Ross)	2	1	8	2	8	4	13
Michigan State (Broad)	27	1	43	27	36	30	42
Minnesota (Carlson)	15	1	39	18	35	15	28
Missouri - Columbia (Trulaske)	56	1	78	58	56		
MIT (Sloan)	2	1	19	2	9	8	4
Nebraska	72	1		72			
North Carolina - Chapel Hill (Kenan Flagler)	7	1	10	7	17	14	10
North Carolina State (Poole)	63	1	95	72	63		
Northeastern (D'Amore-McKim)	25	2	25	72	51		
Northwestern (Kellogg)	3	1			5	7	3
Notre Dame (Mendoza)	1	1	1	10	20	43	



NYU (Stern)	3	1	14	5	16	3	3
Ohio State (Fisher)	17	1	34	18	27	17	17
Oklahoma (Price)	47	1	88	47			
Oregon (Lundquist)	47	1	107	47		75	
Penn State - University Park (Smeal)	19	1	26	22	38	19	40
Pennsylvania (Wharton)	1	1	5	1	3	1	2
Pittsburgh (Katz)	39	1	82	47		39	54
Purdue (Krannert)	22	1	58	22	41	37	
Rensselaer Polytechnic Institute	47	1		47			
Rice (Jones)	33	1			34	53	33
Rochester (Simon)	44	1			50	44	
Rutgers - New Brunswick	61	1	81	101	61	67	
South Carolina (Moore)	38	1	87	38		38	
Southern Methodist (Cox)	29	2	30	38	29	60	
Stanford	4	1			4	11	10
Syracuse (Whitman)	43	2	72	43	55		
Tennessee - Knoxville	59	1			59		
Texas - Austin (McCombs)	5	1	9	8	19	5	13
Texas - Dallas (Jindal)	16	2	75	101		16	
Texas A & M (Mays)	26	1	33	27	26	32	42
Toronto	9					18	9
Tulane (Freeman)	43	1	49	43			74
U. of Miami	56	1	70	72		56	
U. of Washington (Foster)	22	1	48	22	37	31	
UC - Berkeley (Haas)	2	1	11	2	14	24	6
UC - Davis	61	1				61	
UC - San Diego (Rady)	17	1		58		69	17
UCLA (Anderson)	18	1			18	20	
University of British Columbia	24					25	24
USC ( Marshall)	10	1	31	13	28	10	28
Utah (Eccles)	47	1	117	47		47	

Vanderbilt (Owen)	25	1			25	71	
Virginia (Darden)	10	1			10	72	48
Virginia (McIntire)	2	1	2	5		74	
Virginia Tech (Pamplin)	43	1	52	43			
Wake Forest	18	2	18	34	44		83
Washington U. - St. Louis (Olin)	4	1	4	13	31	23	17
Western Ontario (Ivey)	48					55	48
William & Mary (Mason)	27	2	27	38			
Wisconsin – Madison	18	1	32	18	33	51	65
Yale	21	1			21	34	23
York	33					57	33

**Appendix 5**  
**University Scorecard for Pamplin College of Business 2016**

(as of 8/29/16)

Virginia Tech - Office of the Senior Vice President and Provost				 3-Year Trend Shows Growth    3-Year Trend Level or Mixed    3-Year Trend Shows Decline				
College Level Scorecard - Pamplin College of Business								
University Scorecard Measures				Performance				
Measure(s)	Metric Definition and Information Sources	University Target Performance	Weblinks to Data Sources	2014	2015	2016		
Learning	Number of graduating undergraduates who participated in research experiences.	Degrees extract and course history files - linked to credit bearing activities.	75% of graduating undergraduates.	<a href="#">IR Long Range Plan Shared Performance Metrics</a>	951 (100%)	1000 (99.9%)	982 (100%)	
	Percent of entering students who attended First-Year Experience courses.	First time freshmen and transfer students in fall and spring census files	80% of first-time students by the 2015-16 AY	<a href="#">IR Long Range Plan Shared Performance Metrics</a>	52.5% (506)	60.9% (583)	59.2% (607)	
	Total degrees awarded by level.	Degrees extract	Within 5% of approved projections (SCHEV 2B), per proposed IPS measure #2	<a href="#">IR Long Range Plan Shared Performance Metrics</a>	1,064 Bachelors 215 Masters 11 Doctoral 1,290 Total	1,142 Bachelors 167 Masters 13 Doctoral 1,322 Total	1,109 Bachelors 167 Masters 8 Doctoral 1,284 Total	
	Underrepresented students entering the freshman class.	Fall census files	Improve on the Fall 2011 baseline	<a href="#">IR Long Range Plan Shared Performance Metrics</a>	81	102	105	
	Degrees awarded to underrepresented students by level.	Degrees extract and student census file	Improve on the AY11-12 baseline	<a href="#">IR Long Range Plan Shared Performance Metrics</a>	86 Bachelors 15 Masters 2 Doctoral 103 Total	102 Bachelors 14 Masters 1 Doctoral 117 Total	90 Bachelors 17 Masters 0 Doctoral 107 Total	
	Graduate enrollment profile - masters, doctoral, and professional.	Fall census files	Grow by 1,000 additional graduate students over the Fall 2011 baseline	<a href="#">IR Long Range Plan Shared Performance Metrics</a>	397 Masters 65 Doctoral 462 Total	330 Masters 59 Doctoral 389 Total	323 Masters 60 Doctoral 383 Total	
	STEM-H degrees awarded.	Degrees extract	95% of In-state STEM-H undergraduate degrees projected in SCHEV 2B	<a href="#">IR Long Range Plan Shared Performance Metrics</a>	N/A	N/A	N/A	
	Student credit hours taught in special sessions	Course files	Increase special session enrollments by 3% annually	<a href="#">IR Long Range Plan Shared Performance Metrics</a>	6,678 Summer '14 625 Winter '14 7,303 Total	5,960 Summer '15 956 Winter '15 6,916 Total	4,932 Summer '16 1,140 Winter '16 6,072 Total	
Discovery	Percent of graduating undergraduates who participated in virtual and/or technology assisted courses.	Degrees extract and course history files - linked to credit bearing activities.	100% of graduating undergraduates.	<a href="#">IR Long Range Plan Shared Performance Metrics</a>	88.2% (839)	91.5% (916)	94.0% (923)	
	Total expenditures in grants and contracts by research domain.	As reported annually to the National Science Foundation	\$680M in annual research expenditures by 2018	<a href="#">IR Long Range Plan Shared Performance Metrics</a>	\$2.8M College \$2.8M Faculty	\$2.7M College \$2.7M Faculty	\$2.7M College \$2.9M Faculty	
	Count and average value of sponsored awards.	As reported in Sponsored Programs datawarehouse dashboard	Average 4% annual growth in number of awards and 5.75% annual growth in average dollar value of awards	<a href="#">IR Long Range Plan Shared Performance Metrics</a>	12 Awards \$213,899 Avg Value	56 Awards \$66,500 Avg Value	6 Awards \$578,616 Avg Value	
	Faculty publications and citations.	Data obtained through Academic Analytics; <i>counts are lagged one year.</i>	Top 1/3 (66th percentile) of Very High Research Public Universities by 2022.	<a href="#">IR Long Range Plan Shared Performance Metrics</a>	Books - 11 Articles - 109 Conf. Proceedings - 1 Citations - 184 in CY2013	Books - 3 Articles - 119 Conf. Proceedings - 15 Citations - 280 in CY2014	Books - 8 Articles - 110 Conf. Proceedings - 48 Citations - 110 in CY2015	
	Faculty awards.	Data obtained through Academic Analytics; <i>counts are lagged one year.</i>	Top 1/3 (66th percentile) of Very High Research Public Universities by 2022.	<a href="#">IR Long Range Plan Shared Performance Metrics</a>	0 Awards for CY2013	3 Awards for CY2014	0 Awards for CY2015	
	Number of post-doctoral appointments reported to National Science Foundation.	As reported annually to the National Science Foundation	Increase by 51% to 317 total positions by 2018	<a href="#">IR Long Range Plan Shared Performance Metrics</a>	0	0	1	
	Industry-funded research expenditures reported to NSF	As reported annually to the National Science Foundation	100% increase between FY2010-11 and FY2017-18	Banner Fund Source Codes: 23380,23381,23387,23396,29697,23390,28396,28399	\$1.09M	\$1.06M	\$1.27M	
	Engagement	Number of graduating undergraduates who have participated in a study abroad experience or foreign language course.	Degrees extracts and course history files	60% of graduating undergraduates.	<a href="#">IR Long Range Plan Shared Performance Metrics</a>	For. Lang. 206 (21.7%) Study Abroad 356 (37.4%)	For. Lang. 217 (21.7%) Study Abroad 418 (41.8%)	For. Lang. 202 (20.6%) Study Abroad 365 (37.2%)
Undergraduate participation in service learning and experiential programs.		Service learning course list provided by the Service Learning Center with enrollments from course files; experiential programs comes from course files	3% annual increase on the FY11-12 baseline through FY17-18	<a href="#">IR Long Range Plan Shared Performance Metrics</a>	Serv. Learn 634 Exp. Learn 989	Serv. Learn 651 Exp. Learn 982	Serv. Learn 816 Exp. Learn 1,051	
Foundation		Diversity of the faculty.	Gender, racial and ethnic profile of the faculty on the faculty census.	Increased gender and racial ethnic diversity in the faculty.	<a href="#">Faculty and Staff Profiles (JRE)</a>	Increase in both racial and gender diversity.	Increase in both racial and gender diversity.	Increase in both racial and gender diversity.