UMBC
USM Strategic Plan
Implementation Narrative
November 2012

As a growing research university focused on national eminence and quality, UMBC strongly endorses the USM strategic plan's goals of increasing college completion and enhancing research and economic competitiveness. As described in the strategic plan, we view academic transformation and careful stewardship of our resources as essential to accomplishing our over-arching goals. In this narrative, we describe recent progress in implementing plans for contributing to USM's strategic goals. It is important to note that this implementation plan depends on the allocation of additional resources from State support and the flexibility to raise tuition rates by more than a nominal amount.

Our central goal is to increase the number of graduates by 75 to 85 in each of the first five fiscal years of implementation. Continuing this trend over the 10 years of the strategic plan will result in an annual increase of over 800 degrees granted by 2020. We will reach this ambitious goal by increasing our graduation rates, the size of our freshman and transfer entering classes, and enrollment in our professional master's programs. To attain these increases we are implementing an integrated set of approaches that support students from enrollment through their graduation. These approaches include increased academic support, increased financial support, programmatic growth, and academic transformation designed to enhance student success.

Increase in degrees awarded

Between fiscal years 2011 and 2012, UMBC made significant strides in degrees awarded, increasing the number of bachelor's degrees awarded by 235 (12.3%,) as well as master's degrees (+23, 4.0%) and post baccalaureate certificates (+26, 20.3%.) The rise in degrees awarded is attributable to increased retention and graduation rates for both new freshmen and new transfer students. For fall cohorts of full-time students, the second-year retention rate for new freshmen increased from 84.6% to 85.1% (F10 vs. F11 cohorts) and the six-year graduation rate increased from 55.5% to 60.6% (F05 vs. F06 cohorts.) Full-time new transfer students exhibited similar trends, with an 82.7% to 84.0% retention-rate increase and a 60.6% to 64.3% graduation-rate increase. Gains were also made in the recruitment of new students, with new freshmen increasing by 9.4% (+134,) new transfers by 6.0% (+77) and new graduate students by 15.9% (+114) between fall 2011 and fall 2012.

UMBC has partnered with Montgomery College, Community College of Baltimore County and Howard Community College to promote and facilitate the reverse awarding of the associate's degree. That is, students who transfer to UMBC from one of these institutions before earning an associate's degree can apply UMBC credits to their associate's requirements and be awarded that degree from their community college. Each semester (beginning in fall 2012) UMBC identifies eligible students and informs them of this opportunity and the importance and value-

added of the associate's degree. As students express interest in being considered for the degree, their records are forwarded to their two-year school to determine their status. For those students just shy of completing the associate's degree requirements, UMBC and the two-year partner work with the student to develop an academic plan which will enable the student to complete the associate's and bachelor's degree at the same time. In its first semester, this program identified 123 eligible students. To date, 19 students have expressed interest and given consent to have their records evaluated, representing a 15% response rate. At the time of this report, degree audits are still in progress.

<u>Increase in academic support</u>

Our focus on academic support begins with the expansion of current programs for first-year students, both freshman and transfer. We have enhanced retention and graduate rates using our Introduction to an Honors University program, First-year Seminars, Supplemental Instruction, bridge programs, the First-year Intervention early warning system, living-learning communities, transfer-student seminars, and pedagogical innovation. First-year programming at UMBC is growing and program evaluation data have been positive. We are moving toward requiring a first-year experience for all incoming students. While some first-year programs are of long standing, others have been piloted and implemented so recently that their effect on retention and graduation cannot be documented, although preliminary qualitative data are positive.

New freshmen enrolled in Introduction to an Honors University (IHU), a semester-long, one-credit, academically linked success course, graduate at a rate 2.2 to 9.8 percentage points higher than non-participants. On average 240 new freshmen enroll in an IHU each fall and additional students enroll in the spring. New freshmen participating in the academic three-credit First-year Seminar (FYS) courses graduate at a rate 1.7 to 10.3 percentage points higher than non-participants. On average, 110 new freshmen enroll in an FYS course each fall and additional students enroll in the spring. Students who participate in Supplemental Instruction (SI) for hard-to-pass courses earn an A, B, or C in the course at a rate four to 17 percentage points greater than students who do not participate in SI. After a two-year introductory period, nearly 700 students participated in SI in AY 2011-2012. Incoming freshmen who enroll in the Collegiate Success Institute (CSI) summer bridge program are retained at a rate 10 to 20 percentage points greater than the average for all incoming fall freshmen in their year. After a pilot year, CSI engaged 116 students in its first four years. The First-year Intervention early-alert system asks professors to identify any first-year students who are in danger of failing their course at a point five weeks into the semester. These students receive an on-line alert about their situation with resources and advice for improving their grade. More than 1,000 student receive an alert each semester and typically more than 50% of these students end the semester with an A, B, C, P, or W in the course. More than 300 new freshmen participate in eight Living-learning Communities (LLC) each fall. A preliminary study shows that the semester and one-year dropout rate for these participants is 13% less than for non-LLC freshmen, when controlling for pre-college characteristics. The new Transfer-student Seminars (TRS) provide academic and programmatic support for incoming transfer students. While still serving fewer

than 100 students per year, TRS is growing in popularity with faculty members and students. An initial student self-assessment of 32 fall 2011 TRS students shows statistically significant positive change on all self-report measures, including directing a study group, preparing an annotated bibliography, locating key offices, identifying opportunities for tutoring and academic assistance, and writing a resume.

Increase in financial support

Given the central role financial aid plays in retention and graduation, our efforts to support first-year students are complemented by significant increases in financial aid, including funds earmarked for need-based financial aid. Beginning in FY2007, UMBC committed to allocate from various revenue sources, including from tuition rate increases, the amount needed to increase the funding base for need-based financial aid annually by the tuition rate increase, plus an additional five percent. Each year UMBC has met or exceeded this commitment. In fact, from FY2007 to FY2012, the need-based funding increased by 110%.

Special attention has been given to supporting senior completion. Since AY 2011-2012 UMBC has allocated funds to support students who 1) have reached senior level standing, 2) are unable to register due to an outstanding balance owed to the university, 3) demonstrate financial need and 4) have exhausted all other funding options. Priority consideration is given to students who have reached senior standing by their seventh term of enrollment, as institutional data suggests that these students are significantly more likely to complete their degree within six years. Thus far, funding in the amount of $13,495 has been awarded to support students in their final year of study.

UMBC offers a range of merit scholarships and scholarship programs, from discipline- specific programs supporting students interested in the arts, humanities, education, public policy, and STEM to general (non-discipline specific) merit awards. In an effort to continue to attract and support the most academically talented and academically prepared students (both new freshmen and new transfers,) UMBC has committed to increase its allocation of merit-based aid. For FY2013, the merit-based allocation was increased by five percent.

Programmatic growth

To provide sufficient infrastructure and capacity to support the referenced increases in enrolled students, we have hired and are hiring additional faculty members in new, strategic, and high student-to-faculty-ratio areas as sociology/anthropology (especially public health), Asian studies, geography and environmental systems, media and communication studies, mathematics education, public policy, and psychology. We increased the number of full-time tenured or tenure track faculty by eight as of fall 2012, and have authorized an additional 18 such positions for fall 2013. Given our relatively limited number of program offerings, we are growing recently introduced academic programs and introducing new academic programs in STEM fields and in arts, humanities, social sciences, as well as professional programs that are critical to economic and workforce development.

Between fall 2011 and fall 2012 the number of undergraduates majoring in Asian studies increased 55% to 34, the number majoring in engineering (including chemical and computer engineering) increased 14% to 844, the number majoring in aging studies increased 15% to 53, and the number majoring in computer science increased 16% to 858. At the graduate level the number majoring in cybersecurity (both master's and post-baccalaureate certificate increased by 72% to 150. To accommodate this growth we have increased funds for classrooms renovations, implementing a classroom renovation plan that includes technology as well as the basic elements such as re-flooring, painting, and replacing furniture, as needed.

Academic transformation

In addition to student support and programmatic growth, we are aggressively pursuing pedagogical innovation and academic transformation. UMBC has a strong tradition of pedagogical innovation with ongoing efforts in Chemistry, Psychology, Mathematics, Physics, and Biology. We are expanding these efforts under the current strategic plan. Based on current initiatives, we will expand the use of active learning models, on-line and hybrid learning courses, and learning software.

UMBC received, in partnership with four community colleges, a $2.6 million grant from the Bill & Melinda Gates Foundation to build a national model for ensuring more transfer students earn degrees in STEM. In addition, UMBC's NSF-funded Innovation through Institutional Integration (I-3) research project investigates several freshman-year intervention techniques designed to increase and enhance the graduation and retention rates in STEM disciplines. Project Redesign applies technological and pedagogical innovations to large lecture courses and gateway courses to increase course efficiency and student learning. Redesigns of PSYC 100 and 200 have results in pass rates of 85% to 95%. Newer redesigns are underway in English 100, SOCY 101, and CHEM 351.

Research and economic competitiveness

As a growing research university, UMBC will play an essential role in supporting the USM's efforts in research and economic competitiveness. To do this, we will provide support for the development of our basic research capacity, will improve our research infrastructure to provide a platform for continued growth in external funding, and will take aggressive steps to commercialize our research results. To develop our basic research, we will create two new research centers (one in life sciences, one in high-performance computing,) create a research "venture fund" to invest in high risk-high reward research innovation, and expand policy research in areas that impact economic development (e.g., health, aging security.) To improve our research infrastructure, we will expand core research facilities, increase research laboratory space, and improve staffing and business systems in areas of financial management, compliance, and grant support. To support the commercialization of our research results, we will strengthen our technology transfer capability by investing in marketing resources, proof-of-concept studies, and intellectual property protection. We will also enhance our support of

fledgling start-ups by providing operating support for incubators in cyber-security and clean energy, as well as for programs designed to support entrepreneurs from under-represented minority groups.

We have improved UMBC's physical research infrastructure through the development of our Molecular Characterization and Analysis Complex (MCAC) core facility and the joint establishment (with UMB) of a functional magnetic resonance imaging (fMRI) facility, including major equipment purchases, building construction, and staffing. From an organizational perspective, we have established the UMBC Center for Cybersecurity and are investing in areas of interdisciplinary research. Our commercialization activities have accelerated, with license agreements tripling from FY2011 to FY2012. Our capacity to administer and advance research has increased commensurately, with Office of Research Administration tripling its staff from eight to 21 in the past six years.

<u>Budget implications</u>

We are pursuing all of these efforts with a specific focus on reducing per-unit costs and increasing revenue from non-State sources, in addition to relying on additional support from the State. On the cost side, our goals are to use our academic transformation efforts to reduce systematically per-student instructional costs and to build on our prior efforts to reduce administrative costs in information technology. On the revenue side, we will build on our current efforts to expand our donor base and our outreach to alumni. We anticipate that these efforts will provide significant resources to support our goals of increased college completion and research/economic development.

Given limited growth in public resources, support from individual donors, corporations, and foundations has figured significantly in UMBC's efforts. Specifically, private donor funding has contributed to UMBC's efforts by underwriting need and merit-based aid, providing resources to transform classrooms and active learning spaces, ensuring seed funds for First-year Seminars and other student success activities, and leveraging institutional resources for course redesign activities. This has included more than $150,000 in private donor support to develop Retriever Learning Center, $1,000,000 for Cyberscholars program, and $300,000 from Science Applications International Corporation (SAIC) for the College of Natural and Mathematical Sciences Active Science Teaching and Learning Environment (CASTLE.)

Annual increments above a Current Services Budget, growing from $5M in FY2012 to $6.6M in FY2016, will be needed to invest in expanded and new programs, and faculty and staff positions to support this aggressive effort. We are proposing an annual increase in our UG resident tuition rate of seven percent, which includes four percent to cover the CSB, and three percent to fund the improvements outlined in the above narrative. We stand ready to respond to the new opportunities and challenges envisioned in the USM Strategic Plan, and fully understand that we will need to adjust our goals as necessary given fiscal realities as they occur in the coming years.