UNIVERSITY SYSTEM of MARYLAND

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Board of Regents
Committee on Education Policy and Student Life

Friday, March 6, 2020
9:30 a.m.

University of Maryland Global Campus
College Park Marriott Hotel & Conference Center
3501 University Boulevard East ~ Hyattsville, MD 20783
Chesapeake Ballroom Salon A (*Location Updated on 3.2.20)

Action Items

1. New Academic Program Proposals
    a. University of Maryland, College Park
        i. Bachelor of Science in Biocomputational Engineering
        ii. Master of Arts in International Relations
        iii. Master of Science in Applied Political Analytics

Information Items

2. Update: P-20 Initiatives
3. Update on the USM New Student Enrollment Pipeline and Aggregate Student Success; USM-Wide Student Success Initiatives
4. Crisis Management and Enterprise Risk Management in the USM

Action Item

5. Motion to Adjourn

UNIVERSITY SYSTEM of MARYLAND

BOARD OF REGENTS
SUMMARY OF ITEM FOR ACTION, INFORMATION, OR DISCUSSION

TOPIC: University of Maryland, College Park: Bachelor of Science in Biocomputational Engineering

COMMITTEE: Education Policy and Student Life

DATE OF COMMITTEE MEETING: Friday, March 6, 2020

SUMMARY: The University of Maryland, College Park (UMD) proposes to establish a Bachelor of Science in Biocomputational Engineering. The program will produce graduates with a foundation in bioengineering and quantitative data science, either for employment or for pursuing advanced degree programs. Biocomputational engineering brings together the field of bioengineering, a discipline grounded in the fundamentals of physics, chemistry, and biology, with computation and data science, which enhances the value of all fields. The objective of the biocomputational engineering program is to provide a breadth of fundamentals in biology and quantitative problem solving while developing skills in computation and data science. Skills such as modeling complex biological systems and the analysis of complex biological data sets can lead to the creation of new knowledge, from the molecular to the organ to the system levels, as well as the development of innovative processes for the prevention, diagnosis, and treatment of disease.

This program will be offered at the Universities at Shady Grove and is mainly intended for students who have completed an associate's degree from a Maryland public community college. The program will allow them to complete their baccalaureate degree in two years.

The program will offer courses at the 300- and 400-level, which constitute the junior and senior years of the program. The curriculum will require 48 credits of core courses and 12 credits of program-specific electives.

ALTERNATIVE(S): The Regents may not approve the program or may request further information.

FISCAL IMPACT: No additional funds are required. The program can be supported by the projected tuition and fees revenue.

CHANCELLOR'S RECOMMENDATION: That the Committee on Education Policy and Student Life recommend that the Board of Regents approve the proposal from the University of Maryland, College Park to offer the Bachelor of Science in Biocomputational Engineering.

COMMITTEE RECOMMENDATION:		DATE:
BOARD ACTION:		DATE:
SUBMITTED BY: Joann A. Boughman	301-445-1992	jboughman@usmd.edu

UNIVERSITY OF MARYLAND
OFFICE OF THE PRESIDENT

Main Administration Building
College Park, Maryland 20742
301.405.5803 TEL 301.314.9560 FAX

February 3, 2020

Chancellor Jay A. Perman
University System of Maryland
3300 Metzerott Road
Adelphi, MD 20783

Dear Chancellor Perman:

I am writing to request approval for a new Bachelor of Science program in Biocomputational Engineering. The proposal for the new program is attached. I am also submitting this proposal to the Maryland Higher Education Commission for approval.

The proposal was endorsed by the appropriate faculty and administrative committees. I also endorse this proposal and am pleased to submit it for your approval.

Sincerely,

Wallace D. Loh
President

MDC
cc: Antoinette Coleman, Associate Vice Chancellor for Academic Affairs
Mary Ann Rankin, Senior Vice President and Provost
Darryll Pines, Dean, A. James Clark School of Engineering

UNIVERSITY SYSTEM OF MARYLAND INSTITUTION PROPOSAL FOR

x	New Instructional Program
	Substantial Expansion/Major Modification
	Cooperative Degree Program
	Within Existing Resources, or
	Requiring New Resources

University of Maryland, College Park
Institution Submitting Proposal

Biocomputational Engineering
Title of Proposed Program

Bachelor of Science	**Fall 2021**
Award to be Offered	Projected Implementation Date
090500	**14.4501**
Proposed HEGIS Code	Proposed CIP Code
Fischell Department of Bioengineering	Ian White
Department in which program will be located	Department Contact
301-405-6230	ianwhite@umd.edu
Contact Phone Number	Contact E-Mail Address
Signature of President or Designee	February 3, 2020
	Date

A. Centrality to the University's Mission and Planning Priorities

Description. The fields of Biomedical Engineering and Bioengineering are impacting our society by delivering new imaging and diagnostics technologies, new therapeutic delivery methods, and the possibility of new methods for the repair or construction of tissues and organs. At the same time, computational methods and data science are perfusing into every field of engineering, as well as the life sciences, economics, law, and others. The proposed program aims to provide its students with a foundational breadth in computational bioengineering, which includes strong fundamentals in biology, combined with quantitative problem-solving skills. In addition, the program aims to equip its students with applicable skills in data science to position them to contribute to the fields of bioengineering, the biological sciences, and medicine beyond the capabilities of bioengineering and biomedical engineering graduates. As a result, graduates will be well-positioned for rewarding careers while also providing a workforce that will fill needs within the state of Maryland.

A key aspect of the mission of the University of Maryland College Park (UMD) for undergraduate education is that, *"The University will continue to elevate the quality and accessibility of undergraduate education, with programs that are comprehensive and challenging, and that serve students well as a foundation for the workplace, advanced study, and a productive, fulfilling life."* Aligned with this, our program seeks to produce graduates with the preparative foundation in bioengineering and quantitative data science, either for employment or for pursuit of advanced degree educational programs. The University's detailed mission statement continues, focusing on a commitment to *"foster education, critical thinking and intellectual growth, ensuring the knowledge and impact of our graduates are both robust and sustainable."* This aligns closely with our aim to produce graduates with awareness of their field and an understanding of how they can utilize their unique skill sets in bioengineering and data science to address challenges facing society in both the near and long term.

Relation to Strategic Goals. The proposed major in Biocomputational Engineering (ENBC) relates to UMD's strategic goals by adding to its STEM program offerings, most specifically at the Universities at Shady Grove (USG). UMD states the following undergraduate education objective in its *Mission and Goals Statement*: "Increase the number of STEM graduates by creating new programs."

The ENBC program is one of several UMD programs planned for delivery specifically at the Universities at Shady Grove to contribute to workforce development in the state and most specifically in the Montgomery County region, taking advantage of the robust partnership with Montgomery College. USG's mission is *"to support and expand pathways to affordable, high-quality public higher education that meet the distinctive needs of the region and are designed to support workforce and economic development in the state; to achieve these goals through partnerships and collaborations with academic, business, public sector and community organizations that promote student success, high academic achievement and professional advancement.*" This program contributes directly to the goals of access and affordability, to high quality programming, and to regional and state capacity building, as articulated in USG mission statement.

Funding. Resources for the new program will be drawn from the University System of Maryland's Workforce Development Initiative that was approved by the State Legislature beginning in FY19. Funds were specifically directed to increasing the number of undergraduate degree offerings in STEM areas at the Universities at Shady Grove.

Institutional Commitment. The program will be administered by the Department of Bioengineering within the A. James Clark School of Engineering. Each of UMD's USG programs has an on-site program director. In addition, two staff members are currently in residence at USG to support the program directors in admissions decisions and to provide academic operational support such as recruiting, outreach to community colleges, access to training, and to act as a liaison to academic services on the College Park campus. The University of Maryland (UMD) is also the managing institution for USG, and in that role supports many administrative services for the operation of USG.

B. Critical and Compelling Regional or Statewide Need as Identified in the State Plan

Need. Bioengineering is a growing field, and one that will have a significant impact on society. A need exists for graduates trained in the fundamentals of engineering and life sciences with strong skills in computational methods and data science. A survey of the Bioengineering department's External Advisory Board demonstrated significant enthusiasm for the program's goals of generating graduates with knowledge of life sciences, engineering, programming, and computation. The advisory board rated the demand for these graduates at a score of 4.67 out of 5. The advisory board also emphasized that the Biopharmaceutical industry (which has a strong base in Maryland), the Biomedical Instrumentation industry, and hospitals and insurance companies are currently targeting employees with this skill set.

In recent years the Bioengineering program at UMD has placed about 30% of its graduates into graduate programs, and about 50-60% of its graduates into industry, including biopharmaceutical, biomedical instrumentation, and consulting jobs; nearly all graduates are placed before their graduation day. However, the department's advisory board has communicated that there are additional jobs to be filled, with an emphasis on programming, computation, and data analysis that goes beyond the capabilities of the department's graduates. While graduates in computer science are considered for these jobs, employers in the biopharma and biomedical space prefer multi-disciplinary talents, including fundamental knowledge in life sciences.

While a new program could be launched on the College Park campus, we are proposing to launch the program at USG specifically to target the talented pool of students who complete an engineering program at a community college and aim to work in the biopharma and biomedical industries. By attracting this population into the field, the proposed program will contribute strongly to the diversity of their employers, which are generally hiring from degree programs lacking in diversity.

State Plan. The proposed program aligns with the *Maryland State Plan for Postsecondary Education* in different ways. First, the program aligns with the state's emphasis on career training and research. Strategy 7 of the *Maryland State Plan* is "Enhance career advising and

planning services and integrate them explicitly into academic advising and planning."[1] Career advising will not only be integrated with student advising, it will also be incorporated in the program coursework. All of the core courses for the program will help students achieve this outcome

C. Quantifiable and Reliable Evidence and Documentation of Market Supply and Demand in the Region and State

Analysis of job outlook data from Emsi (https://www.economicmodeling.com/data/) has projected job trends in the field of bioinformatics in the MD/VA/DC region. Note that in the proposed program we use the term "bioinformatics" specifically to imply the analysis of genomic and proteomic data; however, the term is frequently used to describe more generally information science, data analysis, and computation as applied to the life sciences. The analysis suggests that in Maryland, bioinformatics jobs will increase from about 60,000 to about 70,000 between 2018 and 2028, a 16% change (it predicts a 7% regional change and a 16% national change over the same period). Note that this analysis does not include the expected Amazon headquarters in Northern Virginia.

The Emsi report cites Booz Allen Hamilton, Leidos Holdings, and Oracle as likely employers. In addition to Amazon, the department's External Advisory Board has identified the following as employers for the graduates of the proposed program: Becton Dickinson (BD), Roche, Abbott, Beckman, Siemens, GE, Amgen, Kite Pharma, Edwards Life Sciences, numerous hospitals and insurance companies, and most biopharmaceutical companies. In addition, federal and federally-supported laboratories, including NIH, FDA, NRL, NIST, and APL are in need of employees with computational skills and fundamentals in life science and engineering.

D. Reasonableness of Program Duplication

Most closely related to the proposed Biocomputational Engineering program is the Bioengineering program that already exists at College Park (and exists within the same Bioengineering Department as the proposed program). The first half of the program is almost the same, but the second half of the programs differ significantly. The proposed program offers opportunities for training in programming, computational methods, and data science that go well beyond that of a "track" or "specialization." Thus, the graduates from the proposed program would be unique in the Clark School.

Bowie State University offers a Bioinformatics degree that has similarities to the proposed program, including the opportunity for training in both the life sciences and computer programming. At the same time, UMGC offers a degree in Biotechnology, while UMBC offers a degree in Translational Life Science Technology at Shady Grove. Some overlap will exist in the skill sets between these graduates and graduates from the proposed program. However, the key

[1] Maryland Higher Education Commission. (2017). *Maryland State Plan for Postsecondary Education.* (p. 60). Retrieved October 29, 2018 from: http://www.mhec.state.md.us/About/Documents/2017.2021%20Maryland%20State%20Plan%20for%20Higher%20Education.pdf.

difference is that the proposed program is an engineering degree, and thus will emphasize an engineering approach to problem solving above all else.

E . Relevance to Historically Black Institutions (HBIs)

Currently no HBIs offer similar undergraduate programs with the exception of Bowie State University's Bioinformatics program mentioned above. In addition to the aforementioned differences, USG has a regional draw that is rather specific to Central Maryland because of the lack of on-site housing for students. Thus, there is not likely to be much overlap in the student populations. Morgan State University offers a Master's program in Bioinformatics, and as a result the program proposed here might serve as a feeder.

F. Relevance to the identity of Historically Black Institutions (HBIs)

The proposed program would not have an impact on the uniqueness or institutional identity of any Maryland HBI, since this program would be a unique offering in the state.

G. Adequacy of Curriculum Design, Program Modality, and Related Learning Outcomes

Curricular Development. The curriculum was developed by faculty of Bioengineering department. All of the undergraduate programs within the A. James Clark School of Engineering are "limited enrollment programs", due to high demand and finite capacity.

The program will be offered exclusively at the Universities at Shady Grove. All undergraduate programs at USG are years 3 and 4 only. Expectations for lower-level coursework will be established through articulation agreements with the Maryland community colleges or taken at College Park prior to admission to the School of Engineering and the major. The proposed curriculum will offer courses at the 300- and 400-level, which constitute the junior and senior year of the program. The program is primarily intended for students transferring from a Maryland public community college. While students at the College Park campus can pursue the program, they will not be able to seek admission into the School of Engineering and the Biocomputational Engineering major until they have completed the Engineering Limited Enrollment Program (LEP) gateway courses, required prior study major courses, lower-level General Education requirements (or an Associate's Degree), and have earned at least 60 credits. Due to the similarity in curriculum content and the physical location of course offerings, students in the Bioengineering program at UMD will not be eligible to add Biocomputational Engineering as a second major or degree (and vice versa).

Faculty Oversight. The faculty within the department of Bioengineering will provide academic direction and oversight for the program. Appendix A contains a list of the BIOE tenured and tenure-track faculty.

Educational Objectives and Learning Outcomes. The educational objectives of the program including the following:

1. Produce graduates with the educational depth, technical skills, and practical experiences to be competitive for placement in Biocomputational Engineering careers or post-graduate educational pursuits;

2. Produce graduates with an awareness of their field and an understanding of how they can address the data-driven computational biomedical challenges facing society in both the near and long term;

3. Produce graduates with a foundation in professional ethics who will actively seek to positively impact their profession, community, and society.

The student learning outcomes are aligned with the outcomes assessed in accordance with the Accreditation Board for Engineering and Technology (ABET) accreditation requirements and include the following. The program must enable students to attain, by the time of graduation:

1. An ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics.
2. An ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors.
3. An ability to communicate effectively with a range of audiences.
4. An ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts.
5. An ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives.
6. An ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions.
7. An ability to acquire and apply new knowledge as needed, using appropriate learning strategies.

Institutional assessment and documentation of learning outcomes. Each learning outcome is mapped to one or more courses in the program for assessment. Each course will be assessed once every three years (i.e., twice per ABET cycle) to determine whether the program is achieving each outcome; at least one course will be assessed every year. The assessment will be conducted by the instructor; the instructor will then submit the assessment to the Bioengineering department's Undergraduate Studies Committee. This committee will provide recommendations for modifications to the instructor. The assessment reports follow a template developed by the department.

In addition to the course assessment process, a senior exit survey will be conducted prior to graduation every year. Students will be asked to assess their capabilities related to the seven learning outcomes above. These results will be reviewed by the Undergraduate Studies Committee and recommendations for improvements to the curriculum will be provided to the program's Director as needed.

Course requirements.

FIRST & SECOND YEAR

Prior to being admitted to the Biocomputational Engineering major, students should have completed the Engineering LEP gateway courses, basic math/science courses, and lower-level General Education requirements. Below is the representative set of requirements; specific articulation agreements will be established with each of the local community colleges.

Course	**Title**	**Cr**
ENGL 101	Academic Writing	3
MATH 140	Calculus I	4
MATH 141	Calculus II	4
MATH 241	Calculus III	4
MATH 246	Differential Equations for Scientists and Engineers	3
CHEM 135/136	General Chemistry for Engineers (plus lab)	4
CHEM 231/232	Organic Chemistry (plus Laboratory)	4
PHYS 161	General Physics: Mechanics and Particle Dynamics	3
PHYS 260/261	General Physics: Vibration, Waves, Heat, Electricity and Magnetism (plus Laboratory)	4
ENES 100	Introduction to Engineering Design	3
BSCI 170 OR BIOE 120	Principles of Molecular & Cellular Biology OR Biology for Engineers	3
BIOE 241	Matlab Programming Course (or equivalent)	3
GenEd Courses	General Education Requirements	18
	Total Credits	**60**

JUNIOR & SENIOR YEARS AT SHADY GROVE

Junior Year 1st Semester

Course	**Title**	**Cr**
ENBC 301	Introduction to Biocomputational Engineering	1
ENBC 311	Python for Data Analysis	3
ENBC 331	Applied Linear Systems and Differential Equations	3
ENBC 332	Statistics, Data Analysis, and Data Visualization	3
ENBC 341	Biomolecular Engineering	3
ENBC 351	Quantitative Molecular and Cell Biology	3
	Total Semester Credits	**16**

Junior Year 2nd Semester

Course	Title	Cr
ENBC 312	Object Oriented Programming in C++	3
ENBC 322	Algorithms	3
ENBC 342	Computational Fluid Dynamics and Mass Transfer	3
ENBC 352	Molecular Techniques Laboratory	2
	Elective	3
	Total Semester Credits	**14**

Senior Year 1st Semester

Course	Title	Cr
ENBC 321	Machine Learning for Data Analysis	3
ENBC 353	Synthetic Biology	3
ENBC 431	Finite Element Analysis	3
ENGL 393	Professional Writing	3
	Elective	3
	Total Semester Credits	**15**

Senior Year 2nd Semester

Course	Title	Cr
ENBC 425	Imaging and Image Processing	3
ENBC 441	Computational Systems Biology	3
ENBC 491	Senior Capstone Design in Biocomputational Engineering	3
	Two Electives	6
	Total Semester Credits	**15**

TOTAL DEGREE CREDITS	**120**

Students are required to take four technical electives. The courses must be selected from an approved list of engineering and biology courses; the list will be updated regularly by the Program Director. At least two of the elective courses must be from the category of engineering, mathematics, or programming, while at most two of the electives can be from the category of biology courses. The program will offer electives; at the same time, the program will arrange for opportunities for electives outside the program, including USG programs offered by other universities.

See Appendix B for course descriptions.

General Education. Students will complete their science and mathematics general education requirements by way of fulfilling major requirements. Students who transfer to UMD with an Associate's degree from a Maryland community college are deemed to have completed their General Education requirements with the exception of Professional Writing, which is typically taken in their third year of study.

Accreditation or Certification Requirements. As with other undergraduate Engineering degree programs at UMD, the Clark School of Engineering will seek to have this program accredited by the Accreditation Board of Engineering and Technology (ABET).

Other Institutions or Organizations. The department will not contract with another institution or non-collegiate organization for this program.
Student Support. To fully serve the academic and support needs of the Biocomputational Engineering students, the program will employ one full-time academic advisor at Shady Grove. Anticipating student growth, additional part-time or full-time advisors will be needed in subsequent years. All academic advisors will report directly to the Fischell Department of Bioengineering Associate Director of Academic and Student Affairs. Academic advisors at Shady Grove will manage course scheduling, perform academic advising each semester, track degree requirements, and provide academic and support resources when appropriate. The academic advising team will also assist in outreach efforts and building a strong community among prospective and current students. Additionally, the Biocomputational Engineering major will identify a Faculty Program Director who will reside at Shady Grove at least two days per week. The Faculty Program Director will work closely with the UMD liaisons as well as all tenure-track (TTK) and professional-track (PTK) faculty in addressing student and instructor concerns, developing electives, and performing assessment measures.
Additional services are provided for all programs at the Universities at Shady Grove through USG's Center for Academic Success.

Marketing and Admissions Information. The department will produce marketing materials and will conduct recruitment events at various times in the year. Admissions will be administered by UMD's Undergraduate Admissions Shady Grove Coordinator and the Biocomputational Engineering Program Director. Following procedures previously established at the Universities at Shady Grove, the Clark School's Assistant Director of Transfer Student Advising and Admissions will review the accepted Biocomputational Engineering cohort to ensure all students meet the Clark School's LEP admission criteria. It is expected that admissions will require only a minimal burden upon the Clark School staff and the Fischell Department of Bioengineering staff.

H. Adequacy of Articulation

Montgomery College is expected to be the largest feeder, although students who have completed two years in any engineering program in a Maryland Community College will be eligible for admission provided they meet the program's eligibility requirements. The Clark School's requirements for transfer students are articulated with the Montgomery College Associate of Science in Engineering. Montgomery College students can enter the program upon completing the Bioengineering focus at Montgomery College with a few substitutions that will be communicated between the Bioengineering Department and Montgomery College. The pathway to articulation into the current Bioengineering degree is articulated through Montgomery College's Associate of Science in Engineering, Bioengineering. In addition to the community college population, current students within the Clark School of Engineering are eligible to change majors into the Biocomputational Engineering Program; in particular, students from the Bioengineering major will meet the requirements upon completion of the sophomore year.

I. Adequacy of Faculty Resources

Program faculty. Appendix A contains a full list of Bioengineering department faculty. It is expected that two TTK faculty and four PTK lecturers will represent the program at USG. This is sufficient to provide 8 courses per semester, which enables coverage of all of the planned ENBC courses (the program requires sixteen ENBC courses, but three of those are 1 credit only). Adjunct faculty may also be contracted to cover courses as needed. Class sizes are expected to be on the order of 30 students, and thus teaching assistants will not be needed. Undergraduate Teaching Fellows (senior students in the program) will be used to support courses when possible.

Faculty training. All faculty will receive guidance from the Bioengineering Department, which considers teaching to be critical to the success of its program. For the learning management system, faculty teaching in this program will have access to instructional development opportunities available across the College Park campus, including those offered as part of the Teaching and Learning Transformation Center. For online elements of the coursework, instructors will work with the learning design specialists on campus to incorporate best practices when teaching in the online environment.

J. Adequacy of Library Resources

The University of Maryland Libraries has conducted an assessment of library resources required for this program. The assessment concluded that the University Libraries are able to meet, with its current resources, the curricular and research needs of the program. Resources are available locally at USG's Priddy Library as well as on the College Park campus.

K. Adequacy of Physical Facilities, Infrastructure, and Instructional Resources

The program will be delivered in the new Biomedical Sciences and Engineering Education (BSE) building (also called Building IV) at the Universities at Shady Grove. This state-of-the-art educational facility has a suite of shared active-learning classrooms, computing resources, wet labs, a dental clinic, product design laboratory and maker space, as well as offices for faculty and staff delivering the curricula and student support services. The ENBC program expects to have 1-2 dedicated laboratory spaces for its programmatic needs.

L. Adequacy of Financial Resources

Resources for the program will come from tuition revenue and from the Governor's Workforce Development Initiative funds that were specifically directed towards implementation of STEM degree programs at the Universities at Shady Grove. Students in this program will represent new enrollment at UMD the tuition revenue associated with this enrollment will be directed towards program needs. Tuition revenue alone is not adequate to support the program; UMD, USG and USM have articulated a memorandum of understanding to maintain funding for the program, beyond revenue expected from tuition. See Tables 1 and 2 for anticipated resources and expenditures.

M. Adequacy of Program Evaluation

Formal program review is carried out according to the University of Maryland's policy for Periodic Review of Academic Units, which includes a review of the academic programs offered by, and the research and administration of, the academic unit (http://www.president.umd.edu/policies/2014-i-600a.html). Program Review is also monitored following the guidelines of the campus-wide cycle of Learning Outcomes Assessment (https://www.irpa.umd.edu/Assessment/LOA.html). Faculty within the department are reviewed according to the University's Policy on Periodic Evaluation of Faculty Performance (http://www.president.umd.edu/policies/2014-ii-120a.html). Since 2005, the University has used an online course evaluation instrument that standardizes course evaluations across campus. The course evaluation has standard, university-wide questions and also allows for supplemental, specialized questions from the academic unit offering the course.

N. Consistency with Minority Student Achievement goals

An important aspect of this program is to draw upon students in the community colleges, which have traditionally large numbers of African and Latino Americans, and thereby improving the numbers of underrepresented minorities in STEM education. This will be a factor in student recruitment.

O. Relationship to Low Productivity Programs Identified by the Commission

N/A

P. Adequacy of Distance Education Programs

N/A

Tables 1 and 2: Resources and Expenditures

TABLE 1: RESOURCES

Resources Categories	Year 1	Year 2	Year 3	Year 4	Year 5
1.Reallocated Funds	$0	$0	$0	$0	$0
2. Tuition/Fee Revenue (c+g below)	$233,600	$481,216	$867,392	$1,021,044	$1,051,675
a. #FT Students	20	40	70	80	80
b. Annual Tuition/Fee Rate	$11,680	$12,030	$12,391	$12,763	$13,146
c. Annual FT Revenue (a x b)	$233,600	$481,216	$867,392	$1,021,044	$1,051,675
d. # PT Students	0	0	0	0	0
e. Credit Hour Rate	$485.00	$499.55	$514.54	$529.97	$545.87
f. Annual Credit Hours	16	16	16	16	16
g. Total Part Time Revenue (d x e x f)	$0	$0	$0	$0	$0
3. Grants, Contracts, & Other External Sources	$0	$0	$0	$0	$0
4. Other Sources	$900,000	$900,000	$900,000	$900,000	$900,000
TOTAL (Add 1 - 4)	**$1,133,600**	**$1,381,216**	**$1,767,392**	**$1,921,044**	**$1,951,675**

Tuition revenue is based on AY2019-20 rates for the A. James Clark School of Engineering. It does not include mandatory fees or laboratory fees. Reallocated funds assume support from the States Workforce Development Initiative targeted towards programs to be delivered at the Universities at Shady Grove.

TABLE 2: EXPENDITURES

Expenditure Categories	Year 1	Year 2	Year 3	Year 4	Year 5
1. Full time Faculty (b+c below)	$399,000	$547,960	$705,499	$871,996	$898,156
a. #FTE	3.0	4.0	5.0	6.0	6.0
b. Total Salary	$300,000	$412,000	$530,450	$655,636	$675,305
c. Total Benefits	$99,000	$135,960	$175,049	$216,360	$222,851
2. Part time Faculty (b+c below)	$12,000	$24,000	$60,000	$60,000	$60,000
a. #FTE	0.2	0.4	1.0	1.0	1.0
b. Total Salary	$12,000	$24,000	$60,000	$60,000	$60,000
c. Total Benefits	$0	$0	$0	$0	$0
3. Admin. Staff (b+c below)	$186,200	$191,786	$246,924	$254,332	$261,962
a. #FTE	2.0	2.0	2.5	2.5	2.5
b. Total Salary	$140,000	$144,200	$185,658	$191,227	$196,964
c. Total Benefits	$46,200	$47,586	$61,267	$63,105	$64,998
4. Technical Support staff (b+c below)	$53,200	$54,796	$56,440	$58,133	$59,877
a. #FTE	0.5	0.5	0.5	0.5	0.5
b. Total Salary	$40,000	$41,200	$42,436	$43,709	$45,020
c. Total Benefits	$13,200	$13,596	$14,004	$14,424	$14,857
5. Graduate Assistants (b+c below)	$26,600	$53,200	$53,200	$53,200	$53,200
a. #FTE	1.0	2.0	2.0	2.0	2.0
b. Stipend	$20,000	$40,000	$40,000	$40,000	$40,000
c. Tuition Remission + benefits	$6,600	$13,200	$13,200	$13,200	$13,200
6. Equipment	$50,000	$25,000	$25,000	$25,000	$25,000
7. Library	$5,000	$5,000	$5,000	$5,000	$5,000
8. New or Renovated Space	$0	$0	$0	$0	$0
9. Marketing/Advertising	$5,000	$5,000	$5,000	$5,000	$5,000
10. Other Expenses: Operational Expenses	$50,000	$50,000	$50,000	$50,000	$50,000
11. Office Space Rental	$10,500	$10,815	$11,139	$11,474	$11,818
12. Classroom Rental	$0	$9,000	$9,270	$9,548	$9,835
13. university administrative fee	$23,360	$48,122	$86,739	$102,104	$105,168
TOTAL (Add 1 - 13)	**$820,860**	**$1,024,679**	**$1,314,211**	**$1,505,788**	**$1,545,015**

Notes: Graduate assistants are included in the budget to support instruction; however, if the class sizes are as anticipated, it is more likely that the department will use undergraduate teaching assistants which will change the budget slightly. Other expenses include tuition remission for graduate assistants, lab equipment and software maintenance, materials and supplies, program outreach, and travel related to the program.

Appendix A: Faculty in the Fischell Department of Bioengineering

All faculty hold doctoral degrees in a field relevant to the discipline. Faculty biographies and research interests can be found in the department's web site (https://bioe.umd.edu/clark/facultydir?drfilter=1). All faculty listed are full-time. Specific course assignments have not yet been made, but will be made in time to schedule the courses for the target start term of Fall 2021. Some additional hires are anticipated to support the program at Shady Grove.

Faculty Name	**Highest Degree Earned - Field and Year**	**Rank**
Aranda-Espinoza, Helim	Physics, 1998	Associate Professor and Associate Chair
Bentley, William	Chemical Engineering, 1989	Fischell Distinguished Professor
Clyne, Alisa	Medical and Mechanical Engineering, 2006	Associate Professor
Duncan, Gregg	Chemical and Biomolecular Engineering, 2014	Assistant Professor
Eisenstein, Edward	Biochemistry, 1985	Associate Professor
Fisher, John	Bioengineering, 2003	Fischell Distinguished Prof and Chair
He, Xiaoming	Mechanical Engineering, 2004	Professor
Huang, Huang-Chiao	Chemical Engineering, 2012	Assistant Professor
Jay, Steven	Biomedical Engineering, 2009	Associate Professor
Jewell, Christopher	Chemical Engineering, 2008	Minta Martin Professor of Engineering and Associate Professor/Chair
Jones, Angela	Chemical Engineering, 2010	Senior Lecturer
Ma, Lan	Electrical & Computer Engineering, 2004	Lecturer
Maisel, Katharina	Biomedical Engineering, 2014	Assistant Professor
Matysiak, Silvina	Chemistry, 2007	Associate Professor
Montas, Hubert	Agricultural and Biological Engineering, 1996	Associate Professor
Pranda, Marina	Bioengineering, 2019	Lecturer
Scarcelli, Giuliano	Applied Physics, 2006	Assistant Professor
Stroka, Kimberly	Bioengineering, 2011	Assistant Professor
Tao, Yang	Biological Engineering, 1991	Professor
White, Ian	Electrical Engineering, 2002	Associate Professor and Associate Chair
Zhang, Li-Qun	Biomedical Engineering, 1990	Professor

Appendix B: Course Descriptions

Some courses will be new to this program; they will be approved through the university's standard course approval process prior to delivery.

ENBC301: Introduction to Biocomputational Engineering
Credits: 1
Grading method: regular
Prerequisites: none
Restriction: Permission of ENGR-Fischell Department of Bioengineering department; and must be in Biocomputational Engineering major.
Description: Provides practical tools to help Biocomputational Engineering majors to think critically about their goals and career paths and to utilize their major to set their career trajectory.

ENBC311: Python for Data Analysis
Credits: 3
Grading method: regular
Prerequisites: none
Restriction: Permission of ENGR-Fischell Department of Bioengineering department; and must be in the Biocomputational Engineering major.
Credit only granted for: BIOE489A or BIOE442 or ENBC311.
Description: Provides an introduction to structured programming, computational methods, and data analysis techniques with the goal of building a foundation allowing students to confidently address problems in research and industry. Fundamentals of programming, algorithms, and simulation are covered from a general computer science perspective, while the applied data analysis and visualization portion makes use of the Python SciPy stack.

ENBC312: Object Oriented Programming in C++
Credits: 3
Grading method: regular
Prerequisites: none
Restriction: Permission of ENGR-Fischell Department of Bioengineering department; and must be in the Biocomputational Engineering major.
Description: Provides an introduction to object-oriented programming in the C++ language.

ENBC321: Machine Learning for Data Analysis
Credits: 3
Grading method: regular
Prerequisites: completion of ENBC312 and ENBC332 with a grade of "C-" or better.
Restriction: Permission of ENGR-Fischell Department of Bioengineering department; and must be in the Biocomputational Engineering major.
Description: Provides an introduction to artificial intelligence methods for mining big data sets and for making decisions using data sets.

ENBC322: Algorithms
Credits: 3
Grading method: regular
Prerequisites: completion of ENBC311 with a grade of "C-" or better.
Restriction: Permission of ENGR-Fischell Department of Bioengineering department; and must be in the Biocomputational Engineering major.
Credit only granted for: ENEB355 or ENBC322.
Description: Utilizing the Python programming language for a systematic study of the complexity of algorithms related to sorting, graphs and trees, and combinatorics. Algorithms are analyzed using mathematical techniques to solve recurrences and summations.

ENBC331: Applied Linear Systems and Differential Equations
Credits: 3
Grading method: regular
Prerequisites: completion of MATH246 and Matlab prior study requirement with a grade of "C-" or better. Restriction: Permission of ENGR-Fischell Department of Bioengineering department; and must be in the Biocomputational Engineering major.
Credit only granted for: BIOE371 or ENBC331.
Description: Applications of linear algebra and differential equations to bioengineering and biomolecular systems. Designed to instruct students to relate mathematical approaches in bioengineering to their physical systems. Examples will emphasize fluid mechanics, mass transfer, and physiological systems.

ENBC332: Statistics, Data Analysis, and Data Visualization
Credits: 3
Grading method: regular
Prerequisites: none
Restriction: Permission of ENGR-Fischell Department of Bioengineering department; and must be in the Biocomputational Engineering major.
Credit only granted for: BIOE372 or ENBC332 or STAT464.
Description: This course will instruct students in the fundamentals of probability and statistics through examples in biological phenomenon and clinical data analysis. Data visualization strategies will also be covered.

ENBC341: Biomolecular Engineering Thermodynamics
Credits: 3
Grading method: regular
Prerequisites: completion of MATH246 and PHYS260 with a grade of "C-" or better.
Restriction: Permission of ENGR-Fischell Department of Bioengineering department; and must be in the Biocomputational Engineering major.
Credit only granted for: BIOE232 or ENBC341 or CHBE301.
Description: A quantitative introduction to thermodynamic analysis of biomolecular systems. The basic laws of thermodynamics will be introduced and explained through a series of examples related to biomolecular systems.

ENBC342: Computational Fluid Dynamics and Mass Transfer
Credits: 3
Grading method: regular
Prerequisites: completion of ENBC341 and Matlab prior study requirement with a grade of "C-" or better; and must have completed (with a grade of "C-" or better) or be concurrently enrolled in ENBC331.
Restriction: Permission of ENGR-Fischell Department of Bioengineering department; and must be in the Biocomputational Engineering major.
Credit only granted for: BIOE331 or ENBC342.
Description: Principles and applications of fluid mechanics and mass transfer with a focus on topics in the life sciences and an emphasis on computational methods and modeling. Content includes conservation of mass, momentum, and energy, as well as the application of these fundamental relations to hydrostatics, control volume analysis, internal and external flow, and boundary layers. Applications to biological and bioengineering problems such as tissue engineering, bioprocessing, imaging, and drug delivery.

ENBC351: Quantitative Molecular and Cellular Biology
Credits: 3
Grading method: regular
Prerequisites: Completion of BSCI170 prior study with a grade of "C-" or better. Co-requisites: none
Restriction: Permission of ENGR-Fischell Department of Bioengineering department; and must be in the Biocomputational Engineering major.
Description: Quantitative analysis of the behavior of cellular and molecular systems.

ENBC352: Molecular Techniques Laboratory
Credits: 2
Grading method: regular
Prerequisites: Must have completed (with a grade of "C-" or better) or be concurrently enrolled in ENBC351. Restriction: Permission of ENGR-Fischell Department of Bioengineering department; and must be in the Biocomputational Engineering major.
Description: Wet lab experiments to observe cellular and molecular processes and phenomenon.

ENBC353: Synthetic Biology
Credits: 3
Grading method: regular
Prerequisites: Completion of BSCI170 prior study with a grade of C- or better.
Restriction: Permission of ENGR-Fischell Department of Bioengineering department; and must be in the Biocomputational Engineering major.
Credit only granted for: BIOE461 or ENBC353.
Description: Students are introduced to the scientific foundation and concepts of synthetic biology and biological engineering. Current examples that apply synthetic biology to fundamental and practical challenges will be emphasized. The course will also address the societal issues of synthetic biology, and briefly examine interests to regulate research in this area.

ENBC411: Advanced Programming in Python
Credits: 3
Grading method: regular
Prerequisites: completion of ENBC311 with a grade of "C-" or better.
Restriction: Permission of ENGR-Fischell Department of Bioengineering department; and must be in the Biocomputational Engineering major.
Description: Advanced programming methods with an emphasis on biocomputational applications.

ENBC413: Data Analysis with R
Credits: 3
Grading method: regular
Prerequisites: completion of ENBC332 with a grade of "C-" or better.
Restriction: Permission of ENGR-Fischell Department of Bioengineering department; and must be in the Biocomputational Engineering major.
Description: Provides an introduction to programming techniques for data analysis with the statistical software "R."

ENBC425: Imaging and Image Processing
Credits: 3
Grading method: regular
Prerequisites: completion of ENBC321 with a grade of "C-" or better.
Restriction: Permission of ENGR-Fischell Department of Bioengineering department; and must be in the Biocomputational Engineering major.
Description: Examines the physical principles behind major biomedical imaging modalities, including X-Ray, CT, MRI. Instructs students in mathematical tools for extracting information from images. Provides an introduction to the use of machine learning for interpreting images. Matlab and/or Python utilized for image processing exercises.

ENBC431: Finite Element Analysis
Credits: 3
Grading method: regular
Prerequisites: completion of MATH246 with a grade of "C-" or better.
Restriction: Permission of ENGR-Fischell Department of Bioengineering department; and must be in the Biocomputational Engineering major.
Description: Instructs students to use computer tools to analyze the thermal and mechanical properties of devices or systems. The course will focus specifically on the biomechanics of biomedical devices.

ENBC435: Numerical Methods
Credits: 3
Grading method: regular Prerequisites: none
Restriction: Permission of ENGR-Fischell Department of Bioengineering department; and must be in the Biocomputational Engineering major.
Description: The review of numerous mathematical methods to simplify complex problems.

ENBC441: Computational Systems Biology
Credits: 3
Grading method: regular
Prerequisites: completion of ENBC351 with a grade of "C-" or better.
Restriction: Permission of ENGR-Fischell Department of Bioengineering department; and must be in the Biocomputational Engineering major.
Description: Introduction to building computer models that analyze dynamic functions within a cell, organ, tissue, or organism.

ENBC442: Computational Molecular Dynamics
Credits: 3
Grading method: regular
Prerequisites: completion of ENBC341 and ENBC332 with a grade of "C-" or better.
Restriction: Permission of ENGR-Fischell Department of Bioengineering department; and must be in the Biocomputational Engineering major.
Credit only granted for: BIOE464 or ENBC442.
Description: Designed to introduce students to the principles, methods, and software used for simulation and modeling of macromolecules of biological interest such as proteins, lipids, and polysaccharides. Class topics: Basic statistical thermodynamics, force fields, molecular dynamics/ monte carlo methods, conformational analysis, fluctuations & transport properties, free-energy calculations, multiscale modeling.

ENBC443: Multiscale Simulation Methods
Credits: 3
Grading method: regular
Prerequisites: completion of ENBC341 and ENBC332 with a grade of "C-" or better.
Restriction: Permission of ENGR-Fischell Department of Bioengineering department; and must be in the Biocomputational Engineering major.
Credit only granted for: BIOE463 or ENBC443.
Description: Introduction to approaches to modeling a system at different scales, such as atomic, molecular, and macromolecular. Examples will focus on proteins for which models include the interactions with water, atomic interactions within the molecule, and interactions between multiple molecules; models that span both short and long-time scales are also studied.

ENBC444: Modeling Protein Folding
Credits: 3
Grading method: regular
Prerequisites: completion of ENBC341 and ENBC332 with a grade of "C-" or better.
Restriction: Permission of ENGR-Fischell Department of Bioengineering department; and must be in the Biocomputational Engineering major.
Description: Computational prediction of the structure of proteins with applications in protein misfolding diseases such as Alzheimer's Disease and other prion diseases.

ENBC445: Spatial Control of Biological Agents
Credits: 3
Grading method: regular
Prerequisites: completion of ENBC342 with a grade of "C-" or better.
Restriction: Permission of ENGR-Fischell Department of Bioengineering department; and must be in the Biocomputational Engineering major.
Description: Description and solution of the movement of passive and active biological agents in homogeneous and heterogeneous bioenvironments using partial differential equations and numerical methods. Identification and diagnosis of hot spots. Prescription of control strategies using techniques from Artificial Intelligence (AI) and verification of effectiveness. Applications environments may include landscapes and tissues.

ENBC455: Bioinformatics Engineering
Credits: 3
Grading method: regular
Prerequisites: completion of ENBC311 with a grade of "C-" or better.
Restriction: Permission of ENGR-Fischell Department of Bioengineering department; and must be in the Biocomputational Engineering major.
Description: Introduces students to core problems in bioinformatics, along with databases and tools that have been developed to study them. Students will learn to utilize Python to process data sets.

ENBC491: Senior Capstone Design in Biocomputational Engineering
Credits: 3
Grading method: regular
Prerequisites: completion of 18 credits in ENBC courses.
Restriction: Permission of ENGR-Fischell Department of Bioengineering department; and must be in the Biocomputational Engineering major.
Description: Senior design project, in which students work in teams to utilize the skills acquired through the major to identify and solve quantitative problems in bioengineering. Ethics in bioengineering and biotechnology will also be covered.

ENGL393: Technical Writing
Credits: 3
Grading method: regular Prerequisites: ENGL101.
Restriction: Must have earned a minimum of 60 credits. Description: The writing of technical papers and reports.

UNIVERSITY SYSTEM of MARYLAND

BOARD OF REGENTS
SUMMARY OF ITEM FOR ACTION, INFORMATION, OR DISCUSSION

TOPIC: University of Maryland, College Park: Master of Arts in International Relations

COMMITTEE: Education Policy and Student Life

DATE OF COMMITTEE MEETING: Friday, March 6, 2020

SUMMARY: The University of Maryland, College Park proposes to establish a Master of Arts in International Relations. The curriculum includes coursework in international political economy, international security, international law, and statistical methods of data analysis for international relations research. The program is designed for students with career goals in international relations research and analysis, whether in a conventional academic career as a university faculty member, or a professional career requiring sophisticated applied research and analysis of international relations issues, such as within agencies of the federal government.

The curriculum consists of 10 three-credit courses (30 credits total) divided into two phases: (1) three foundational graduate courses (9 credits) taken at the beginning of the program, and (2) seven core graduate courses (21 credits) taken to complete the program. During the final semester, students will complete a capstone research project.

ALTERNATIVE(S): The Regents may not approve the program or may request further information.

FISCAL IMPACT: No additional funds are required. The program can be supported by the projected tuition and fees revenue.

CHANCELLOR'S RECOMMENDATION: That the Committee on Education Policy and Student Life recommend that the Board of Regents approve the proposal from the University of Maryland, College Park to offer the Master of Arts in International Relations.

COMMITTEE RECOMMENDATION:		DATE:
BOARD ACTION:		DATE:
SUBMITTED BY: Joann A. Boughman	301-445-1992	jboughman@usmd.edu

UNIVERSITY OF MARYLAND
OFFICE OF THE PRESIDENT

Main Administration Building
College Park, Maryland 20742
301.405.5803 TEL 301.314.9560 FAX

January 27, 2020

Chancellor Jay A. Perman
University System of Maryland
3300 Metzerott Road
Adelphi, MD 20783

Dear Chancellor Perman:

I am writing to request approval for a new Master of Arts program in International Relations. The proposal for the new program is attached. I am also submitting this proposal to the Maryland Higher Education Commission for approval.

The proposal was endorsed by the appropriate faculty and administrative committees, and was recommended for approval by the University Senate at its meeting on December 4, 2019. I also endorse this proposal and am pleased to submit it for your approval.

Sincerely,

Wallace D. Loh
President

MDC
cc: Antoinette Coleman, Associate Vice Chancellor for Academic Affairs
Mary Ann Rankin, Senior Vice President and Provost
Gregory Ball, Dean, College of Behavioral and Social Sciences

UNIVERSITY SYSTEM OF MARYLAND INSTITUTION PROPOSAL FOR

x	New Instructional Program
	Substantial Expansion/Major Modification
	Cooperative Degree Program
	Within Existing Resources, or
	Requiring New Resources

University of Maryland, College Park
Institution Submitting Proposal

International Relations
Title of Proposed Program

Master of Arts	**Fall 2020**
Award to be Offered	Projected Implementation Date
221000	**45.0901**
Proposed HEGIS Code	Proposed CIP Code
Government and Politics	Paul Huth
Department in which program will be located	Department Contact
301-314-8481	phuth@umd.edu
Contact Phone Number	Contact E-Mail Address
Signature of President or Designee	January 27, 2020
	Date

A. Centrality to the University's Mission and Planning Priorities

Description. The University of Maryland, College Park (UMD) proposes to establish a Master of Arts in International Relations. The curriculum includes coursework in international political economy, international security, international law, and statistical methods of data analysis for international relations research. The program is designed to provide advanced coursework and applied quantitative methods training for students seeking careers as researchers in academia or research analysts in the public and private sectors. The program focuses on developing basic and applied research skills through coursework that emphasizes quantitative methods and datasets, as well as rigorous academic theory and empirical research. The impetus and design of the program align with the UMD's mission to use "its research educational, cultural, and technological strengths in partnership with state, federal, private, and non-profit sectors to promote economic development and improve quality of life in the state of Maryland."[1] UMD Government and Politics researchers working with policy makers from USAID, the Department of Defense, and the State Department over the past 10 years have found repeated evidence that (a) government officials and analysts often lack strong quantitative research skills and the ability to understand quantitative research, and (b) these officials recognize that there is a need for stronger evidence-based quantitative analyses to inform policy choices. The proposed program will enhance the capabilities of international relations professionals and provide a strong empirical foundation for those who go on to doctoral studies in international relations. This program is designed primarily to be a part of a combined bachelor's/master's program. UMD currently offers a Bachelor of Arts degree in Government and Politics that has an International Relations area of concentration and this combined bachelor's/master's program would be available only to undergraduate majors within Government and Politics. UMD is also exploring an admissions partnership with Jilin University in China.

Relation to Strategic Goals. Among UMD's strategic goals for graduate education is to provide advanced education for the professional workforce and to prepare graduate students to be leaders in their fields. As stated in UMD's Strategic Plan, "The University will maintain excellent professional graduate programs that are nationally recognized for their contributions to the practice of the professions, for their forward-looking curricula, and for their spirit of innovation and creativity . . . Our Master's and professional doctoral graduates will provide leadership in their fields and will be known for their command of the theories and practices of their chosen disciplines."[2] Students in the program will not only understand the central theoretical approaches to studying international relations, but they will also be trained in quantitative research methods, research design, statistical modeling, and data analysis. As a result, the program will be distinguished from other international relations programs that do not have the same emphasize on quantitative methods training and analysis.

Funding. Resources for the new program will be drawn from tuition revenue and from reallocated funds through the Office of the Provost.

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[1] University of Maryland, College Park. (August 1, 2018). *Mission statement*. Retrieved January 9, 2020, from https://www.provost.umd.edu/Documents/Mission-Vision.pdf.

[2] University of Maryland, College Park. (May 21, 2008). *Transforming Maryland: Higher expectations. The strategic plan for the University of Maryland.* Retrieved January 9, 2020, from http://www.provost.umd.edu/SP07/StrategicPlanFinal.pdf.

Institutional Commitment. The program will be offered by the Department of Government and Politics. UMD's Office of Extended Studies, which provides streamlined administrative support for professional graduate programs across the campus, will provide administrative support for the program. In the event that the program is discontinued, the courses will be offered for a reasonable time period so that enrolled students can finish the program. The faculty and administrative infrastructure will still be in place to work with students who have not finished the program.

B. Critical and Compelling Regional or Statewide Need as Identified in the State Plan

Need. The program is intended to support students with career goals centered in research and analysis, whether in a conventional academic career as a university faculty member, or a professional career that requires sophisticated applied research in the analysis of international relations issues. For students with professional goals to specialize as research analysts in government agencies, private firms, non-governmental organizations, and international institutions, the program would provide the advanced coursework and training to engage in quantitative analyses of policy-relevant international relations issues and to ground that analysis in relevant international relations literatures from academic research. UMD faculty has learned from interactions with international relations professionals in federal agencies that professionals need to have strong quantitative research and analysis skills to better inform policy decisions. To meet this need, the program will require quantitative methods and analyses courses and infuse its course readings with substantial quantitative and research design material.

State Plan. As noted in strategy 8 of the *Maryland State Plan for Postsecondary Education,* "More than ever, employers seek employees who have the flexibility to understand changing conditions and solve emerging problems."[3] This program reflects the call for innovation in the Maryland State plan by responding to the need from the international relations community for additional training in quantitative methods. Such training will allow graduates to better understand the quantitative dimension of pressing international problems.

C. Quantifiable and Reliable Evidence and Documentation of Market Supply and Demand in the Region and State

Graduates of this program will likely go on to become research analysts in government, journalism, law, non-governmental organizations, and international business. Some students may choose to pursue further study in a doctoral program, although this program is not intended to be a feeder to UMD's doctoral program in Government and Politics. As noted above, UMD faculty have discovered a particular demand among federal agencies for international relations professional with strong quantitative skills. Neither the US Bureau of Labor Statistics nor the Maryland Department of Labor record occupational projections specifically for international relations professionals, but research conducted by the UMD's Government and Politics

[3] Maryland Higher Education Commission. (2017). Maryland Sate Plan for Postsecondary Education: Increasing Student Success with Less Debt, 2017-2021. (p. 66). Retrieved January 10, 2020 from: http://www.mhec.state.md.us/About/Documents/2017.2021%20Maryland%20State%20Plan%20for%20Higher%20Education.pdf

department demonstrates significant interest. In a survey conducted in August 2019, the department sought information on undergraduate students' overall interest in pursuing graduate studies in International Relations. The survey population included close to 1,000 undergraduate student majors in the Government and Politics Department. More than 70% of surveyed students indicated that they were somewhat or highly interested in the program. Among Government and Politics majors who had or planned to complete a concentration in International Relations, the level of interest was more than 75%. The department plans to launch a combined bachelor's/master's program for international relations once the master's program is approved. The undergraduate major's international relations concentration has proven to be very popular. Nearly 400 students have declared the international relations concentration since it was established three years ago. The success of the international relations concentration indicates a pool of students that might benefit from an international relations master's program. Partners at Jilin University indicated that each year approximately 20-30% of 1100 students graduating from Jilin University in four targeted schools pursue graduate education in the US. Based on conversations with senior leadership at Jilin University, the department estimates 20-25 students from Jilin University in the first International Relations cohort should the partnership be established.

D. Reasonableness of Program Duplication

According to MHEC's online program inventory website, there are two programs with comparable titles: Johns Hopkins University's Master of Arts in International Studies and Morgan State University's Master of Arts in International Studies. UMD's program is strictly government and politics oriented, heavily focused on quantitative research and analysis, and is designed as a counterpart master's program for a combined bachelor's/master's program. As indicated above, a sufficient student population exists within UMD's own undergraduate program and students from Jilin University to warrant the program's establishment. UMD's professionally accredited, 48-credit Master of Public Policy program has coursework and some focus in International Relations, but the overall content of the program is broader than that proposed here and is designed to recruit a broader audience of students. The two units have been in conversation to clarify the distinctions between the programs in their communication to students and recruiting materials.

E. Relevance to High-demand Programs at Historically Black Institutions (HBIs)

As indicated above, UMD's goal is not to recruit students that would be interested in a "stand-alone" master's program. UMD will therefore not impact Morgan State University's recruitment as the target population for the UMD program are only students in specific undergraduate Government and Politics programs and through international collaborations with Jilin University.

F. Relevance to the identity of Historically Black Institutions (HBIs)

International Relations itself is not a unique area for any specific institution among the state's HBI's. Johns Hopkins also operates an International Studies program. Only Goucher College has a program that has the title International Relations (an undergraduate program). No other current master's program in Maryland is titled International Relations.

G. Adequacy of Curriculum Design, Program Modality, and Related Learning Outcomes

Curricular Development. The proposed curriculum was developed with a focus on basic and applied research skills through coursework that emphasizes quantitative methods and data sets along with rigorous academic theory and empirical research. The department has strengthened and developed new quantitative and analytic methods coursework for its undergraduate majors with the goal of providing stronger training in those areas so that, upon graduation, majors would have quantitative and analytical skill sets that would serve them in their professional career goals. Given these developments and new areas of strength in the undergraduate major, it was determined that a master's program that emphasized quantitative and analytical training would both further support the department's goals and provide an attractive master's program for current undergraduates.

Faculty Oversight. The Academic Program Director, Paul Huth, Professor of Government and Politics will be responsible for the academic oversight of the program. In addition, program oversight will be provided by the department's Director of Undergraduate Studies, who will collaborate with the Academic Program Director in the recruitment and selection of instructors for the program. Further, the Government and Politics department chair will conduct a review of the program every three years starting in fall 2024. Finally, the Academic Program Director will form an Advisory Committee that includes three Government and Politics tenure-track and professional-track faculty. The Advisory Committee will meet with the Academic Program Director annually to review the program and its performance.

Educational Objectives, Learning Outcomes, and Assessment. Learning outcomes for the program are organized under four areas of education objectives.

1. Theory in International Relations.

Outcome A: Students will be able to articulate the central theoretical approaches to studying international political economy, international security, and international law and institutions as well as debates among researchers regarding the strengths and weaknesses of different theoretical approaches.

Assessment Methods: Weekly seminar discussion contributions, short paper assignments focused on student evaluation of assigned readings, and in-class written final exam.

Outcome B: Students will be able to identify and apply different international relations theoretical approaches that can be drawn upon to study research questions and to assess how useful different theoretical approaches are to studying a given research question.

Assessment Methods: Weekly seminar discussion contributions, short paper assignments focused on student evaluation of assigned readings, short research design paper, and in-class written final exam.

2. Quantitative Methods for International Relations.

Outcome A: Students will be able to interpret and explain quantitative empirical findings on international political economy, international security, and international law and institutions as well as debates among researchers regarding the strengths and weaknesses of these empirical studies.

Assessment Methods: Weekly seminar discussion contributions, short paper assignments focused on student evaluation of assigned readings, and in-class written final exam.

Outcome B: Students will be able to demonstrate knowledge of the strengths and weaknesses of quantitative studies of international relations.

Assessment Methods: Weekly seminar discussion contributions, short paper assignments focused on student evaluation of assigned readings, and in-class written final exam.

3. Statistical Modeling

Outcome A: Students will be able to demonstrate knowledge of different statistical models that can be used to test theories and hypotheses on international relations and the advantages and limitations of alternative statistical models.

Assessment Methods: Weekly seminar discussion contributions, weekly completion of assigned problem-sets on statistical models, short research design paper, and in-class written final exam.

Outcome B: Students will be able to interpret and provide examples of the datasets used to study international political economy, international security, and international law and institutions as well as debates among researchers regarding the strengths and weaknesses of these datasets.

Assessment Methods: Weekly seminar discussion contributions, short paper assignments focused on student evaluation of assigned readings, and in-class written final exam.

Outcome C: Students will be able to explain which international relations datasets are potentially more or less useful for addressing research questions.

Assessment Methods: Weekly seminar discussion contributions, short paper assignments focused on student evaluation of assigned readings, and in-class written final exam.

4. Quantitative Research Designs

Outcome A: Students will be able to demonstrate knowledge of the fundamental principles, theories, and concepts involved with quantitative research designs used to study research questions in international relations.

Assessment Methods: Weekly seminar discussion contributions, weekly completion of assigned problem-sets on statistical models, short research design paper, and in-class written final exam.

Additional Learning Outcomes Assessment through the Capstone Project:

A faculty committee that oversees the program will develop a rubric that will be used annually to assess students' overall mastery of the four learning outcomes listed above based on a capstone research paper completed by students in one of the final three courses taken (GVPT 729, 808, 879). The capstone paper will require students to demonstrate each of the four learning outcomes described above in a research design paper that lays out carefully a plan of study to address an international relations research question, including theoretical framework, datasets to be used, measurement of variables, and appropriate statistical methods.

The rubric will contain categories related to specific learning outcomes and students will be assessed as "Advanced," "Proficient," "Developing" or "Novice" in each category. The individual categories will be aggregated to produce an overall score. The program will be successful if 80% of the students fall in the "Advanced" or "Proficient" categories on the learning outcomes assessed. The results of this annual assessment will be used by the advisory faculty committee to the Academic Program Director to recommend changes and improvement in the general curriculum as well as the content of specific courses.

Course requirements. The program requires the following ten three-credit courses:

GVPT604 Introduction to War and Armed Conflict 3 Credits
GVPT605 Introduction to Conflict and Cooperation in World Economy 3 Credits
GVPT606 Introduction to International Law and Institutions 3 Credits
GVPT622 Quantitative Methods for Political Science 3 Credits
GVPT708 Seminar in International Relations Theory 3 Credits
GVPT729 Special Topics in Quantitative Political Analysis 3 Credits
GVPT761 International Political Economy 3 Credits
GVPT803 Seminar in International Political Organization 3 Credits
GVPT808 Selected Topics in Functional Problems in International Relations 3 Credits
GVPT879 Topics on International Security 3 Credits
Total Credits 30

Specific course information is included in Appendix A.

General Education. N/A

Accreditation or Certification Requirements. There are no specialized accreditation or certification requirements for this program.

Other Institutions or Organizations. No contracts with another institution or non-collegiate organization for this program are anticipated at the start of the program.

Student Support. As mentioned above, UMD's Office of Extended Studies provides streamlined administrative support for professional graduate programs across the campus. The Office of Extended Studies Student and Program Services will provide support for admissions, scheduling, registration, billing and payment, graduation, and appeals. Additionally, the college of Behavioral and Social Sciences' Office of International and Executive Programs will provide support for international students, including marketing, admissions assistance, travel and immigration information, orientation, advising, and other general support.

Marketing and Admissions Information. The program will be clearly and accurately described in the university website and be marketed at university recruiting events. Administrative support for the program will be provided centrally by the Office of Extended Studies, which maintains a web site for all of its professional and continuing education degree programs.

H. Adequacy of Articulation

N/A

I. Adequacy of Faculty Resources

Program faculty. Faculty expertise will be drawn from the Department of Government and Politics. Faculty biographies for those currently expected to teach in the program are in Appendix B.

Faculty training. The university offers numerous opportunities for faculty training and support in the classroom, through the Teaching and Learning Transformation Center (TLTC), workshops by the Office of Faculty Affairs, and by the Division of Information Technology's Learning Technology Design group. Both the TLTC and the Learning Technology Design group also provide workshops and support in pedagogy and technology for the delivery of online components for any courses.

J. Adequacy of Library Resources

The University of Maryland Libraries has conducted an assessment of library resources required for this program. The assessment concluded that the University Libraries are able to meet, with its current resources, the curricular and research needs of the program.

K. Adequacy of Physical Facilities, Infrastructure, and Instructional Resources

The Department of Government and Politics' existing facilities, infrastructure, and equipment are adequate to support this program. All students have access to the UMD email system.

L. Adequacy of Financial Resources

Resources for the new program will be drawn from existing instructional resources in the department, from tuition and fee revenue, and from an initial investment of reallocated funds

from the university. The program is designed to be self-sustaining after the initial investment to start the program. See Tables 1 and 2 for a five-year estimate of resources and expenditures.

M. Adequacy of Program Evaluation

Formal program review is carried out according to the University of Maryland's policy for Periodic Review of Academic Units, which includes a review of the academic programs offered by, and the research and administration of, the academic unit (http://www.president.umd.edu/policies/2014-i-600a.html). Program Review is also monitored following the guidelines of the campus-wide cycle of Learning Outcomes Assessment (https://www.irpa.umd.edu/Assessment/LOA.html). Faculty within the department are reviewed according to the University's Policy on Periodic Evaluation of Faculty Performance (http://www.president.umd.edu/policies/2014-ii-120a.html). Since 2005, the University has used an online course evaluation instrument that standardizes course evaluations across campus. The course evaluation has standard, university-wide questions and also allows for supplemental, specialized questions from the academic unit offering the course.

N. Consistency with Minority Student Achievement goals

The Department of Government and Politics and the College of Behavioral and Social Sciences are committed to recruiting and retaining members of minority groups and increasing the graduation rates of diverse student populations. Further, the department and college are committed to supporting students and ensuring a fear-free, inclusive space where all students can thrive. This includes recognizing non-binary gender identifications, as well as the difference between assigned biological sex and gender expression and encouraging students, faculty, and staff to share and honor preferred pronouns and names. Faculty and staff for the proposed program will work closely with the college's Assistant Dean for Diversity, Kim Nickerson, to develop programs and strategies to advance its diversity objectives. The department's intention is for the program to be part of a combined bachelor's/master's program. Accordingly, the program will work with UMD's Office of Undergraduate Admissions (OUA), which employs multiple strategies when recruiting a diverse population to apply to UMD. A department representative will work with OUA admissions counselors to provide information about the combined program to prospective students in order to encourage students to apply to the university, enroll in the Government and Politics major, and consider continuing on to the master's program.

O. Relationship to Low Productivity Programs Identified by the Commission

N/A

P. Adequacy of Distance Education Programs

N/A

Table 1: Expenditures

Expenditure Categories	Year 1	Year 2	Year 3	Year 4	Year 5
1. Faculty (b+c below)	$79,800	$219,184	$282,199	$290,665	$299,385
a. #FTE	1.0	2.0	2.5	2.5	2.5
b. Total Salary	$60,000	$164,800	$212,180	$218,545	$225,102
c. Total Benefits	$19,800	$54,384	$70,019	$72,120	$74,284
2. Admin. Staff (b+c below)	$46,550	$143,840	$148,155	$152,599	$157,177
a. #FTE	0.5	1.5	1.5	1.5	1.5
b. Total Salary	$35,000	$108,150	$111,395	$114,736	$118,178
c. Total Benefits	$11,550	$35,690	$36,760	$37,863	$38,999
3. Total Support Staff (b+c below)	$33,250	$34,248	$70,550	$72,666	$74,846
a. #FTE	0.5	0.5	1.0	1.0	1.0
b. Total Salary	$25,000	$25,750	$53,045	$54,636	$56,275
c. Total Benefits	$8,250	$8,498	$17,505	$18,030	$18,571
4. Graduate Assistants (b+c)	$75,088	$77,341	$159,322	$164,101	$169,024
a. #FTE	2.0	2.0	4.0	4.0	4.0
b. Stipend	$40,000	$41,200	$84,872	$87,418	$90,041
c. Tuition Remission	$35,088	$36,141	$74,450	$76,683	$78,984
5. Equipment	$5,000	$5,000	$5,000	$5,000	$5,000
6. Library	$5,000	$5,000	$5,000	$5,000	$5,000
7. New or Renovated Space	$0	$0	$0	$0	$0
8. Other Expenses: Operational Expenses	$35,000	$35,000	$40,000	$40,000	$40,000
TOTAL (Add 1 - 8)	**$279,688**	**$519,612**	**$710,226**	**$730,032**	**$750,433**

Other expenses include materials and supplies, marketing, international travel, and administrative support from the campus.

Table 2: Resources

Resources Categories	Year 1	Year 2	Year 3	Year 4	Year 5
1.Reallocated Funds		$0	$0	$0	$0
2. Tuition/Fee Revenue (c+g below)	$205,860	$819,441	$1,184,258	$1,225,475	$1,268,212
a. #FT Students	5	20	30	30	30
b. Annual Tuition/Fee Rate	$28,272	$29,120	$29,994	$30,894	$31,820
c. Annual FT Revenue (a x b)	$141,360	$582,403	$899,813	$926,807	$954,612
d. # PT Students	5	10	10	10	10
e. Credit Hour Rate	$1,075.00	$1,128.75	$1,185.19	$1,244.45	$1,306.67
f. Annual Credit Hours	12	21	24	24	24
g. Total Part Time Revenue (d x e x f)	$64,500	$237,038	$284,445	$298,667	$313,601
3. Grants, Contracts, & Other External Sources	$0	$0	$0	$0	$0
4. Other Sources	$0	$0	$0	$0	$0
TOTAL (Add 1 - 4)	**$205,860**	**$819,441**	**$1,184,258**	**$1,225,475**	**$1,268,212**

Full-time tuition revenue is based on a mix of resident and non-resident graduate full-time rates, due to the intended partnership with an international university to create a student cohort. Part-time revenue is based on a flat rate for planning purposes. Any rate other than the resident/non-resident rate will require approval by the University's Finance Committee.

Appendix A: Courses

Prefix & Number	Title	Title
GVPT 604* 3 Credits	Introduction to War and Armed Conflict	This seminar examines major theories of both international and civil wars and reviews major empirical studies that test theories of conflict. The topics include the onset of armed conflict, the duration and outcomes of wars, and the durability of peace in the aftermath of wars. The focus is on developing an understanding of central debates in the literature and primary empirical findings from quantitative and cross-national analyses.
GVPT 605* 3 Credits	Introduction to Conflict and Cooperation in the World Economy	This seminar examines major theoretical approaches and empirical studies of international political economy, contemporary dynamics of globalization, the role of domestic politics in the formation of foreign economic policies of states, the dynamics of international trade and investment disputes, and role of international institutions in multi-lateral governance of the world economy. The focus is on developing an understanding of central debates in the literature and primary empirical findings from quantitative and cross-national analyses.
GVPT 606* 3 Credits	Introduction to International Law and Institutions	This seminar examines major theoretical approaches and empirical studies of international law and institutions relating to international political economy and international security. Topics to be covered include the sources of international law and the development of core legal principles in the post-WWII ear, the role of international economic institutions such as WTO, IMF, and World Bank in the global economy, and the influence of international institutions such as the UN Security Council, World Court, and International Criminal Court in addressing international security issues. Larger questions about the effectiveness of the WTO, Laws of War, and International Human Rights Law will be considered. The focus is on developing an understanding of central debates in the literature and primary empirical findings from quantitative and cross-national analyses.
GVPT 708 3 Credits	Seminar in International Relations Theory	This course will focus on central theoretical and analytical approaches to understanding how domestic and international factors influence and shape both the foreign policy goals pursued by national leaders and how these same factors affect the ability of such leaders to achieve their foreign policy goals. Theoretical approaches to studying international political economy, international security, and international law and institutions will be emphasized.
GVPT 761 3 Credits	International Political Economy	This course examines central theoretical and empirical studies of international trade, finance, and investment as well as topics such as multinational corporation relations with host countries, the relationship of domestic politics to foreign economic policy, patterns of globalization, and key legal principles relating to IPE. Throughout the course emphasis will be given to the importance of political and strategic factors in shaping and influencing international economics.

GVPT 803 3 Credits	Seminar in International Political Organization	This seminar examines some of the most important international economic institutions in the global economy such as the International Monetary Fund, the World Bank, the World Trade Organization, and regional development and investment banks. In addition, key security institutions such as the UN Security Council, regional security organizations, and the International Criminal Court will be examined. Key issues regarding political influences on behavior and effectiveness of international institutions are considered as well as challenges facing each organization, including possible major reforms.
GVPT 622 3 Credits	Quantitative Methods of Political Science	This course will focus on statistical methods of data analysis that are commonly used in the study of international relations. Regression analysis of observational data will be given primary attention as well as problems of casual inference with observational data and how to address them. The course will conclude with discussion of recent work in international relations using experimental designs and data analysis.
GVPT 729 3 Credits	Quantitative Analyses of International Political Economy and International Security	This seminar will examine major data sets that are widely used in the study of international political economy and international security and cutting-edge quantitative analyses utilizing these data sets. Attention will be given to the strengths and weakness of these data sets and quantitative studies and their utility in addressing central topics in the study of international political economy and international security.
GVPT 808 3 Credits	The Impact of International Economics and Security on Developing Countries	This seminar examines the challenges of economic and political development facing many countries in Africa, the Middle East, and Asia with particular attention to how international economic and security conditions affect national economic development, democratization, and political stability. Topics including MNC operations, the challenges of developing strong export markets, globalization and development, reliance on natural resources for development, role of foreign aid in development, and the impact of civil war and international security threats on development.
GVPT 879 3 Credits	The Political Economy of International Power and Security Policy	This seminar will focus on the inter-relationships between economic and military power in international relations. Topics to be covered will include the relationship between international trade and investment ties and international conflict, the use of economic sanctions to pressure governments, the relationship of rising and declining economic power for international security, burden sharing in alliances, the political economy of voting behavior in the UN, the consequences of international conflict and war for the economic development and growth of countries, and the consequences of climate change for the international economy and international security.

*Course will be added through the university course approval process after the program is approved.

Appendix B: Faculty

Instructor Pool: Titles, Credentials, & Courses

Todd Allee: PhD, Associate Professor of Government and Politics: international political economy, international law and institutions. Full-time.

- Courses: GVPT605, 606, 708, 761, 729, 803

Virginia Haufler: PhD, Associate Professor of Government and Politics: international political economy, international law and institutions. Full-time.

- Courses: GVPT605, 606,761

Sarah Croco: PhD, Associate Professor of Government and Politics: international conflict and security, quantitative methods and analysis. Full-time.

- Courses: GVPT604, 622, 708, 729, 761

Stacy Kosko: PhD, Associate Research Professor, Government and Politics/Center for International Development and Conflict Management: political economy of development, international law and institutions. Full-time.

- Courses: GVPT605, 606, 808

David Backer: PhD, Research Professor, Government and Politics/Center for International Development and Conflict Management: political economy of development, quantitative methods and analysis. Full-time.

- Courses: GVPT729, 808

Kelly Wong: PhD, Assistant Research Scientist, Government and Politics/Center for International Development and Conflict Management: political economy of development. Full-time.

- Courses: GVPT808

Jacob Aronson: PhD, Assistant Research Scientist, Government and Politics/Center for International Development and Conflict Management: international conflict and security, quantitative methods and analysis. Full-time.

- Courses: GVPT604, 622, 729, 879

Deniz Cil: PhD, Post-Doctoral Associate Government and Politics/Center for International Development and Conflict Management: international conflict and security, international law and institutions, quantitative methods and analysis. Full-time.

- Courses: GVPT604, 606, 708, 729, 803, 879

Eric Dunford, PhD, Assistant Teaching Professor, Georgetown University: quantitative methods and analysis. Part-time.

- Courses: GVPT622, 729.

Trey Billing: PhD summer 2020 Government and Politics: political economy of development, international political economy, quantitative methods and analysis. Part-time.

- Courses: GVPT605, 622, 729, 808

Andrew Lugg: PhD summer 2020 Government and Politics: international political economy, international law and institutions. Part-time.

- Courses: GVPT605, 761, 803

Analia Gomez Vidal: PhD summer 2020 Government and Politics: political economy of development, quantitative methods and analysis. Part-time.

- Courses: GVPT729, 808

UNIVERSITY SYSTEM of MARYLAND

BOARD OF REGENTS
SUMMARY OF ITEM FOR ACTION, INFORMATION, OR DISCUSSION

TOPIC: University of Maryland, College Park: Master of Science in Applied Political Analytics

COMMITTEE: Education Policy and Student Life

DATE OF COMMITTEE MEETING: Friday, March 6, 2020

SUMMARY: The University of Maryland, College Park (UMD) proposes to establish a Master of Science in Applied Political Analytics. This program will prepare students for careers at the intersection of political science and data science. Empirical analysis in political science is entering a new era of Big Data, in which a broad range of data sources have become available to researchers. Examples include network data from political campaigns, data from social media generated by individuals, campaign contributions and lobbying expenditures made by firms and individuals, and international trade flows data.

The program will be jointly offered by UMD's Department of Government and Politics (GVPT) and its Joint Program in Survey Methodology (JPSM). The curriculum consists of 12 three-credit courses (36 credits total). Eighteen (18) credits will be provided by GVPT, and 18 credits will be provided by JPSM.

Whether it is understanding which message to use to encourage a citizen to register to vote or what services are needed to support programs to reduce radicalization among at-risk youth, data driven strategies are a key to success. Graduates will understand the core questions of political science and have a sophisticated understanding of empirical research techniques to answer those questions. The program will prepare students for careers in the private sector; research centers; NGOs; and federal, state, and local government agencies.

ALTERNATIVE(S): The Regents may not approve the program or may request further information.

FISCAL IMPACT: No additional funds are required. The program can be supported by the projected tuition and fees revenue.

CHANCELLOR'S RECOMMENDATION: That the Committee on Education Policy and Student Life recommend that the Board of Regents approve the proposal from the University of Maryland, College Park to offer the Master of Science in Applied Political Analytics.

COMMITTEE RECOMMENDATION:		DATE:
BOARD ACTION:		DATE:
SUBMITTED BY: Joann A. Boughman	301-445-1992	jboughman@usmd.edu

UNIVERSITY OF MARYLAND
OFFICE OF THE PRESIDENT

Main Administration Building
College Park, Maryland 20742
301.405.5803 TEL 301.314.9560 FAX

February 3, 2020

Chancellor Jay A. Perman
University System of Maryland
3300 Metzerott Road
Adelphi, MD 20783

Dear Chancellor Perman:

I am writing to request approval for a new Master of Science program in Applied Political Analytics. The proposal for the new program is attached. I am also submitting this proposal to the Maryland Higher Education Commission for approval.

The proposal was endorsed by the appropriate faculty and administrative committees. I also endorse this proposal and am pleased to submit it for your approval.

Sincerely,

Wallace D. Loh
President

MDC
cc: Antoinette Coleman, Associate Vice Chancellor for Academic Affairs
Mary Ann Rankin, Senior Vice President and Provost
Gregory Ball, Dean, College of Behavioral and Social Sciences

UNIVERSITY SYSTEM OF MARYLAND INSTITUTION PROPOSAL FOR

x	New Instructional Program
	Substantial Expansion/Major Modification
	Cooperative Degree Program
	Within Existing Resources, or
	Requiring New Resources

University of Maryland, College Park
Institution Submitting Proposal

Applied Political Analytics
Title of Proposed Program

Master of Science	**Fall 2020**
Award to be Offered	Projected Implementation Date
220701	**45.1099**
Proposed HEGIS Code	Proposed CIP Code
Government and Politics	William Reed
Department in which program will be located	Department Contact
301-405-4156	wlr@umd.edu
Contact Phone Number	Contact E-Mail Address
Signature of President or Designee	February 3, 2020
	Date

A. Centrality to the University's Mission and Planning Priorities

Description. The University of Maryland, College Park (UMD) proposes to establish a Master of Science in Applied Political Analytics. This program will prepare students for careers at the intersection of political science and data science. Empirical analysis in political science is entering a new era of Big Data, in which a broad range of data sources have become available to researchers. Examples include network data from political campaigns, data from social media generated by individuals, campaign contributions and lobbying expenditures made by firms and individuals, and international trade flows data. The program will be jointly offered by UMD's Department of Government and Politics (GVPT) and its Joint Program in Survey Methodology (JPSM). GVPT will provide coursework in the foundations of political science, while JPSM will provide coursework in the technical aspects of data collection, survey methods, and statistical modeling. This interdisciplinary program aligns with UMD's mission as "a strong proponent of interdisciplinary education and collaboration . . . at the forefront of advanced knowledge in areas that increasingly depend on multi-disciplinary approaches, including energy, the environment, health, climate change, food safety, security, and information sciences."[1] People planning to work in the area of applied political analytics need two different sets of skills. They must have the technical background to work with data sets of an order of magnitude unimaginable to previous generations. Developing and working with social and behavioral data presents unique challenges in measurement design, data collection, ethics and governance, communication, data management, modeling, and analysis. They must also have a rich background in political science so that they can meaningfully apply these analytical skills to important policy questions and issues.

Relation to Strategic Goals. Among UMD's strategic goals for graduate education is to provide advanced education for the professional workforce and to prepare graduate students to be leaders in their fields. As stated in UMD's Strategic Plan, "The University will maintain excellent professional graduate programs that are nationally recognized for their contributions to the practice of the professions, for their forward-looking curricula, and for their spirit of innovation and creativity."[2] The program provides advanced training in the application of data science to the analysis of key issues in political science. Graduates will be well prepared for careers in the private sector, research centers, NGO's, and federal, state, and local government agencies. Whether it is understanding which message to use to encourage a citizen to register to vote or what services are needed to support programs to reduce radicalization among at-risk youth, data driven strategies are a key to success. Graduates will understand the core questions of political science and have a sophisticated understanding of empirical research techniques to answer those questions.

Funding. Resources for the new program will be drawn primarily from tuition revenue, but also initially from reallocated funds from within the university.

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[1] University of Maryland, College Park. (August 1, 2018). *Mission statement*. Retrieved January 9, 2020, from https://www.provost.umd.edu/Documents/Mission-Vision.pdf.

[2] University of Maryland, College Park. (May 21, 2008). *Transforming Maryland: Higher expectations. The strategic plan for the University of Maryland.* Retrieved January 9, 2020, from http://www.provost.umd.edu/SP07/StrategicPlanFinal.pdf.

Institutional Commitment. The program will be jointly offered by GVPT and JPSM. UMD's Office of Extended Studies, which provides streamlined administrative support for professional graduate programs across the campus, will provide administrative support for the program. In the event that the program is discontinued, the courses will be offered for a reasonable time period so that enrolled students can finish the program. The faculty and administrative infrastructure will still be in place to work with students who have not finished the program.

B. Critical and Compelling Regional or Statewide Need as Identified in the State Plan

Need. Prospective students in the state of Maryland's Washington, D.C., suburbs are drawn to the many political opportunities in the D.C. area. Their plans might include, for example, positions on Capitol Hill or in an NGO such as the World Bank or International Monetary Fund, a research organization such as the Brookings Institution, a political campaign, or one of the federal agencies. Many, however, will find it difficult to stand out in a crowded job market. And the market is indeed crowded; each year US colleges and universities grant degrees to more than 160,000 undergraduates who majored in one of the social sciences or history. The proposed program will give students valuable marketable skills that will give them a significant competitive advantage in the Washington market.

State Plan. As noted in strategy 8 of the *Maryland State Plan for Postsecondary Education,* "More than ever, employers seek employees who have the flexibility to understand changing conditions and solve emerging problems."[3] This program reflects the call for innovation in the Maryland State plan by providing students with the skills and abilities to further their understanding of government and politics through empirical research and data analytics. Students will go beyond the empirical training of traditional political science programs by delving more deeply into research design, statistical methods, data collection, questionnaire design and evaluation, computing and data display, and inference.

C. Quantifiable and Reliable Evidence and Documentation of Market Supply and Demand in the Region and State

Both the U.S. Bureau of Labor Statistics (BLS) and the Maryland Department of Labor predict job growth for political scientists. The U.S. prediction is 5% growth between 2018 and 2028,[4] and Maryland predicts 6.3% between 2016 and 2026.[5] More telling, however, is the significant rise in data science positions that is expected. A BLS report entitled, "Big Data Adds Up to Opportunities in Math Careers," indicates that data science positions are poised to increase

[3] Maryland Higher Education Commission. (2017). Maryland Sate Plan for Postsecondary Education: Increasing Student Success with Less Debt, 2017-2021. (p. 66). Retrieved January 10, 2020 from: http://www.mhec.state.md.us/About/Documents/2017.2021%20Maryland%20State%20Plan%20for%20Higher%20Education.pdf

[4] US Bureau of Labor Statistics. (September 4, 2019). Occupational Outlook Handbook: Political Scientists. Retrieved from: https://www.bls.gov/ooh/life-physical-and-social-science/political-scientists.htm.

[5] Maryland Department of Labor, Licensing & Regulation. Maryland Occupational Projections – 2016-2026 – Workforce Information and Performance. Retrieved January 21, 2020 from http://www.dllr.state.md.us/lmi/iandoproj/maryland.shtml.

dramatically.[6] The report indicates that jobs for statisticians are projected to increase 33.8% between 2016 and 2026. For this reason, GVPT and JPSM anticipate that jobs for political scientists with advanced data-science skills will be much higher than the 5-6% increase predicted by the US and the State of Maryland for political scientists.

In March 2018, the Department of Government and Politics distributed a survey to GVPT undergraduate majors enrolled in 300 and 400-level courses (586 unique students) asking about their interest in a program like the one proposed here. Eighty-six students took the survey, with 63 completing all questions. The students were primarily juniors (38%) and seniors (33%). Respondents were asked to rate the importance of a set of skills to achieving their career objectives, including data analysis, research design, questionnaire design, public speaking, and writing. The majority of students recognized data analysis and research design skills; the core components of the proposed program as important for their career objectives. With regard to data analysis skills, 46% of the respondents indicated these skills were "extremely important" and another 24% said they were "very important." Additionally, 39% responded that research design was extremely important, with another 31% indicating these skills were "very important." GVPT also asked respondents about the likelihood that they would enroll in a graduate program in political analytics. Seniors were asked how likely they would have been to enroll; the other respondents were asked how likely they would be to enroll. Thirty-seven percent of the respondents indicated they would be "very likely" to enroll; 38% said "somewhat likely" and 14% were undecided. Overall, this survey suggests that GVPT students see gaining data analysis skills as important to their career objectives and are interested in a graduate program like the MS in Political Analytics. GVPT and JPSM plan to launch a combined bachelor's/master's program for Government and Politics undergraduates and the Applied Political Analytics master's program once the MS program is approved. UMD has more than 800 students enrolled in its Government and Politics undergraduate program.

D. Reasonableness of Program Duplication

Only one master's program among Maryland institutions has a comparable title: Johns Hopkins University's Master of Science in Government Analytics. The Hopkins program is primarily online, whereas the proposed program will be taught in a face-to-face format on UMD's College Park campus. Furthermore, as indicated above, a sufficient student population exists within UMD's own undergraduate program to warrant the program's establishment.

E. Relevance to High-demand Programs at Historically Black Institutions (HBIs)

According to MHEC's online academic program inventory, no HBI currently offers a program that combines government and politics with data analytics.

F. Relevance to the identity of Historically Black Institutions (HBIs)

UMD has already established itself in the field of government and politics through the GVPT department and in data analytics as applied to the social sciences through the research and

[6] Rieley, M. (2018, June). Big data adds up to opportunities in math careers. *Beyond the Numbers, volume7(8).* Retrieved January 21, 2020 from https://www.bls.gov/opub/btn/volume-7/big-data-adds-up.htm.

teaching activities of JPSM. UMD already offers master's and doctoral programs in Government and Politics, Survey Methodology, and Survey Statistics. Accordingly, the proposed program would not have an impact on the uniqueness or institutional identity of any Maryland HBI.

G. Adequacy of Curriculum Design, Program Modality, and Related Learning Outcomes

Curricular Development. Both of the academic units involved in developing this program have seen their fields evolve as data analytics becomes more pervasive. The field of political science has become increasingly quantitative, and GVPT has in recent years added several courses focused on the analysis of data related to political questions. These courses have become quite popular with GVPT undergraduate students as they see that these courses provide clear skills that are attractive to employers. GVPT alumni have indicated in several cases that they have gotten jobs based on the skills they acquired in these types of classes. In the spring of 2018, GVPT had an external review and the external review committee commended the department in its strength in undergraduate instruction in political methodology and encouraged further development in that area.

JPSM is the nation's oldest and largest program originally focused on offering graduate training in the principles and practices of survey research. Over the last few years the scope within JPSM has grown to include administrative data and other digital traces. Studying errors and biases in the process of collecting such data, creating measurements from those data, and developing methods to analyze these data by themselves and in conjunction with survey data is now an added focus.

Both units understand that employers across the government, private, and non-profit sectors increasingly understand that data can help them reach their organizations' goals. In the campaign world alone, the last several election cycles have seen a proliferation of new companies specializing in data analytics and existing firms adding capacity in this area. In order to be most effective, however, the workforce needs more than just technical skills. That is, with a firm foundation in the theoretical and empirical research the most successful employees will be able to communicate more effectively with clients and adapt to new questions and issues as they arise. As a result, the program curriculum bridges a rigorous theoretical background in political science with a deeper and expanded skill set in data science.

Faculty Oversight. GVPT and JPSM will choose a program director from their tenured faculty. The GVPT director of graduate studies will initially serve as director. The units will also form an advisory board for the program that will include at least one faculty member from GVPT and one faculty member from JPSM, a current student in the program, and one or more members from outside the university. The outside members will be from institutions that employ people with the skills and background of the graduates of the proposed program.

Learning Outcomes and Assessment. The proposed curriculum has been designed to meet five outcomes:

1. Provide a more rigorous theoretical background in at least one major sub-field in political science.

2. Enhance a student's existing understanding of political analysis (from undergraduate coursework) with a rigorous introduction to additional analytical tools.
3. Provide a venue for students to practice theoretically rigorous political analysis with their expanded tool set.
4. Provide a rigorous understanding of the fundamentals of data science.
5. Introduce students to the key tools of Big Data collection, management, and analysis.

In one of the substantive political science courses the students will take toward the end of the program (Public Opinion, Voting, Campaigns, and Elections, The Logic and Practice of Measurement, and National Security and International Relations), they will complete a major final project that demonstrates each of these skills. We will assess all student's achievement of these learning outcomes each year.

A faculty committee that oversees the Master of Science in Applied Political Analytics program, led by a full professor, will develop rubrics that will be used to assess student mastery of each of these learning objectives. Faculty members will then use the rubric to assess each major project produced in each academic year. The rubric will contain categories related to the specific learning outcome and students will be assessed as "Advanced," "Proficient," "Developing" or "Novice" in each category. The individual categories will be aggregated to produce an overall score. Our overall goal is that 80% of the students are scored as "Advanced" or "Proficient" on the learning outcome assessed.

This assessment will be conducted annually. The program will assess one to two learning outcomes per year, and every outcome will be assessed at least every four years.

The results of this assessment will be discussed in the faculty committee, as well as among the faculty of GVPT and JPSM. GVPT and JPSM will use this discussion to continually improve the overall curriculum and the content of the specific courses offered within the MS degree to enhance student learning.

Course requirements. The program requires the following twelve three-credit courses:

GVPT6XX Research Design for Political Analytics 3 Credits
GVPT6XX Voting, Campaigns, and Elections 3 Credits
GVPT6XX Coding in Statistical Software 3 Credits
GVPT6XX Public Opinion 3 Credits
GVPT6XX The Logic and Practice of Measurement 3 Credits
GVPT6XX National Security and International Relations 3 Credits
SURV615 Statistical Modeling I 3 Credits
SURV616 Statistical Modeling II 3 Credits
SURV621 Fundamentals of Data Collection I 3 Credits
SURV630 Questionnaire Design and Evaluation 3 Credits
SURV727 Fundamentals of Computing and Data Display 3 Credits
SURV740 Fundamentals of Inference 3 Credits
Total Credits: 36

GVPT will develop six new courses for the program (the as yet unnumbered GVPT6XX courses listed above), and JPSM will offer six courses that have already been developed. Specific course information is included in Appendix A.

General Education. N/A

Accreditation or Certification Requirements. There are no specialized accreditation or certification requirements for this program.

Other Institutions or Organizations. No contracts with another institution or non-collegiate organization for this program are anticipated at the start of the program.

Student Support. UMD's Office of Extended Studies provides streamlined administrative support for professional graduate programs across the campus. The Office of Extended Studies Student and Program Services will provide support for admissions, scheduling, registration, billing and payment, graduation, and appeals.

Marketing and Admissions Information. The program will be clearly and accurately described in the university website and be marketed at university recruiting events. Administrative support for the program will be provided centrally by the Office of Extended Studies, which maintains a web site for all of its professional and continuing education degree programs.

H. Adequacy of Articulation

N/A

I. Adequacy of Faculty Resources

Program faculty. Faculty expertise will be drawn from both GVPT and JPSM. Faculty biographies for those currently expected to teach in the program are in Appendix B.

Faculty training. The university offers numerous opportunities for faculty training and support in the classroom, through the Teaching and Learning Transformation Center (TLTC), workshops by the Office of Faculty Affairs, and by the Division of Information Technology's Learning Technology Design group. Both the TLTC and the Learning Technology Design group also provide workshops and support in pedagogy and technology for the delivery of online components for any courses.

J. Adequacy of Library Resources

The University of Maryland Libraries has conducted an assessment of library resources required for this program. The assessment concluded that the University Libraries are able to meet, with its current resources, the curricular and research needs of the program.

K. Adequacy of Physical Facilities, Infrastructure, and Instructional Resources

The existing facilities, infrastructure, and equipment in GVPT and JPSM are adequate to support this program. All students have access to the UMD email system.

L. Adequacy of Financial Resources

Resources for the new program will be drawn from existing instructional resources in GVPT and JPSM, from tuition and fee revenue, and from an initial investment of reallocated funds from within the university. The program is designed to be self-sustaining after the initial investment to start the program. See Tables 1 and 2 for a five-year estimate of resources and expenditures.

M. Adequacy of Program Evaluation

Formal program review is carried out according to the University of Maryland's policy for Periodic Review of Academic Units, which includes a review of the academic programs offered by, and the research and administration of, the academic unit (http://www.president.umd.edu/policies/2014-i-600a.html). Program Review is also monitored following the guidelines of the campus-wide cycle of Learning Outcomes Assessment (https://www.irpa.umd.edu/Assessment/LOA.html). Faculty within the department are reviewed according to the University's Policy on Periodic Evaluation of Faculty Performance (http://www.president.umd.edu/policies/2014-ii-120a.html). Since 2005, the University has used an online course evaluation instrument that standardizes course evaluations across campus. The course evaluation has standard, university-wide questions and also allows for supplemental, specialized questions from the academic unit offering the course.

N. Consistency with Minority Student Achievement goals

GVPT, JPSM, and the College of Behavioral and Social Sciences (which houses these two academic units) are committed to the recruitment, retention and professional development among members of minority groups, and to increase graduation rates of diverse student populations. These units will work closely with the college's Assistant Dean for Diversity Kim Nickerson to develop programs and strategies to advance the program's diversity objectives. The diversity plans, for example, will include the following:

- Working closely with campus minority student groups so that students from groups that are underrepresented in political science are aware of the program.
- Developing a program to match students with faculty mentors.
- Reaching out to Historically Black Colleges and Universities and other schools with significant numbers of minority undergraduates.
- Taking advantage of the American Political Science Association's many programs to promote diversity.

GVPT and JPSM are committed to supporting students and ensuring a fear-free, inclusive space where all students can thrive. GVPT and JPSM recognize non-binary gender identifications, as well as the difference between assigned biological sex and gender expression. They encourage students, faculty, and staff to share and honor preferred pronouns and names.

O. Relationship to Low Productivity Programs Identified by the Commission

N/A

P. Adequacy of Distance Education Programs

N/A

Table 1: Expenditures

Expenditure Categories	Year 1	Year 2	Year 3	Year 4	Year 5
1. Faculty (b+c below)	$104,000	$200,850	$275,834	$284,109	$292,632
a. #FTE	1.0	1.5	2.0	2.0	2.0
b. Total Salary	$80,000	$154,500	$212,180	$218,545	$225,102
c. Total Benefits	$24,000	$46,350	$63,654	$65,564	$67,531
2. Admin. Staff (b+c below)	$91,000	$93,730	$96,542	$99,438	$102,421
a. #FTE	1.0	1.0	1.0	1.0	1.0
b. Total Salary	$70,000	$72,100	$74,263	$76,491	$78,786
c. Total Benefits	$21,000	$21,630	$22,279	$22,947	$23,636
3. Total Support Staff (b+c below)	$32,500	$33,475	$34,479	$35,514	$36,579
a. #FTE	0.5	0.5	0.5	0.5	0.5
b. Total Salary	$25,000	$25,750	$26,523	$27,318	$28,138
c. Total Benefits	$7,500	$7,725	$7,957	$8,195	$8,441
4. Graduate Assistants (b+c)	$174,176	$179,401	$184,783	$190,327	$196,037
a. #FTE	4.0	4.0	4.0	4.0	4.0
b. Stipend	$80,000	$82,400	$84,872	$87,418	$90,041
c. Benefits	$24,000	$24,720	$25,462	$26,225	$27,012
d. Tuition Remission	$70,176	$72,281	$74,450	$76,683	$78,984
5. Equipment	$9,000	$6,000	$6,000	$6,000	$6,000
6. Library	$5,000	$5,000	$5,000	$5,000	$5,000
7. New or Renovated Space	$0	$0	$0	$0	$0
8. Other Expenses: Operational Expenses	$45,362	$72,864	$95,270	$120,343	$134,897
TOTAL (Add 1 - 8)	**$461,038**	**$591,320**	**$697,908**	**$740,731**	**$773,566**

Other expenses include marketing, materials and supplies, travel, and administrative support from the Office of Extended Studies.

Table 2: Resources

Resources Categories	Year 1	Year 2	Year 3	Year 4	Year 5
1.Reallocated Funds	$0	$0	$0	$0	$0
2. Tuition/Fee Revenue (c+g below)	$173,616	$478,635	$702,700	$943,432	$1,078,968
a. #FT Students	5	10	15	20	20
b. Annual Tuition/Fee Rate	$21,835	$22,490	$23,165	$23,860	$24,576
c. Annual FT Revenue (a x b)	$109,176	$224,903	$347,474	$477,198	$491,514
d. # PT Students	5	15	20	25	30
e. Credit Hour Rate per student	$1,074	$1,128	$1,184	$1,243	$1,305
f. Total Annual Credit Hours	12	15	15	15	15
g. Total Part Time Revenue (d x e x f)	$64,440	$253,733	$355,226	$466,233	$587,454
3. Grants, Contracts, & Other External Sources	$0	$0	$0	$0	$0
4. Other Sources	$0	$0	$0	$0	$0
TOTAL (Add 1 - 4)	**$173,616**	**$478,635**	**$702,700**	**$943,432**	**$1,078,968**

Appendix A: Courses

*GVPT6xx: Research Design for Political Analytics (3 credits)
This course will introduce students to the empirical research techniques used in political science. Students will explore the core questions that motivate political science research and the approaches used to answer those questions. Students will understand when and how to implement research designs that utilize experiments, surveys, case studies, historical data, and administrative data.

*GVPT6xx: Coding in Statistical Software (3 credits)
This course will introduce students to different statistical software packages used in empirical political research and which they will use in later substantive courses. Students will receive instruction in beginning programming in these packages, which will be STATA and R.

*GVPT6xx: Public Opinion (3 credits)
This course will investigate how citizens in a democracy think about politics, form attitudes, and how public opinion shapes and is shaped by the political environment. While being exposed to core debates in public opinion and the study of public opinion, students will use a number of surveys that have been central to advancing our knowledge of public opinion.

*GVPT6xx: Voting, Campaigns, and Elections (3 credits)
This course will introduce students to the theoretical and empirical research on political participation, campaigns, and elections. By gaining an understanding of the literature and working with a variety of data sets, including surveys and voter history files, students will be equipped to carry out their own research on these topics.

*GVPT6xx: The Logic and Practice of Measurement (3 credits)
This course will introduce students to core concepts necessary to measure political behavior. Students will learn to take ideas from the concept stage to measurement of the concepts as part of a research design to answer theoretically motivated questions about political behavior and other political activity.

*GVPT6xx: National Security and International Relations (3 credits)
This course will introduce students to key areas of research in national security and international relations. Students will learn the major approaches to empirical research on national and international security and work with datasets focused on terrorist attacks and civil conflict.

SURV615: Statistical Methods I (3 credits) The purpose of this class is to learn basic statistical methods through the use of linear model theory and regression. Particular topics covered include one- and two-sample t-tests, multiple linear regression, analysis of variance, regression diagnostics, model-building techniques, random effects models, and mixed models. The emphasis will be to understand and apply the methods presented, and develop a feel for how problems in data analysis can be viewed in several different ways. In all cases the emphasis will be on understanding the techniques, rather than deriving their theoretical properties. The student will be expected to apply the techniques on weekly homework assignments, a midterm project, and a final project.

SURV616: Statistical Methods II (3 credits)
Builds on the introduction to linear models and data analysis provided in Statistical Methods I. Topics include: Multivariate analysis techniques (Hotelling's T-square, Principal Components, Factor Analysis, Profile Analysis, MANOVA); Categorical Data Analysis (contingency tables, measures of association, log-linear models for counts, logistic and polytomous regression, GEE) and Lifetime Data Analysis (Kaplan-Meier plots, logrank tests, Cox regression).

SURV621: Fundamentals of Data Collection I (3 credits)
This course is the first semester of a two-semester sequence that provides a broad overview of the processes that generate data for use in social science research. Students will gain an understanding of different types of data and how they are created, as well as their relative strengths and weaknesses. A key distinction is drawn between data that are designed, primarily survey data, and those that are found, such as administrative records, remnants of online transactions, and social media content. The course combines lectures, supplemented with assigned readings, and practical exercises. In the first semester, the focus will be on the error that is inherent in data, specifically errors of representation and errors of measurement, whether the data are designed or found. The psychological origins of survey responses are examined as a way to understand the measurement error that is inherent in answers. The effects of the mode of data collection (e.g., mobile web versus telephone interview) on survey responses also are examined.

SURV630: Questionnaire Design and Evaluation (3 credits)
This course focuses on the development of the survey instrument, the questionnaire. Topics include wording of questions (strategies for factual and non-factual questions), cognitive aspects, order of response alternatives, open versus closed questions, handling sensitive topics, combining individual questions into a meaningful questionnaire, issues related to question order and context, and aspects of a questionnaire other than questions. Questionnaire design is shown as a function of the mode of data collection such as face-to-face interviewing, telephone interviewing, mail surveys, diary surveys, and computer-assisted interviewing.

SURV727: Fundamentals of Computing and Data Display (3 credits)
Empirical social scientists are often confronted with a variety of data sources and formats that extend beyond structured and handleable survey data. With the emergence of Big Data, especially data from web sources play an increasingly important role in scientific research. However, the potential of new data sources comes with the need for comprehensive computational skills in order to deal with loads of potentially unstructured information. Against this background, the first part of this course provides an introduction to web scraping and API's for gathering data from the web and then discusses how to store and manage (big) data from diverse sources efficiently. The second part of the course demonstrates techniques for exploring and finding patterns in (non-standard) data, with a focus on data visualization. Tools for reproducible research will be introduced to facilitate transparent and collaborative programming. The course focuses on R as the primary computing environment, with excursus into SQL and Big Data processing tools.

SURV740: Fundamentals of Inference (3 credits)

The course is designed to overview and review fundamental ideas of making inferences about populations. It will emphasize the basic principles of probability sampling; focus on differences between making predictions and making inferences; explore the differences between randomized study designs and observational studies; consider model-based vs. design-based analytic approaches; review techniques designed to improve efficiency using auxiliary information; and consider non-probability sampling and related inferential techniques.

*Course will be added through the university course approval process after the program is approved.

Appendix B: Faculty

Instructor Pool: Titles, Credentials, & Courses

The GVPT courses will be new and have not yet been assigned. The list below includes potential GVPT faculty who may teach in the program. Some Professional Track (non-tenure track) will be hired for teaching the courses, including some current doctoral students. More than 50% of the faculty will be full-time.

For GVPT-based courses

Name	Type of Degree, Year	Courses
Liliana Mason	PhD, Pol Sci, 2013; Associate Professor; F/T	
Sarah Croco	PhD, Pol Sci, 2004; Associate Professor; F/T	
Michael Hanmer	PhD, Pol Sci, 2008; Professor; F/T	
Candice Turrito	PhD, GVPT 2018; Consultant; F/T	
Eric Dunford	PhD, GVPT 2018; Assistant Teaching Professor, Georgetown University; F/T	
Trey Billing	PhD expected 2020; Doctoral candidate, PhD expected 2020; P/T	
Ted Ellsworth	PhD expected 2022; Doctoral candidate, PhD expected 2022; P/T	
Michael Cowan	MPP 2014; Doctoral candidate, PhD expected 2022; P/T	

The SURV courses have been taught. Although some hiring of professional track faculty may be hired to teach the courses, a pool of existing faculty exist who have taught the courses.

For JPSM-based courses

Name	Type of Degree, Year	Courses
Frauke Kreuter	PhD, Sociology, 2001; Professor; F/T	
Taylor Lewis	PhD, Survey Methodology, 2014; Adjunct Assistant Professor; F/T	SURV615; SURV616
Christopher Antoun	PhD, Survey Methodology, 2015; Assistant Research Professor; F/T	SURV621
Yan Li	PhD, Survey Methodology, 2006; Professor; F/T	SURV740
Frederick Conrad	PhD, Cognitive Psychology, 1986; Professor, University of Michigan, Associate Research Professor, UMD; F/T	SURV621
Michael Elliott	PhD, Biostatistics, 1999; Research Professor; F/T	SURV740
Ting Yan	PhD, Survey Methodology, 2005; Assistant Research Professor; F/T	SURV630
Christoph Kern	PhD, Political Science, 2016; Assistant Research Professor; F/T	SURV727

F/T= Full time. P/T= Part time.

UNIVERSITY SYSTEM of MARYLAND

BOARD OF REGENTS

SUMMARY OF ITEM FOR ACTION, INFORMATION, OR DISCUSSION

TOPIC: Update: P-20 Initiatives

COMMITTEE: Education Policy and Student Life

DATE OF COMMITTEE MEETING: Friday, March 6, 2020

SUMMARY: Traditionally, the Board of Regents receives an update on highlights of USM's P-20 initiatives every spring. The P-20 work in the Office of Academic and Student Affairs encompasses partnerships between USM, USM institutions, community colleges, independent universities, and the Maryland Public Schools (P-12). The USM P-20 Office serves as a central point of contact for the education segments--P-12 schools, community colleges, universities--to collaborate on shared objectives of building seamless educational experiences for students from pre-kindergarten through college and career.

P-20 initiatives that are reflected in the following materials and/or will be addressed during today's presentation include:

- Maryland Center for Computing Education
- State-wide initiative to reduce students' time in developmental and remedial math courses and accelerate their time to degree
- Civic Education and Civic Engagement
- B-Power
- Teacher Education

This annual report also includes a summary of the recommendations of the Kirwan Commission that are directly relevant to higher education, a report from the Governor's P-20 Leadership Council, and information on USM's participation in the National Association of System Heads.

ALTERNATIVE(S): This is an information item.

FISCAL IMPACT: This is an information item.

CHANCELLOR'S RECOMMENDATION: This is an information item.

COMMITTEE RECOMMENDATION: Information Only	DATE: March 6, 2020
BOARD ACTION:	DATE:
SUBMITTED BY: Joann Boughman 301-445-1992	jboughman@usmd.edu

Board of Regents Education Policy and Student Life Committee
P-20 Overview
March 6, 2020

Traditionally, the Board of Regents receives an annual update on highlights of USM's P-20 initiatives every spring. The P-20 work in the Office of Academic and Student Affairs encompasses partnerships between the USM office, USM institutions, community colleges, independent universities, and the Maryland Public Schools. The USM P-20 Office serves as the central point of contact for the education segments—P-12 schools, community colleges, universities—to collaborate on shared objectives of building seamless educational experiences for students from pre-kindergarten through college and career.

MCCE: Maryland Center for Computing Education
We are a year and a half into the work that was initiated by HB281 in 2018. MCCE is tasked with providing support for computer science education in P-12, including outreach to the school districts, creation of summer professional development programs for teachers, and collaborative standard setting and curriculum development for computer science integration in schools and in teacher preparation programs. In summer 2019, we offered professional development for over 400 Maryland teachers, while assisting all Maryland school systems to develop and implement their plans for making computer science opportunities available to all students in the state (attachment).

To date we have granted $678,236 directly to Local School Systems (LSS) and spent $258,486 to provide statewide support for P-12 in the form of statewide professional development (PD) workshops, facilitators for local professional development, and online mentoring.

In addition, to date, we have granted $555,989 to higher education institutions that are developing teacher preparation programs to support computer science teaching. We spent $10,780 to provide expert facilitators and statewide collaboration and PD opportunities to support our higher education institutions.

Amounts spent on P-12 and higher education in support of computer science education

	Direct Grants	Statewide Support Costs of PD	TOTAL
Local school systems/ P-12	$678,236	$258,486	$936,722
Higher Education	$555,989	$10,780	$566,769

State-wide initiatives to reduce students' time in developmental and remedial math courses and accelerate their time to degree
First in the World Maryland Mathematics Reform Initiative (FITW-MMRI)
USM received a four-year, three-million-dollar grant from the U.S. Department of Education in 2015. The grant directly addresses the problem of too many undergraduate students placing into non-credit developmental and remedial mathematics courses. In collaboration with seven community colleges and five USM institutions, USM has supported the development of high-quality statistics pathways that accelerates students' progress through their general education

required mathematics courses. We now have results from the first cohort of students who completed the innovative math pathway, and the outcomes exceeded our expectations. The evaluation of the first cohort of a matched-sample of 1,200 students in 10 different institutions showed that students in the new pathways courses passed at a statistically significant higher rate than students in traditional college algebra courses (70.5% compared to 56.5%). Importantly, success rates in the new pathways courses were *not* significantly different for different demographic groups. Female-identified and male-identified students were both more likely to pass the new pathways course than the traditional course. While white students have higher pass rates in developmental courses than students of color, nationwide, that trend did not hold true in the newly implemented developmental pathways courses: students of color were as likely to be successful as white students. Additionally, Pell grant-eligible students were just as likely to be successful in the new courses as non-eligible students.

In January 2020, USM published a monograph containing eight chapters, written by four USM institutions (Coppin State University, Towson University, UMBC, and University of Maryland Global Campus), four community colleges (Anne Arundel Community College, Harford Community College, Howard Community College, and Montgomery College), and one affiliate public four-year university (Morgan State University), recounting their experiences with implementing mathematics reforms as part of the Maryland Mathematics Reform Initiative. The institutions described their efforts to redesign developmental courses, better align developmental and transfer-level courses, facilitate inter- and intra-institutional communication and collaboration, and improve placement practices. (Attachment: *Reforming Mathematics in Maryland: Stories from the Journey*)

Maryland Mathematics Alignment Project (MMAP)

This year, the Maryland State Department of Education (MSDE) invited USM to co-lead an effort to build a more seamless alignment between high school mathematics requirements for a Maryland diploma and college mathematics requirements for an AA or bachelor's degree (attachment). That work is just beginning, and the first meeting of the MMAP Task Force was held on January 29, 2020.

Strong Start to Finish: Placement Collaboration

Strong Start to Finish (SSTF) is an initiative of the Education Commission of the States focused on increasing the number of students completing their first credit-bearing math and English courses in their first year of study. In February 2020, USM applied to SSTF for funding to begin statewide collaboration on creating a fairer and more streamlined process for assessing students' readiness for college level mathematics. The USM project is called Multiple Placement Measures for Maryland (MPM_2) and, if funded, will provide us with an opportunity to do research to better understand the best predictors of student success in college-level math classes.

Civic Education and Civic Engagement Update

USM hosted the first annual Civic Engagement and Civic Education (CECE) Workshop on November 8, 2019 (full report presented at the November meeting of the Committee on Education Policy and Student Life). Subsequently, on February 12, 2020, two USM institutions were awarded the highly-prestigious Carnegie Community Engagement Classification: Salisbury University and University of Maryland, Baltimore County. Campus teams are working on

diverse follow-up activities based on plans developed at the CECE workshop. In Spring 2020, USM will be bringing campus representatives (students, faculty, and staff) together to review campus plans and begin for a fall 2020 convening.

B-Power Update
B-Power is a dual enrollment program in Baltimore City that began as a USM initiative in 2016. Over the past three years, the program has expanded to include almost every eligible public high school in Baltimore. John Brenner, Director of Early College Initiatives at UB, has led this work and has expanded the program again this year. Dual enrollment headcount at UB has grown twentyfold since 2016, and the number of partner high schools and community-based partners increased tenfold. Growth also included the participation of middle school students in the College Readiness Academy for the first time and now reaching nearly every eligible public high school in Baltimore with B-Power dual enrollment. Given the evidence of success of this program, in 2020, the University System of Maryland will continue to provide funding to UB for B-Power.

Teacher Education Enhancement Funding Request Update: Request Denied
The Kirwan Commission has identified teaching and teachers as critical to improving public education in Maryland, and USM provides almost 70% of the Maryland-prepared teachers. Last year, the Chancellor charged a Teacher Workforce Workgroup with examining matters of quantity and quality in producing an appropriate teacher workforce for our state and advising System leadership and the Regents on how the USM can best shape its resources in that effort, in anticipation of the FY2021 Enhancement Request. Dr. DeBrenna Agbenyiga (then-Provost at Bowie State University) and Dr. Laurie Mullen (Dean of Education at Towson University) co-chaired a workgroup composed of all ten USM Education Deans and Directors, USM's Institutional Research office, and augmented by representatives from the Maryland Independent College and University Association (MICUA), Maryland Association of Community Colleges (MACC), Maryland State Department of Education (MSDE), and Maryland Higher Education Commission (MHEC). USM made a request to the Governor to include $10 million for teacher education as an additional workforce enhancement request, but the request was not included in the Governor's Budget for 2021. USM will continue to work with the deans of education at USM institutions to support recruitment and retention of students into programs. We will look for external funding, share best practices, and continue to collect evidence to support future enhancement requests.

P-20: General Topics
Kirwan Commission: This past year's state P-20 agenda has been dominated by Kirwan Commission recommendations. The Chancellor was the only higher education representative appointed to the 25-member Commission. Last week, the State Legislature took up the Kirwan Commission legislation: Senate Bill 1000/House Bill 1300. Under the legislation, the state would contribute $2.6 billion by fiscal 2030 to local schools, while local jurisdictions would be asked to spend $1.3 billion in the next 10 years. The current legislation identifies three sources of funding for higher education:

- Scholarships for teachers ($2 million in 2021, $4 million in 2022, $8 million in 2023, $12 million in 2024, and for FY2025 and each year thereafter, $18 million (§18-1056);

- Matching funds maximum of $500,000 per year to institutions of higher education that receive grant funding from a non-state source to increase the quality and diversity of applicants for teacher training programs (§6-123 and §17-402); and
- Teacher Collaborative Grant Program (§6-120) to provide funding up to $2.5 million for the development of innovative teacher training practicums. This funding was allocated as part of last year's budget, and MSDE recently announced three awards: Bowie State University; University of Maryland, College Park; and Morgan State University.

Governor's P-20 Leadership Council: Secretary Tiffany Robinson (Maryland Department of Labor) is the new chair of the P-20 Leadership Council (succeeding Secretary Kelly Schulz). USM representatives on the Council include Chancellor Jay Perman, President Ron Nowaczyk (FSU), President Aminta Breaux (BSU), and Dr. Karen Olmstead (Provost, SU). The Council brings together leaders from all education segments, as well as the business and workforce community, to address policy issues that cross boundaries, such as college and career readiness, workforce shortage areas, teacher quality and quantity, high school/college alignment, and civic education. The Council meets four times a year (P-20 Home Page).

National Association of System Heads (NASH): NASH is a national organization, led by Dr. Rebecca Martin, and housed at the USM headquarters in Adelphi. The organization represents 40 Systems in 31 states. USM engages teams of faculty and institutional representatives in NASH initiatives, providing national leadership in strategic areas leading to student success.

> *Taking Student Success to Scale* (TS3) is a degree completion initiative led by a collaborative of higher education systems and campuses (NASH Home Page).
> TS3 interventions include: Redesigned Math Pathways, Predictive Analytics, and Scaling High Impact Practices. USM institutions have embraced these three evidence-based interventions, and NASH supports bringing these interventions to scale across multiple states and university systems.

Kirwan Commission High Level Recommendations

Workgroup 1: Early Childhood Education

- Expand full-day Pre-K at no cost for four-year olds and three-year olds from families with incomes of up to 300% of federal poverty level
- Capacity building for new and current programs (tuition assistance, training new staff)
- Implementation of school readiness assessment
- Expand Judy Centers, Family Support Centers, and Maryland Infants and Toddlers Program

Workgroup 2: High Quality Teachers and Leaders

- Teacher preparation will be much more rigorous, and induction will be expanded
- Raise standards for licensing
- Expand scholarships and loan assistance for highly skilled and diverse candidates
- Raise teacher pay to make it equitable with other highly trained professionals
- Develop career ladders for teachers and school leaders
- Train the State Superintendent and 24 local superintendents with leadership to implement recommendations of the Commission
- Change the way schools are organized and managed to increase amount of time available for teachers to tutor students, mentor teacher candidates, develop curriculum, etc.

Workgroup 3: College and Career Readiness Pathways

- Develop a fully aligned instructional system (curriculum frameworks, course syllabi, assessments, etc.)
- Establish and implement CCR standards set to global standards
- Provide necessary support to students to reach standards in math and literacy
- Revise HS graduation requirements
- Create a new CTE Sub-cabinet to drive a world class CTE System for Maryland (include leaders of industry as well as educators)

Workgroup 4: More Resources for At-Risk Students

- Add a concentrated poverty weight to funding formula to support intensive services for student and families to help them succeed
- Train all staff in all schools to recognized mental health as well as other issues related to trauma, safety, etc.
- Revise funding formula for special education
- Revise funding formula for English Language Learners

Workgroup 5: Governance and Accountability

- Commission will tie meaningful portions of increased funding to evidence that its recommendations are implemented, and greater student success is achieved
- The Advisory Board is charged with oversight and accountability for implementation of the Kirwan Commission Recommendations
- It is not intended to be a replacement for State Board of Education or other existing agencies

This summary of recommendations is for general information only. For a complete list of published recommendations refer to *Maryland Commission on Innovation and Excellence in Education Interim Report January 2019*

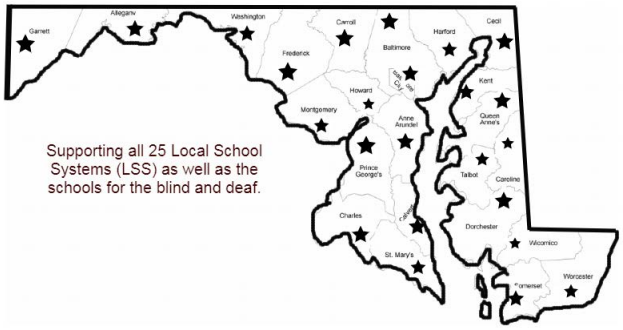
Maryland Center for Computing Education

The Maryland Center for Computing Education (MCCE) is designed to expand access to high-quality Pre-Kindergarten-12 (P-12) computing education by strengthening educator skills and increasing the number of Computer Science (CS) teachers in elementary and secondary education.

MCCE serves as a focal point for broader collaborative initiatives to increase the availability and quality of P-12 computing education across the state, including stakeholder meetings and partnerships; teacher certification efforts; standards and curriculum development; innovative pedagogical research and practices; training and awareness for administrators, educators, students, and parents; and coordinating with related national efforts.

Why Computer Science?

1. CS is a required 21st century literacy needed by every citizen in a digital world.
2. CS education strengthens the local economy by providing a technologically competent workforce.
3. Students develop collaboration, creativity, communication, logic, and problem-solving skills.
4. CS enhances innovation and knowledge to solve modern problems.
5. There is inequitable access in a field that is in desperate need of diversity.
6. CS is fun! CS builds interest and excitement with engaging activities for all students and teachers.



Local School System Support

All 25 Local School Systems in Maryland have received support and funding. The MCCE supports the development of sustainable and scalable plans, professional development, curriculum alignment and selection, counselor awareness, and teacher mentoring and support.

Higher Education Support

13 institutions of higher education with teacher preservice preparation programs have received support and funding from the MCCE in the form of grants, workshops, collaborative work sessions, and webinars. MCCE also facilitates collaboration nationwide and provides support for additional grant opportunities.

Statewide Support

MCCE funds the position of computer science specialist at the Maryland State Department of Education, offers an annual state summit on computer science education, provides statewide summer professional development, and hosts statewide programs to support teachers to earn certification in computer science.

By the numbers:

600+ teachers attending professional development for computer science in 2019 supported by MCCE.

13+ institutions of higher education working on grant funded projects in collaborative teams across colleges and departments of computing and education to build meaningful units into preservice programs.

25 local school systems are working on plans for every high school to provide access to computer science for all students and experience with computational thinking for every middle school student. Many have also started integrating activities, projects, and concepts into elementary schools as well.

State Requirements:

- Every high school offers a high-quality computer science class by 2021-22.
- Every middle school incorporates instruction in CS and computational thinking.
- Increase enrollment in CS courses of female students; students with disabilities; and students of ethnic, racial, and other demographics that are underrepresented in the field of CS as identified by the U.S. Equal Employment Opportunity Commission.

Funding: The Maryland Center for Computing Education was established and funded by the state through legislation with an initial investment of $5 million in 2018 followed by an additional $1 million in 2019. The funding is provided by a special, non-lapsing fund. The MCCE is charged to fund competitive grants to local school systems, work in consultation and collaboration with institutions of higher education, provide professional development and programs, maintain a clearinghouse of recommended resources, and communicate and promote activities that benefit computer science education.

Planning for Lasting Change: Since 2014, only 4 teachers have graduated in the state of Maryland who are certified to teach computer science. There are currently well over 200 teachers teaching computer science in Maryland. The short-term solution is to provide targeted, just-in-time professional development and mentoring to teachers who are from a variety of subject areas to fill the need. These teachers are provided with just enough training to teach a particular course or unit. The long-term solution requires knowledge and education across all sectors.

Research and Data: MCCE works in close association with the Maryland Longitudinal Data System Center (MLDSC) and is currently vetting and organizing existing data to make it accessible through an online public dashboard that will track student progress and engagement in computer science from PK-12 through higher education and/or workforce. The MCCE has supported school systems, higher education institutions, and other state providers of computer science education through the submission of 9 grants (3 more pending and 2 in draft) to the National Science Foundation, Department of Education, Department of Energy, as well as public and private funding institutions.

Partners and Collaborators:

ECEP CSforALL CS Matters CSTA Maryland

Contact information for the Maryland Center for Computing Education:
The Annual Report is available on the website cs4md.com
Dianne O'Grady-Cunniff, dogrady@usmd.edu
Director, MCCE

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Director of Research, MCCE

Bridging the Gap Between High School and College Mathematics in Maryland
Maryland Mathematics Alignment Project (MMAP)

The gap between high school and post-secondary mathematics continues to be a challenge in Maryland, just as it is across the nation. While meeting the needs of many college students, the traditional algebra to calculus mathematics pathway, required by most colleges, does not provide the mathematical skills needed for some majors and often has become a barrier to graduation for capable students. Over the last five years, curriculum reform has expanded mathematics options for college students. This reform is often referred to as *mathematics pathways*. Many colleges in Maryland currently offer mathematics pathways that include courses such as Statistics and Quantitative Literacy, as well as the traditional courses that lead to Calculus and beyond. These pathways courses provide a variety of general education mathematics options for college students. The Maryland Mathematics Alignment Project (MMAP) is designed to explore opportunities (and potential risks) for high school students to participate in mathematics pathways options before they enter college.

Maryland began its work on the Mathematics Pathways in 2014 through the work of the First in the World Maryland Mathematics Reform Initiative. As a result, progress has been made in the offerings of more mathematics pathways at the college level. However, Maryland is still missing a bridge between the high school mathematics coursework and the new college-level mathematics pathways. To begin to address this issue, representatives from the Maryland State Department of Education and the University System of Maryland, along with representatives from Maryland's K-12 and IHE communities, participated in a forum (May 5-7, 2019) hosted by the Conference Board of Mathematical Sciences (CBMS) entitled "CBMS High School to College Mathematics' Pathways: Preparing Students for the Future".

Maryland was one of 22 states invited to participate in the forum, hosted by CBMS, in collaboration with the Charles A. Dana Center at the University of Texas, Austin, and Achieve. CBMS has eighteen members whose primary objective is advancing the mathematical sciences. The Mathematical Association of America (MAA); the American Mathematical Society (AMS); the Association of Mathematics Teacher Education (AMTE); the National Council of Supervisors of Mathematics (NCSM), and the National Council of Teachers of Mathematics (NCTM) are among CBMS members. Drawing on the Dana Center Mathematics Pathways work and the expertise of various members of the CBMS societies, the forum provided an opportunity for a dialogue among a broad array of national stakeholders. The May convening was designed to provide support to state-leadership teams who wished to create a state-based task force that would work to put policies and practices in place to reduce or eliminate gaps between high school and college mathematics.

The Forum focused on three issues:

- **Responding to the changing role of mathematics in the economy.** The avalanche of data across all fields is spurring exciting and important work in mathematics. The transition years of grades 11–14 are critical for building the foundations for a workforce that can meet the evolving needs of the new economy.
- **Ensuring college readiness today and tomorrow.** High school and college mathematics educators are working collaboratively on this issue, recognizing the need for college-ready students, but also student-ready colleges. CBMS societies acknowledge the need for a broader understanding of how mathematics is and will be used, encompassing modeling, statistics, and data science. They also understand the need for active learning approaches that promote problem solving abilities and higher order thinking.
- **Articulating the mathematical pathways that will serve all students.** Changes in demographics, economic demands, and the mathematical sciences themselves are forcing reconsideration of the pathways into and through college-level mathematics. It is necessary to evaluate whether the course structures now in place still serve their intended purpose and to understand the alternatives that are available.

Through the forum, Maryland has the opportunity to build a leadership team that will work to help Maryland bridge the gap between high school and college-level mathematics coursework. The first step in this project will be to build a Maryland Mathematics Alignment Project Task Force (MMAP Task Force). To be truly effective, the MMAP Task Force should consist of representatives of all interests across the state including business and industry, as well as those who

shape educational policy and those who implement it at both high school and post-secondary levels, both two- and four-year colleges and universities. The MMAP Task Force will address curriculum standards, instructional practices, policies and regulations, professional development needs and messages.

If you would like to learn more about the Maryland Mathematics Alignment Project, please contact Debby Ward, Coordinator of Mathematics, Maryland State Department of Education (Debra.ward@maryland.gov).

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UNIVERSITY SYSTEM of MARYLAND

BOARD OF REGENTS

SUMMARY OF ITEM FOR ACTION,
INFORMATION OR DISCUSSION

TOPIC: Update on the USM New Student Enrollment Pipeline and Aggregate Student Success; USM-Wide Student Success Initiatives

COMMITTEE: Education Policy and Student Life

DATE OF COMMITTEE MEETING: Friday, March 6, 2020

SUMMARY: The report included is an information item that provides aggregate data about the student success achieved by new students entering the enrollment pipeline at University System of Maryland (USM) institutions. Information in the report includes the overall size and source of new student cohorts entering the USM pipeline between FY 2011 and FY 2019, aggregated retention rates for USM institutions, aggregated graduation rates, and progress toward eliminating achievement gaps. Data about the size and make-up of the new student pipeline is useful for understanding student success and campus initiatives for increasing student success.

In addition to this report, a presentation summarizing the student success outcomes and an update about system-level and campus initiatives will be given to the committee.

ALTERNATIVE(S): This is an information item.

FISCAL IMPACT: This is an information item.

CHANCELLOR'S RECOMMENDATION: This is an information item.

COMMITTEE RECOMMENDATION: Information Only		DATE: March 6, 2020
BOARD ACTION:		DATE:
SUBMITTED BY: Ellen Herbst	301-445-1923	eherbst@usmd.edu
Joann Boughman	301-445-1992	jboughman@usmd.edu

UNIVERSITY SYSTEM of MARYLAND

UPDATE ON THE USM NEW STUDENT ENROLLMENT PIPELINE AND AGGREGRATE STUDENT SUCCESS

Office of Institutional Research
Vice Chancellor for Administration and Finance
University System of Maryland Office
March 2020

This information item provides an update on the level of success achieved by new students entering the enrollment pipeline at University System of Maryland (USM) institutions. Information provided in the item includes the overall size and source of new student cohorts entering the USM pipeline between FY 2011 and FY 2019, aggregated retention rates for USM institutions, aggregated graduation rates, and progress toward eliminating achievement gaps. For additional information, please contact Chad Muntz, Assistant Vice Chancellor for Institutional Research, Data & Analytics at the USM at cmuntz@usmd.edu (301-445-2737).

New Student Enrollment Pipeline

To understand the level of success achieved by new students entering the USM enrollment pipeline, it is first helpful to understand the overall volume of new students enrolling at USM institutions, as well as where those new students are coming from. The number of new degree-seeking students entering a USM institution at any point during the fiscal year ranged from 32,000 in FY 2011 to over 43,000 in FY 2019. Importantly, these fiscal year cohorts include both new first-time students and new transfers. Like most university systems, the USM has experienced a change in the mix of new students comprising these cohorts as more non-traditional adult students have begun to pursue higher education, and the volume of high school graduates has decreased. Understanding this mix is important, in turn, for understanding student success as measured through retention and graduation rates.

Approximately two-thirds of all new students entering a USM institution between FY 2011 and FY 2019 came from one of two groups: First-time Students (whether First-time, Full-time or First-time Other, signifying anyone not full-time) who comprised approximately one-third of the total new student enrollment between FY 11 and FY 19, and New Maryland Community College (MDCC) Transfers, who comprised another third. The primary well-spring for both groups of new students – First-time Student and New MDCC Transfers -- remained the Maryland high school graduate pipeline.

In addition, a third of all new students entering the USM enrollment pipeline between FY 2011 and FY 2019 came from less established, but rapidly growing, pipelines. These students, who are classified in this report as "New Transfer Other," include some students who swirled between Maryland 4-year institutions, but the majority of this group transferred to USM institutions from a four-year or two-year institution *outside* the state of Maryland. The majority of these students transferred in with credit and were often students who were older, working adults. USM's agile, distance education institution, the University of Maryland Global Campus (UMGC), enrolled most of the "New Transfer Other" students. A breakdown of the enrollment pipeline by these groups is presented below in Table 1.

Table 1. Fiscal Year New Degree-Seeking Cohort

	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019
First-time, Full-time	12,475	12,124	12,102	14,058	13,996	14,020	14,923	14,465	15,212
First-time Other	893	1,051	1,089	1,459	1,415	1,120	1,175	730	778
New Transfer MDCC	9,863	10,851	11,743	11,071	11,450	11,403	12,007	12,075	11,460
New Transfer Other	8,445	9,046	8,892	10,056	12,470	15,045	15,131	16,057	16,080
Total	31,676	33,072	33,826	36,644	39,331	41,588	43,236	43,327	43,530

Retention Rates

The fall retention rate of New, Degree-Seeking Students decreased from a high of 76% for the FY 2011 cohort to just under 70% (69.5%) for the most recent (FY 2019) cohort. The decrease in retention was attributable to the growth in the number of "New Transfer Other" students discussed above. Because these students stop-out and/or transfer between multiple institutions, they historically have lower retention rates overall, which impacts the USM average. The highest retention rates were achieved by First-time, Full-time students and Maryland Community College Transfers. See Table 2 below for additional information.

Table 2. Fiscal Year New Degree-Seeking Cohort
Retention Rates to the Next Fall Semester

	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019
First-time, Full-time	84.6%	84.7%	85.0%	86.4%	85.2%	85.0%	85.2%	85.7%	86.4%
First-time Other	43%	21.0%	18.8%	21.0%	28.6%	31.3%	35.1%	36.7%	34.6%
New Transfer MDCC	81%	78.9%	79.0%	79.3%	79.2%	80.2%	80.3%	79.4%	77.6%
New Transfer Other	63%	58.4%	56.5%	58.9%	59.6%	56.7%	54.8%	53.7%	49.6%
Total	76.4%	73.6%	73.3%	74.2%	73.5%	72.1%	72.0%	71.1%	69.5%

Graduation Rates within 6-years of Entry

Over the last four fiscal years the six-year graduation rate for New, Degree-Seeking Students has improved from 57% graduating within six years of entry (for the cohort that entered in FY 2011) to 61% (for the cohort that entered in FY 2014). Importantly, this increase came while the overall number of new students also increased. Because the USM increased its rate of student success at the same time it increased the number of students enrolled, the overall number of degrees awarded each year also increased (see Table 4).

Table 3. Fiscal Year New Degree-Seeking Cohort
Graduation Within Six Years

	FY 2011	FY 2012	FY 2013	FY 2014
Cohort	32,610	34,456	35,076	36,644
Graduated	57%	56%	57%	61%

Table 4. Baccalaureate Degrees Granted

FY 2011	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019
21,227	22,585	23,238	23,724	25,048	25,776	26,280	26,657	27,039

As with retention, the different types of new students entering the USM enrollment pipeline impacts the aggregate graduation rate for the USM. First-Time, Full-Time Students and MDCC Transfer Students had the highest graduation rates compared to the "New Transfer Other" students. However, rates improved significantly for students who began and enrolled full-time. Table 5 below provides the number and six-year graduation rate broken down by group for the most recent (FY 2014) cohort.

Table 5. FY 2014 Degree-Seeking Cohort
Graduation Within Six Years

	N	%
Total	36,644	61%
First-time, Full-time	14,058	73%
First-time Other	1,459	5%
New Transfer MDCC	11,071	68%
MDCC Full-time Only	7,546	76%
New Transfer Other	10,056	44%
Other Full-time Only	4,423	66%

Closing Achievement Gaps

Beginning in 2008, the USM launched an initiative with an ambitious goal of closing existing achievement gaps between students by 2020. While USM Institutions have improved outcomes for lower-income and minority students since 2008, achievement gaps have remained for all types of new students. Once the academic preparation, transfer credit, and attendance status were held constant, however, data show that the graduation gaps have narrowed. Although this report was not designed to provide a detailed update on campus progress toward closing achievement gaps, Table 6 below summarizes, based on the most recent fiscal year data (FY 2014), the graduation gap for underrepresented minority students compared to the total student cohort for USM as a whole. Continued progress toward closing achievement gaps would further improve overall USM student success rates, increase enrollment, and increase the baccalaureate degrees conferred for Maryland's workforce.

Table 6. FY 2014 Degree-Seeking Cohort
Underrepresented Minority (URM)
Graduation Within Six Years

	N	URM Grad %	URM Gap %
Total	12,395	50%	-11%
First-time, Full-time	4,169	60%	-13%
First-time Other	766	5%	0%
New Transfer MDCC	3,622	61%	-7%
MDCC Full-time Only	2,288	70%	-6%
New Transfer Other	3,847	37%	-7%
Other Full-time Only	1,610	58%	-8%

Conclusion

The USM's most recent analysis of the new student pipeline and student success measures shows that USM institutions have increased new student enrollment and increased student success. This success has come despite an increased mix in the sources of, and types of, new students enrolling at USM institutions. That mix, in combination with the attendance status of these students, ultimately influences retention and graduation rates. The data in this report suggest that USM institutions will be pressed to achieve similar results in the future without 1) continued efforts to improve student success among part-time, non-traditional students, 2) further narrowing of achievement gaps, and 3) engaging in more outreach to former students and near completers. The pipeline of future high school graduates will continue to decrease nationwide. This has the potential to negatively impact future new student enrollment and the number of new transfers coming from community colleges. In summary, to sustain enrollment and provide the graduates that Maryland's workforce needs, the USM and its institutions must continue to improve on the already high-level of student success they have achieved.

UNDERGRADUTE PIPELINE ANALYTICS: ENROLLMENT & SUCCESS AT USM

USM-WIDE STUDENT SUCCESS INITIATIVES

Committee on Education Policy & Student Life

March 6, 2020

Chad Muntz
Dr. M.J. Bishop

University System of Maryland

University System of Maryland

Overview

- Highlights major USM undergraduate pipelines
- Offers insights about degree completion and retention as a System
- Provides context for the upcoming USM Enrollment Projections
- Campus initiatives and programs for student success

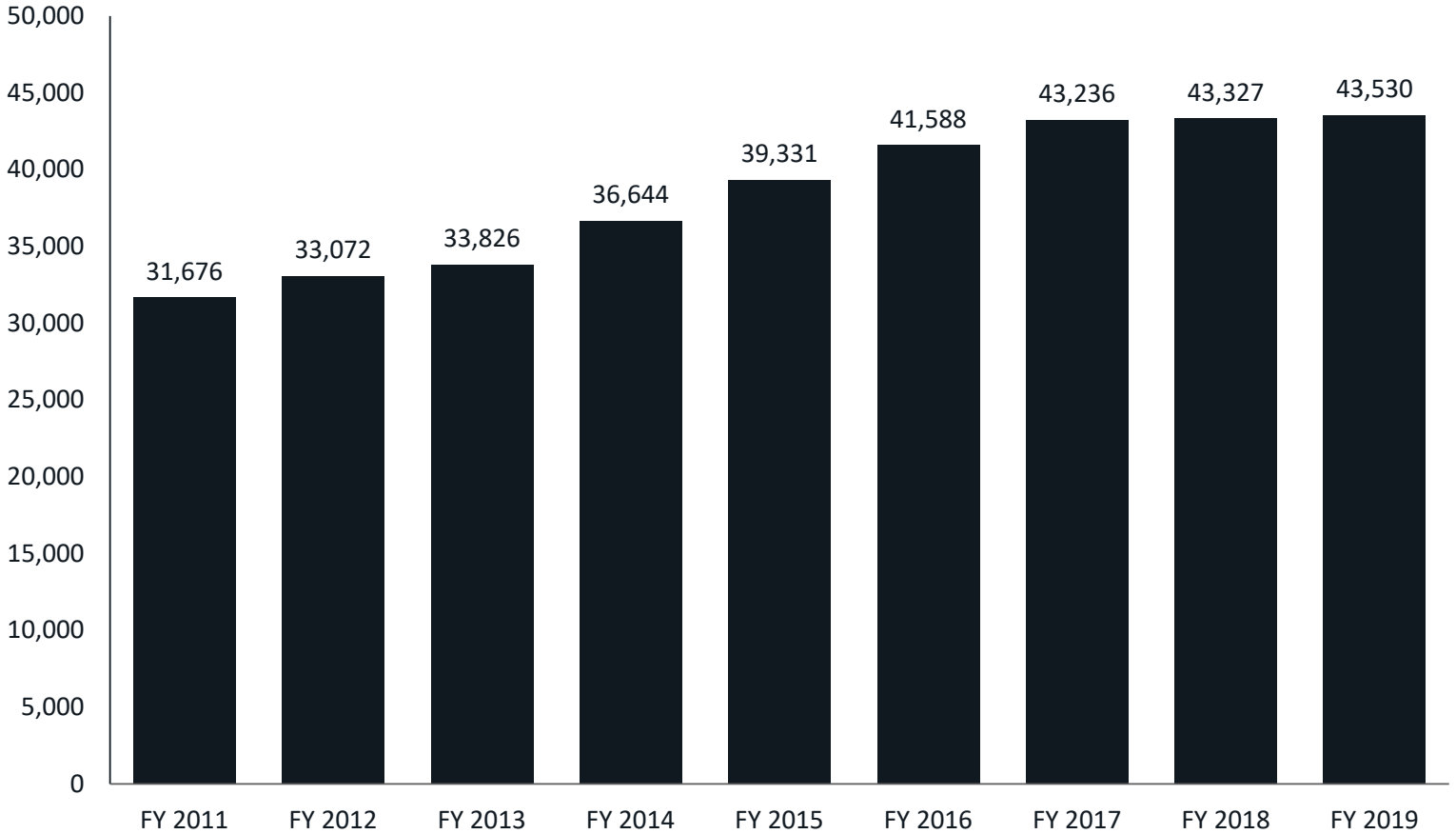
Fiscal Year Degree-Seeking Students & Graduation Rates

University System of Maryland

University System of Maryland

Total New Fiscal Year Undergraduate Degree-Seeking Enrollment

Fiscal Years 2011 to 2019



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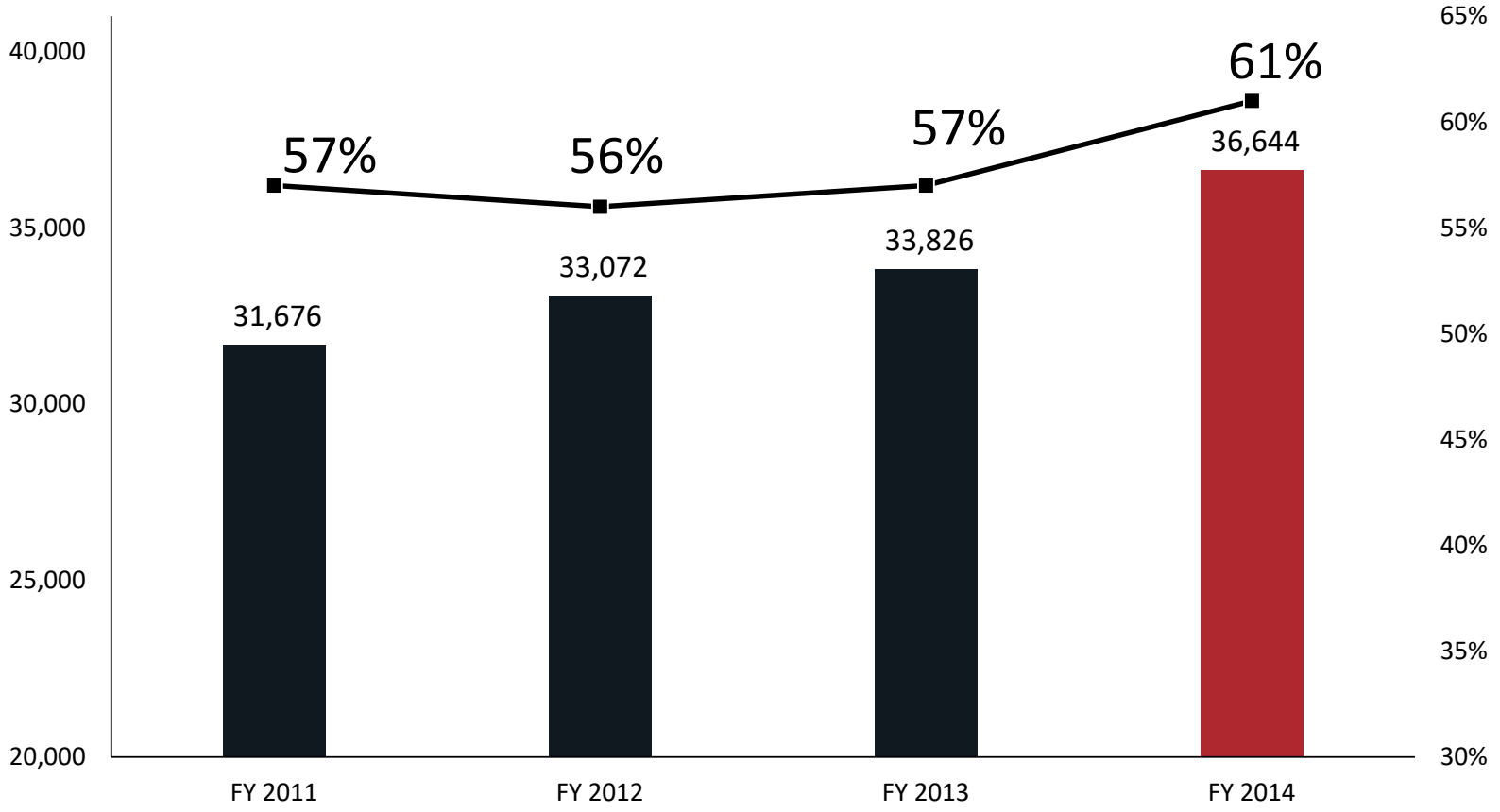
University System of Maryland

Graduation Rates Increased while Undergraduate Degree-Seeking Enrollment Increased

Fiscal Years 2011 to 2014



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* Graduated within six fiscal years of entry; For example, FY 2014 included six fiscal years of graduation FY 2014 through FY 2019

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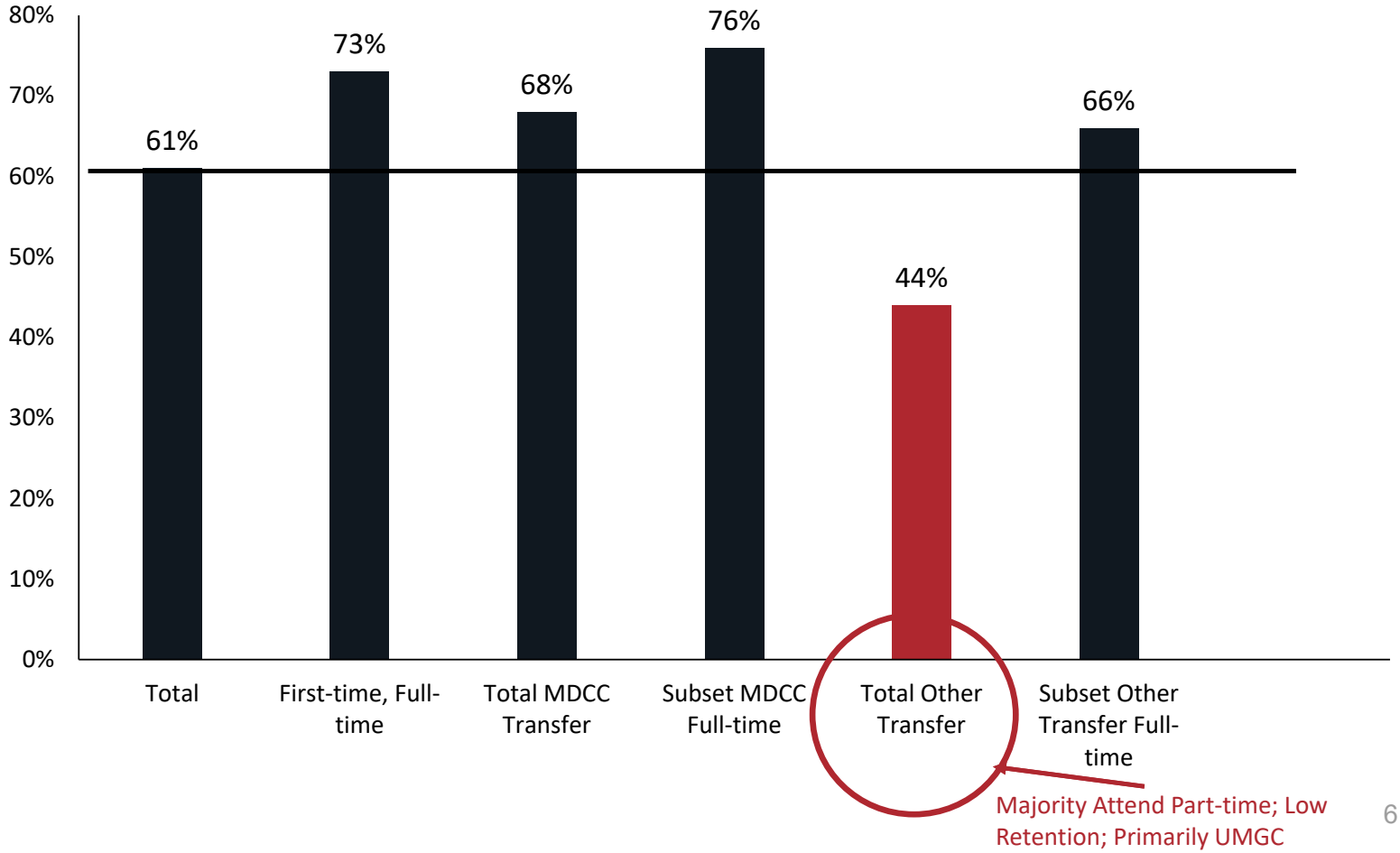
FY 2014 Six-Year Graduation Rates

By Entry Type of New Undergraduate Degree-Seeking Students



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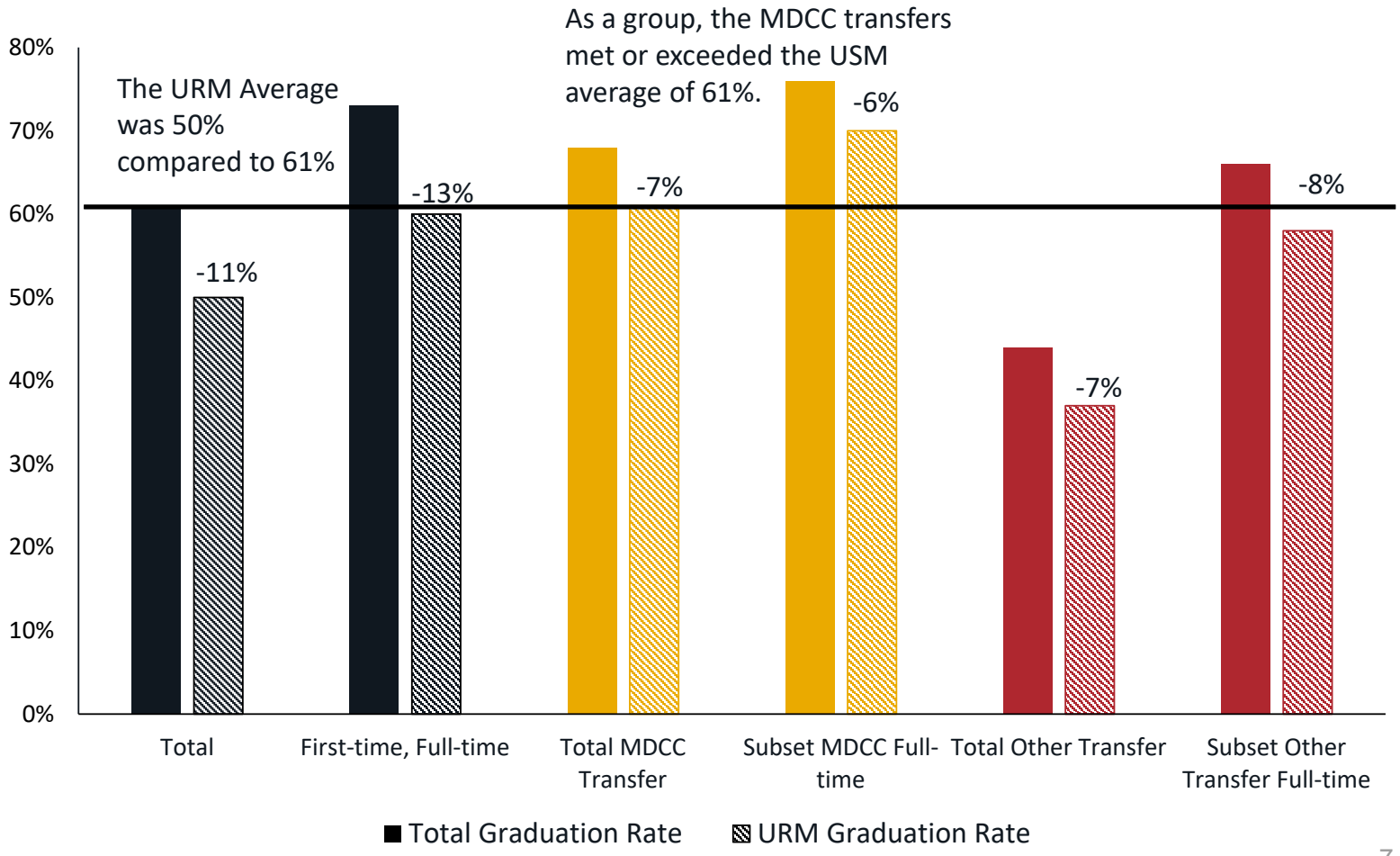
FY 2014 Six-Year Graduation Rates

Achievement Gaps for Underrepresented Minorities (URM)



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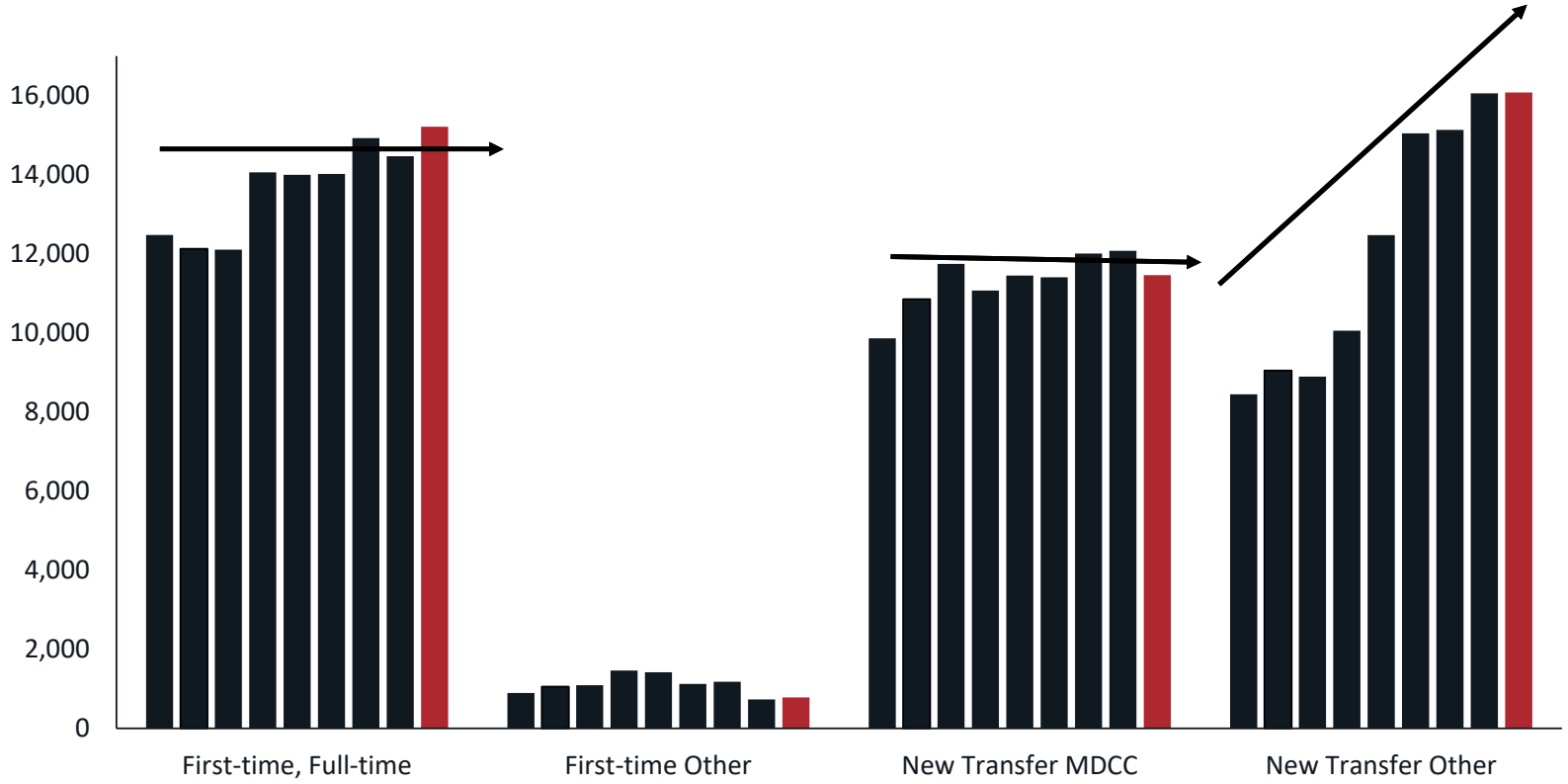
Undergraduate Pipeline, Retention & Future Enrollment

University System of Maryland

University System of Maryland

New Undergraduate Degree-Seeking Enrollment by Entry Type

Fiscal Years 2011 to 2019



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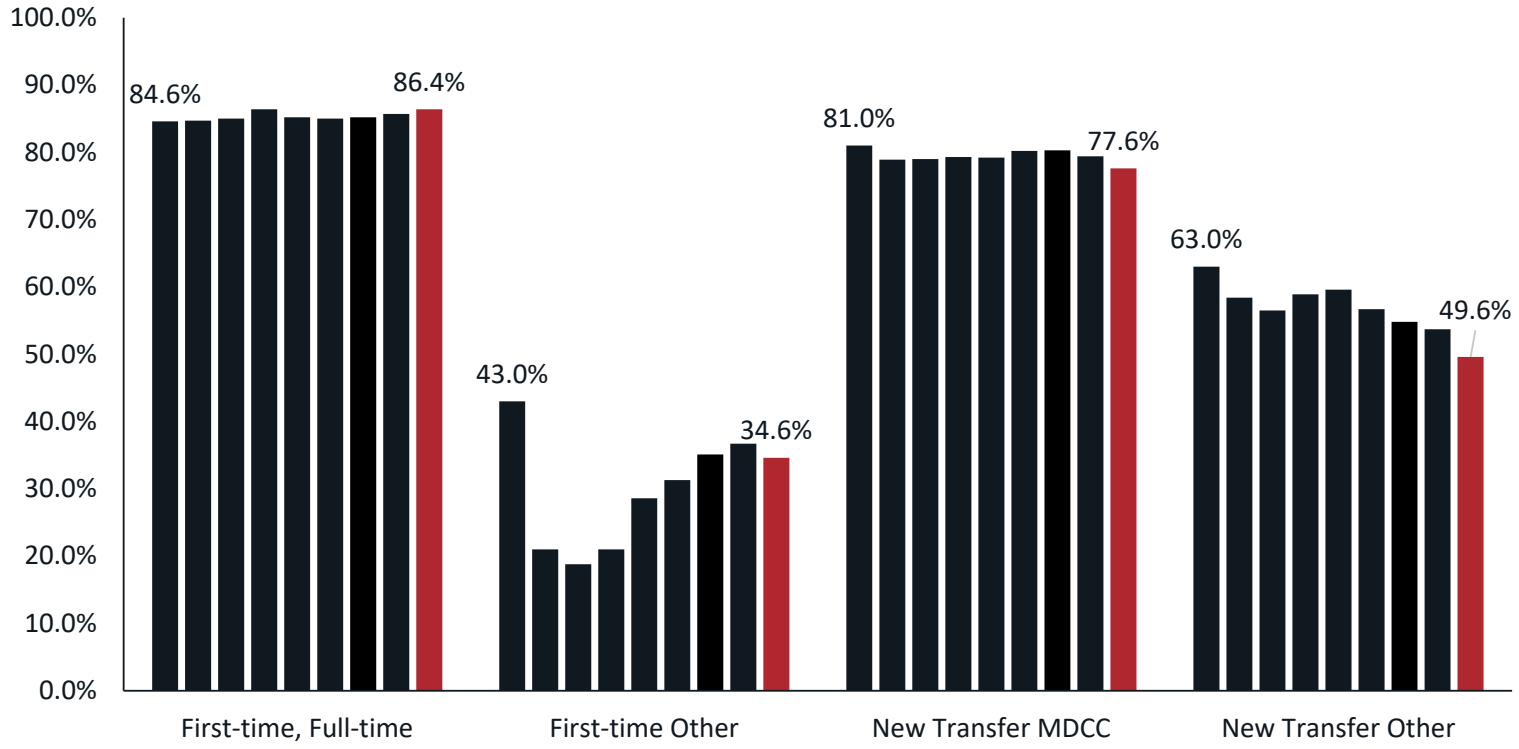
Retention Varies by Entry Type

Fiscal Years 2011 to 2019

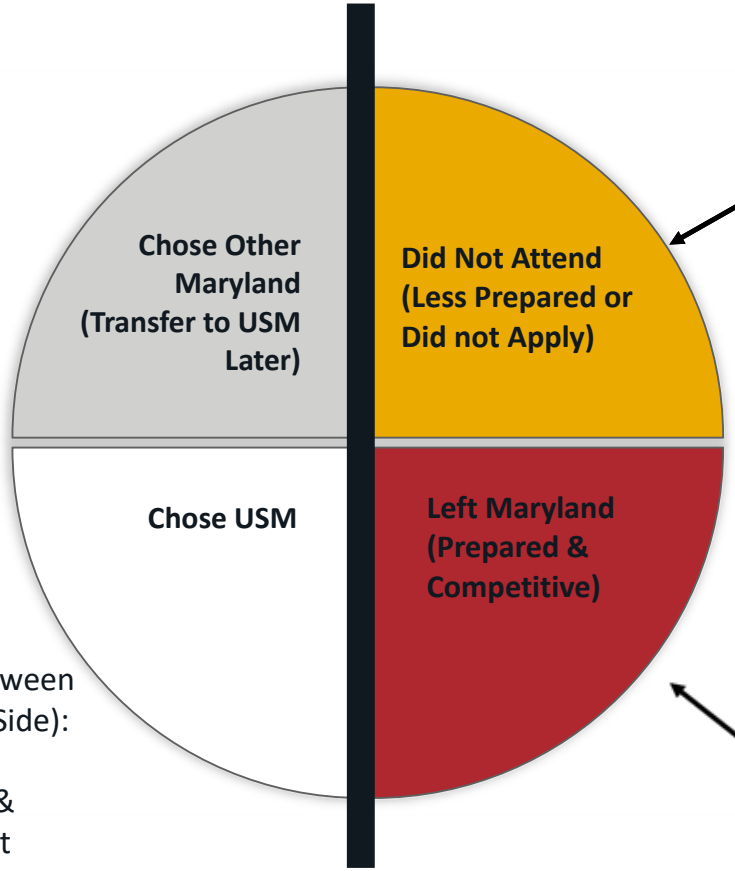


|---- Primarily Maryland High School Graduates ---|

"Swirl" & Adults
Primarily UMGC

University System of Maryland

Recent Maryland High School Graduates > 60,000 per year



Left Side: Enrolled in MD

Right Side: Did not Enroll in MD

Hispanic Population Growing With Low College Participation

Defining competition as between Maryland institutions (Left Side):
-One MD Institution Wins;
-One MD Institution Loses &
-In total, Maryland does not increase enrollment

Maryland is a "Net Exporter" of high school graduates. Choose similar/same programs and institutions out of state at higher costs.

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USM Undergraduate Pipeline Summary

- USM institutions enrolled approximately 43,000 new degree-seeking undergraduate students FY 2017- FY 2019
  - First-time, Full-time stable
  - MDCC Transfers are decreasing
  - New Other Transfers increasing
- Graduation rates improved with more students – most recent 61%
  - Highest Rates for well-prepared and full-time students
  - Achievement Gaps remain for underrepresented minorities
- Future enrollment and degrees
  - Depend on volume of new students
  - Retention
- In recent years, new student enrollment was increased by New “Other Transfers, which have lower retention and graduation rates

USM-Wide Student Success Initiatives

University System of Maryland

University System of Maryland

Retention Programs - Access

- Online programs and courses.
- Near-completer programs.
- Flexible course scheduling.
- Degree planners.
- Stackable credentials.

University System of Maryland

Retention Programs - Affordability

- Need-based financial aid.
- Dual degree and accelerated degree programs.
- Reducing textbook costs.
- Financial literacy programs.
- Food pantries and “career closets.”
- Finish4Free programs.
- Targeted resources to support first-generation, lower-income and underserved students.

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Retention Programs - Achievement

- Summer bridge programs
- Improving developmental mathematics pathways
- First-year experience programs
- Academic success/resource centers
- Undergraduate learning assistants (ULAs)
- Early alert programs.
- Improved academic and career advising
- Living learning/residential learning communities
- Course redesign initiatives

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Transfer Students

- Working to improve articulation system (USM)
- Collaborating with MDCCs to improve existing transfer pathways and on-site advisement/admission
- Pre-transfer advisement
- Scholarships and Outreach
- More intentional orientation programs.
- Transfer student associations, centers, and mentor programs
- Credit for prior learning.

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Questions?

University System of Maryland

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OFFICE OF THE CHANCELLOR

August 15, 2019

The Honorable Nancy King
Chair, Senate Budget & Taxation Committee
3 West Miller Senate Office Building
Annapolis, MD 21401

The Honorable Maggie McIntosh
Chair, House Appropriations Committee
121 House Office Building
Annapolis, MD 21401

RE: 2019 Joint Chairmen's Report – Report on Improving Student Completion (R75T00), Page 201

Dear Chair King and Chair McIntosh:

Language in R75T00 on page 201 of the 2019 Joint Chairmen's Report requires that the University System of Maryland Office to report on improving student completion. From p. 201 of the Joint Chairmen's Report:

> *As the number of Maryland high school graduates becomes increasingly diverse and more students follow a more nontraditional college route, e.g., transferring to multiple institutions, changing enrollment status, and entering college later, institutions will need to develop programs and pathways to help all students succeed. The budget committees are interested in the institution's 5- and 10-year goals, strategies, and metrics used to benchmark progress in recruiting, retaining, and graduating students.*

Attached is the University System of Maryland's Report on Improving Student Completion that includes important system-level context to set a foundation for how we are collectively addressing these issues as well as separate responses from each institution regarding their specific goals, strategies, and metrics for recruiting, retaining, and graduating students.

I am happy to address any questions you may have regarding this response.

Sincerely,

Robert L. Caret
Chancellor

Enclosures

cc: Sarah Albert, DLS; Sara J. Baker, DLS; Joann Boughman, USM; Cathy Kramer, DLS; Ellen Herbst, USM; Patrick Hogan, USM; Beth V. McCoy, DBM

UNIVERSITY SYSTEM of MARYLAND

JOINT CHAIR'S REPORT ON IMPROVING STUDENT COMPLETION

The University System of Maryland (USM) is growing and becoming more diverse. Of the 176,423 undergraduate and graduate students across USM, over 100,000 identify with a race or ethnicity or country other than "White, US Citizen." Additionally, the number of "non-traditional" undergraduate students attending USM institutions is also growing. According to the Maryland Higher Education Commission Data Book (2019), 35% of USM undergraduates are 25 and older and, of those older students, about 70% attend college part-time. Further, increasing numbers of students are starting their postsecondary journey with us in different places; having started college later, transferred from another institution, or otherwise changed their enrollment status. These students are typically independent from their parents and need financial support. Almost 30% of students enrolled in USM institutions receive Pell grants.

USM and its institutions are aware of these changes in the characteristics of the students we serve, particularly with respect to their constant, competing tension between life obligations and educational obligations. We are collectively working to address this shift in student needs by developing programs and pathways that increase access, affordability, and achievement in order to help *all* students succeed. This document reports on the University System of Maryland's and its institutions' 5- and 10-year goals and metrics used to benchmark progress, as well as our strategies for recruiting, retaining, and graduating students.

STUDENT RETENTION AND COMPLETION RATES ACROSS THE USM

Over the last 10 years, the USM's undergraduate retention and completion rates have improved for first-time students, largely attributable to the Closing the Achievement Gap initiative, which began in 2008 to focus on closing retention and completion gaps for low-income students and underrepresented minorities. Increases were incremental but are noticeable 10 years later. In 2008, the baseline retention for first-time, full-time new students was 82% and the baseline graduation rate was 62% at the institution of entry. The most recent retention rate was three points higher at 85% and the graduation rate was four points higher at 66% for the cohort that graduated in FY 2018. At the same time, the USM also increased success for Maryland community college students transferring into USM institutions, with graduation rates improving nine points from 48% in FY 2008 to 57% in FY 2018.

At the same time, the USM grew from 137,000 in FY 2008 to over 176,000 students by the fall 2018 semester. This enrollment growth came from increases in student retention as well as increases in new student enrollment. The Managing for Results Report (MFR) tracks the total new degree-seeking student enrollment for a fiscal year cohort, which includes part-time and non-traditional students as well as traditional and full-time students. In FY 2008, the USM enrolled nearly 32,000 new undergraduate, degree-seeking students whereas, by FY 2018, the USM enrolled over 41,000 new undergraduate, degree-seeking students. Retention and graduation rates increased during the past 10 years as well, with the largest increase coming from underrepresented minority students. The underrepresented minority new student growth increased from 9,800 new students, or 31% of the FY 2008 new student cohort, to 16,500, or 40% of the FY 2018 new student cohort. Closing achievement gaps in this way has been necessary to increase USM success rates and benefit more Maryland students.

According to the longitudinal analyses published by the National Student Clearinghouse and the Student Achievement Measure (SAM), USM student completion outcomes also exceed national comparisons.

The percentage of first-time, full-time degree-seeking students who graduate at any USM institution across the USM is 66%, 12 points higher than the national average of 54%. Additionally, the percent of community college transfer students who earn a bachelor's degree across the USM institutions is 57%, 15 points higher than the national average of 42%. Finally, the USM's Fiscal Year graduation rate that combines all new, degree-seeking students was 56% within 6 years of entry, which means that, on average, every new USM student, inclusive of full-time, part-time, first-time, and transfers, graduate from USM at a rate higher than the national rate for the first-time, full-time first-year students. The following table summarizes USM graduation rate improvement and the corresponding national average rate over the previous 10 years.

	FY 2008 Baseline		FY 2018 Current Progress 5-Years		FY 2018 National Averages
Cohort Description	**#**	**Graduation**	**#**	**Graduation**	**Graduation**
Fall First-time, Full-time	12,893	62%	14,672	66%	54%
FY MDCC Transfers	8,993	48%	12,154	57%	42%
FY All Students	26,202	54%	43,315	56%	NA

SYSTEMWIDE GOALS

While the USM's average graduation rates improved over the last ten years and continues to exceed national averages, we are still working to improve student success, particularly with an eye toward addressing the needs of our changing student demographics. Success rates differ by campus and by different entry cohorts. Based on the combined enrollment goals reported by each university (see below), we have calculated the following 5-year and 10-year summary benchmarks for the entire University System of Maryland:

	Current Baseline Success			Future Goals					
				5-Years			10-Years		
Cohort Description	**#**	**Retention**	**Graduation**	**#**	**Retention**	**Graduation**	**#**	**Retention**	**Graduation**
Fall First-time, Full-time	14,672	85%	66%	14,000-15,000	86%	67%	14,000-15,000	88%	68%
FY MDCC Transfers	12,154	79%	57%	11,500-12,500	79%	58%	11,500-12,500	80%	59%
FY All Students	43,315	71%	56%	43,000-44,000	71%	56%	43,000-44,000	72%	57%

ACCESS, AFFORDABILITY, AND ACHIEVEMENT INITIATIVES ACROSS THE USM

With an eye toward improving college access, overall affordability, and academic and career achievement for our evolving population of students, the institutions of the University System of Maryland have implemented strategic plans that support increasing enrollment and improving retention and student success. Using the framework of access, affordability, and achievement, the following sections will provide an overall snapshot of the kinds of programs and initiatives offered by USM institutions to support the ever-changing and diverse student populations they serve.

Access

Enrollment Programs

Statewide, college access is a core strategic priority that aligns with the enrollment metrics that each USM institution establishes for the campus. Essentially, across the USM institutions there is a wide range of comprehensive enrollment programs and initiatives dedicated to increasing access for students who enter college following non-traditional pathways, particularly those who transfer and/or enter

later. Further, as mandated in statute, University of Maryland University College (UMUC) functions as the state's open access institution and is primarily focused on serving transfer students, military-affiliated students, veterans, and working adults.

Across the remaining system institutions, students are admitted based on academic preparation and prior academic success. The admissions decision criteria do not include race/ethnicity, family income, age, or any other non-academic demographic factors. Each university manages enrollment in total and does not set benchmarks for the exact number of any specific subgroup of students. All new student numbers are general estimates extrapolated from demographic shifts in Maryland high school graduates and should not be interpreted as set recruitment quotas for institutional demographic goals. After students enroll, the universities monitor students and student subgroups to improve student success and close any achievement gaps.

Selected Recruitment and Pre-Admission Programs:

- Continuous improvement of undergraduate recruitment, marketing and outreach, open house events, and admissions to increase the percentage of diverse students that enroll.
- Advising and student success planning for those that transfer and/or enter college later.
- Improved articulation agreements between institutions.
- Consortiums to continuously promote new student pathways.
- State-wide, on-site Maryland community college recruitment and pre-transfer advising to support students to enroll on-campus or at a regional higher education center (RHEC).
- Rewards and support for community college students seeking to transfer, including admission application waivers, guaranteed admission, early orientation and registration, and guaranteed housing.
- Campus-wide networks of staff who work with students prior to and during the application and admission process.
- Provision of transfer credit services to determine the acceptability and awarding of credits for courses completed at other institutions.
- Focus on Dual Enrollment programs to better prepare students for matriculation.

Online Education

Confronted with changing demographics and the prospect of lower enrollments, the USM institutions are also exploring new delivery models. Many are planning to move courses and programs online in an effort to attract and retain students regionally, nationally, and globally. However, rather than view online education simply as a panacea for enrollment challenges, USM institutions are taking a more strategic approach that capitalizes on the affordances of online to more effectively reach the students we serve in new ways. When implemented well, online education promises to expand access to students unable to come to campus on a regular schedule, reduce the overall cost of attendance, and improve achievement through personalized, modular content and credentials. In other words, online education affords higher education institutions the flexibility to envision new ways to fulfill their student success missions.

USM is also the only state higher education system with a standalone online institution. The University of Maryland University College (UMUC) began offering its first online courses in 1993. By 2007, 80 percent of all stateside undergraduate enrollments at UMUC were for online courses, and 94% of all UMUC students – graduate and undergraduate – took at least one online course each year. Today, all of

UMUC's bachelor's degrees can be completed entirely online. In FY2018, UMUC offered 865 distinct courses online and had more than 285,000 worldwide online course enrollments.

Across the rest of the USM institutions there are nearly 80 degree and certificate programs that can be completed entirely via distance education. Further, a significant proportion of USM students enroll in at least one distance education course during a calendar year. In addition to UMUC's enrollment, over 39,000 undergraduate students and nearly 12,000 graduate students enrolled in at least one distance education course across the other USM institutions.

To help fuel even more growth in online education, the USM Kirwan Center for Academic Innovation's USMx initiative is providing system institutions with access to innovative e-learning technologies (including edX, the non-profit "massive open online course" provider from MIT/Harvard) as well as resources, support, and planning for strategic implementation of online learning to provide anywhere, anytime learning opportunities, giving students the flexibility to interact with content, faculty, and learning communities in the ways that best meet their needs. The USMx team is actively working with eight different USM institutions on developing online courses/programs and is involved in some level of consulting on strategic planning with two more. USMx is working with MarylandOnline on a model for a Seat Bank exchange to fill low-enrollment courses and continues to work with Quality Matters and USM Institutions on online course quality. USMx has been discussing opportunities for more targeted workforce and economic development efforts via edX. The University of Maryland, Baltimore County (UMBC); the University of Maryland University College (UMUC); the University of Maryland, College Park (UMCP), and Towson have expressed interest in exploring economic development possibilities via edX.

Affordability

Financial Support Programs

USM institutions also offer a variety of incentive and scholarship programs to help students afford college, which also improves student completion. Unfortunately, limited funds mean these campus programs continue to fall short of addressing the ever-growing gap between available institutional funds and the number of students with demonstrated financial need to remain enrolled. The many financial support programs provided by USM institutions include:

- Resources to support first-generation, lower-income and underserved students to close the achievement gap.
- Full and partial scholarship awards for in-state transfer students from Maryland community college focused on access, academic success, diversity and student leadership.
- Merit-based scholarships for full-time and parttime transfer and/or late-entry students.
- Partial scholarships awards for limited number of semesters for Maryland in-state residents.
- Financial aid navigation sessions.

Reducing Textbook Costs

Replacing costly textbooks with open educational resources (OER) shows promise to reduce students' cost of college attendance significantly while maintaining, or perhaps even improving, learning outcomes. The USM Kirwan Center's Maryland Open Source Textbook (M.O.S.T) initiative began in 2013 to support faculty across Maryland public higher education institutions in adopting freely available, openly licensed instructional materials for their courses. In part due to $100,000 in support from the legislature in 2017, M.O.S.T. has been able to support OER adoptions in 113 courses at 24 institutions

across Maryland, saving 39,000 students $154 per course on average or approximately $6.3 million cumulatively.

While M.O.S.T. is being led out of the University System of Maryland's William E. Kirwan Center for Academic Innovation, faculty and staff at both 2-year and 4-year institutions across Maryland have participated in M.O.S.T.'s programs. Now in partnership with MarylandOnline, the Maryland Association of Community Colleges (MACC) and the Maryland Independent College and University Association (MICUA), M.O.S.T. is providing participating faculty with the support they need to locate materials and incorporate them effectively into their classes.

At the same time, the University of Maryland University College (UMUC) recently became the first 4-year public higher education institution to move entirely to zero-cost instructional materials, saving their 84,000 students at least $20 million per year and clearly demonstrating how quickly savings to students can add up when these initiatives are taken to scale. Additionally, programs like UMBC's Course Materials Initiative, or CMI, are providing students with reduced pricing for course materials through digital textbooks and ancillaries, such as WebAssign, ALEKs, Connect, MindTap or FlipIt. The course materials are integrated directly into UMBC's learning management system, Blackboard, via a common digital platform (VitalSource). The Bookstore negotiated directly with publishers to obtain special UMBC pricing; currently UMBC has contracts with four publishers: Cengage, MacMillan, McGraw Hill and Norton. Cost savings per course range from 15% to 55%, depending on the textbooks and ancillary materials, with an average savings of 34%.

Achievement

Retention and Completion Programs

Investment in programs and services that support student achievement at USM institutions is paramount. Campus achievement programs provide multiple resources and services, talent development strategies, and curricular and co-curricular pathways to improve retention and completion. In addition, these programs also serve as ongoing strategic initiatives to help close the achievement gap, particularly for low-income, first generation, underrepresented groups and late-entry students at USM institutions. The following list comprises the kinds of advisement, engagement, and mentorship programs that USM institutions provide:

- Courses scheduled to meet the needs of diverse undergraduate students.
- Academic advising initiatives to evaluate, refine and promote effective experiences.
- Pathway programs to provide transfer students with a clear academic plan inclusive of course requirements, number of credits, and GPA.
- Intensive advising for students who demonstrate difficulty maintaining good academic standing.
- Opportunities for mature and non-transfer students to connect with peers through engagement activities and social media.
- Support for the full-time status of incoming transfer students in the first semester to improve completion.
- Retention initiatives for students who have financial difficulties.
- Regional higher education center (RHEC) partnerships with community colleges.
- On-site teaching at community colleges by 4-year faculty.
- Academic and peer support to assist students pursuing science and math degrees.

- Residential hall learning communities established to promote shared learning.
- Community building for students to become academically and socially successful to improve completion.
- Innovative academic programs tailored to address the needs of first generation, low income, underserved and non-traditional students.
- Assessment to help students identify learning deficits and participate in high-quality peer-assisted tutoring, academic coaching, study groups, and workshops.
- Access to campus food pantry, hygiene products, household items, and career clothing closets.
- Support for transfer students to complete associate's degree while finishing bachelor's degree through the state's reverse transfer program.

Continuous Improvement of Teaching and Learning

From 2006-2014, the USM provided support for the redesign of 57 courses across the system. All 11 of the degree-granting institutions at the time participated in the project at some level. When the program ended in AY 2013-14, over 143,000 students had already been served by these redesigned course, cumulatively. Based on net decreases in drop, fail, and withdrawal (DFW) rates, a cumulative 10,200 of those 143,000 students passed these redesigned courses who might not have passed otherwise. For subsequent academic years, the redesigns should help an additional 2200+ pass these courses annually. For 3 more years subsequent to the USM-supported initiative ending, course redesign continued through campus-led initiatives using state enhancement funds. USM institutions met their cumulative goal to redesign a total of 48 additional courses with the support of state enhancement funds during fiscal 2014-2017, reaching a cumulative total of 105 redesigned courses over the 11-year period (2006-2017).

Since 2017, campus-based course redesign initiatives led out of the USM have evolved into exploring the role various technologies (such as openly-licensed instructional materials, adaptive learning tools, and gamification) can and should play in the continuous improvement of teaching and learning as well as curricular redesign of developmental math pathways, general education programs, and the inclusion of high-impact learning experiences such as internships, service-based learning, and undergraduate research opportunities. Looking ahead, USM institutions are now also beginning to explore more modular approaches to curriculum delivery leading to stackable credentials.

GOALS, METRICS, AND STRATEGIES FOR RECRUITING, RETAINING, AND COMPLETING STUDENTS BY INSTITUTION

As discussed, USM institutions have demonstrated continuous improvement and are continuing their work to increase students' success. The rest of this section provides overviews by institution of the goals and metrics each is using to measure success as well as their strategies in the areas of student access, affordability, and achievement.

Bowie State University

Goals and Metrics

Bowie's success rates are below the national average for first-time, full-time new students. However, the transfers and other new students exceed national averages. Bowie's 5-year and 10-year goals will increase first-time, full-time students' success to approach national averages. Some of the subgroups where Bowie will focus to improve student success are with low-income students, male first-time, full-time new students, and non-traditional transfer students. The institutional student success rates are expected to increase as these groups succeed at higher rates.

	Current Baseline Success			Future Goals					
				5-Years			10-Years		
Cohort Description	#	Retention	Graduation	#	Retention	Graduation	#	Retention	Graduation
Fall First-time, Full-time	898	73%	43%	950-1050	>76%	>45%	950-1050	>78%	>48%
FY MDCC Transfers	386	74%	59%	400-450	>77%	>63%	400-4505	>79%	>68%
FY All Students	2,001	72%	52%						

Strategies

Access:

- On-site Maryland Community College Recruitment and Advising Program
- Regional Center Partnerships
- Laurel College Center
- New Comprehensive Community College Matriculation Agreements
- Amazon Web Services Partnership

Affordability:

- Transfer Student Scholarships
- Bowie State University continues its commitment to increase institutional need-based financial aid**.** Since FY 2010, need-based institutional aid awarded increased from $1.78M to $3.11M in FY 2018. FY 2018 institutional merit aid, which also supports needy students, totaled $2.27M.

Achievement:

- *Classroom Renovation Committee*: The office of the Provost and the Vice President for Administration and Finance began a process of assessing classroom space this past fall. This past spring, we continued our renovation work by creating a committee comprising one faculty member from each College, undergraduate and graduate students, DIT, Media Operations, OSRP and Title III. We have allocated $250,000 for classroom renovations this summer. Our goal is to provide for the design and construction of campus classrooms, computer labs, and testing labs that incorporate 21st century learning styles and methods in teaching. The new classrooms will accommodate current teaching styles and encourage collaborative learning using Eye2Eye, Tiered-Collaborative, 6Round, and flipped classroom style layouts. Six classrooms have been identified and are currently undergoing renovation and are expected to be available this fall. The design includes a research model for accessing learning.

- *Racecourses, Capacity Building Initiatives*: Bowie State has four racecourses that are aligned with our institutional strategic vision, "Racing to Excellence" (Advising and Retention, Assessment and Accreditation, Student Success and Curriculum). Each Race course team included faculty, staff and students to ensure full community engaged as they were charged with assessing the specify area and presenting recommendations. In April, the committees completed their reports and presenting the findings and recommendations during an open forum. Implementation of various recommendations will take place this fall.
- *Building Competencies*: The Office of the Provost instituted a collaborative-learning partnership with faculty and staff to facilitate a better understanding of curriculum redesign, High Impact Practices, Teaching and Learning Assessment, Entrepreneurship Curriculum Integration and Living Learning Community Development. Teams of faculty and staff participated in national trainings (AASCU, Washington Center Institutes and Price-Babson) that provided tools for making the necessary changes to improve student engagement and success. These teams are now taking the lead to integrate and support faculty with institutionalizing best practices.
- *Student Success Partnership*: Through the leadership of the President and Provost, Bowie State University is one of six institutions participating in the American Association of State Colleges and Universities (AASCU) Center for Student Success (CSS) pilot program over the next 18 months. The Bowie State University Team members include the President, Provost, Special Assistant to the Provost, Assistant Vice President for Institutional Effectiveness, Director for the Center for Excellence in Teaching and Learning, Director for Engaged Learning and Student Support and senior professor leading faculty online learning. The program is anchored in AASCU's definition of student success and is oriented by the experience-based assumption that large-scale institutional transformation is imperative for sustainable student success. The pilot includes a thorough assessment of these institutional aspects: leadership and culture; information technology; strategic finance; policy; advising and student services; academic readiness/development education; digital learning and culture of evidence. We have reviewed very specific institutional data and assessed our strengths and weakness with respect to all of the aforementioned aspects. We have also completed KPIs for these aspects. This fall, we will engage the entire university community in a dialogue to define student success in the Bowie State University context.
- *Bulldog Scholars Academy (BSA):* is the University's summer bridge program. The BSA's core mission is to "jump start" freshmen and familiarize them with college life and expectations. The current program includes two general education courses, supplemental instruction and tutoring and co-curricular activities focused on several themes.
- *Integrating New Students*:The Enrollment Management Division has revised the new student experience program for fall 2019 to address an objective in the University's strategic plan. Specific learning outcomes have been developed for new freshmen and transfer students. Transfer student orientation is 1-day with concurrent sessions, resource fair, academic advising and course registration and a social activity. New freshmen orientation is an overnight experience expanding on the transfer session and incorporating additional social activities to help with building friendships between students and interactions with University services. Parents will be joining their students for lunch on the second day and participate in a closing ceremony.
- *Academic Advising Center Freshmen Course Clusters:* encourages opportunities for friendships and natural study groups that help students remain focused on academics while making connections that lead to commitment to the institution and greater student engagement and better grades. The freshmen course clusters are based on academic major and are anchored by the Freshmen Seminar Courses most often taught by a seasoned departmental faculty thus connecting students

early on with the academic department, its faculty, expectations of the program and co-curricular activities.

- *Tutoring Services*:The University maintains three tutoring centers as well as online tutoring to support student success. Bowie State University's English/Writing and Mathematics laboratories are focused primarily on students taking developmental mathematics, English and reading courses but also assist others in college-level classes. The Tutoring and Supplemental Instruction Program offers both individual and group tutoring sessions in the following content areas: biology, chemistry, computer science and technology, English, French, mathematics, physics, physical sciences and Spanish. SMARTHINKING is available 24/7/365 providing assistance in English, writing, mathematics and STEM disciplines.
- *Upper division College Retention Coordinators:* The four college-based retention coordinators assist students in resolving academic, financial and personal barriers to academic success by monitoring student achievement, infusing student success strategies into courses, and serving as a student advocate.
- *Bowie's Career Development Center* is now in the Academic Affairs Division to allow for greater integration between student career planning and academic programming. In addition to student career planning, the Center is working with academic departments to ensure that business and industry expectations are aligned with the curriculum to ensure our graduates are prepared for the workforce.

Coppin State University

Goals and Metrics

Coppin State University's student population is comprised primarily of non-traditional, African American, with family responsibilities, and an average age of 26 years. CSU, on average, graduates 450 students annually. While there is room for growth in the retention and graduation rates reported by the University, there is an upward trend in the data. There is an increase in both four-year and six-year graduation rates – currently 17% and 24% respectively, which is below the national trend. The graduation rate for transfer students is 52% four-year and 60% six-year. Coppin's focus is to increase enrollment numbers and improve retention and graduation rates for the students it serves, who are non-tradition, first generation, inner-city, and African American.

	Current Benchmarks		FY 2024 Goals		FY 2029 Goals	
Student Population Description	**#**	**Retention**	**#**	**Retention**	**#**	**Retention**
FTFT Fall New Students	383	63%	450-500	68%-75%	501-570	76%-85%
Pell Recipients FTFT Fall New Students	294	65%	345-384	68%-75%	385-438	76%-85%
Fiscal Year MDCC Transfers	192	73%	225-251	75%-82%	251-285	83%-88%
Pell Recipients Fiscal Year MDCC Transfers	88	76%	103-114	78%-85%	115-130	86%-89%
Non-Traditional Students	1122	69%	1149-1170	73%-75%	1172-1199	76%-85%

Strategies

Across the country, colleges and universities are responding to challenges in recruiting and retaining students. Predictions of declining numbers of high school graduates are proving true and colleges are scrambling to maintain numbers. Historically Black Colleges and Universities (HBCU) suffer more acutely from declining demographic shifts. Schools like Coppin must compete more vigorously against larger, better-resourced institutions, who admit students at greater rates, including students they would not have admitted previously. Added to the challenge of competition, higher education influencers now support a shift in emphasis - from access to completion.

The University is committed to a culture of data-driven decision-making, sustained evaluation and data democratization. Every desktop user on campus has access to live data dashboards that displays statuses in recruiting, registration and retention. The goal of data democratization is to encourage all members of the Coppin community to focus on increasing enrollment, retention and student success. Through data democratization, students, faculty, staff, and administrators have the potential for input on the planning process. Access to data analytics allows for effective and efficient use of resources for advancement of the University.

Coppin offers a rigorous curriculum supported by all areas of the campus. These programs support enrollment, retention, and graduation initiatives and continue to yield positive results. Such programs and interventions include:

- **Coppin State University Academic Advisement Center** is a centralized academic advising center available to students during the weekdays with extended hours. The Center is designed to meet the academic advising needs of students and to support the institution's student retention and enrollment goals. The Center provides a centralized location for Coppin students to seek

academic advising services and serves as a center-point for all of the advising outlets on campus, i.e. departmental faculty advisors, First Year Experience, athletics, honors programs and mentoring initiatives. In addition to academic advisors being available in the Center to work directly with students, faculty with strong expertise to connect with students give time to the Center. The inclusion of faculty in the Center offers students an array of academic advisement resources to be a success at Coppin State University.

- **Coppin Student Parent Organization (CSPO) –** CSPO addresses the unique needs of the university's student-parent population. The organization serves as a resource for students' academic and personal needs and as a system support for their social needs as they progress towards degree attainment. The organization assists student-parents with managing their academic and parenting responsibilities in order to take full advantage of the college experience and provide a supportive network to encourage student engagement and persistence.
- **Career Services Center** - Delivering programs that enable students to develop lifelong skills in career planning, the Career Services Center serves to enhance the student's ability to make informed career decisions. Students are encouraged to visit the Career Services Center for further exploration of companies and other organizations that provide internships, practicum experiences, and career opportunities to Coppin students.
- **Our House Community Mentoring** - Our House provides mentoring for incoming freshmen through a combined peer mentoring and staff mentoring program. Commencing as a pilot program in AY2014, the program results indicate a higher freshman to sophomore retention rate and academic achievement when compared to students who do not take part in the program. Second year retention rate for 2016 Our House cohort was 77%, with 90% second year retention rate for the 2017 cohort. The fall 2018 cohort contained 60 students with a 98% retention rate to the spring 2019 semester.

Access

- **Recruitment** Three years ago, Coppin partnered with EAB to expand its recruiting footprint beyond Baltimore and the state of Maryland. The partnership has been largely effective utilizing an online interface with our IT infrastructure. Working with EAB to identify new recruiting markets, our first-time full-time student enrollments have stabilized after a 55% increase. EAB accounts for approximately one-third of generated applications to Coppin and about 25% of its first-time full-time enrollees.
- **Transfer Programs:** The Office of Admissions at Coppin State University recognizes the importance of enrolling transfer students.
    - In September 2017, Coppin State University initiated a major marketing campaign called "Transfermation". The campaign included billboards, posters at MDOT bus stops, print collateral and CSU's website to elevate the public's awareness of our new transfer initiative. 'Transfermation" has maintained a constant presence on CSU's website and advocated at recruitment staff visits to community colleges across the state of Maryland.
    - A major part of the "Transfermation" campaign is to introduce our **Transfer Thursday** sessions. Over the academic year, the Office of Admissions hosts five on campus sessions to provide more in-depth information to interested students about transferring to Coppin State University. The public is given the opportunity to register for the session of their choice.

- **"Finish 4 Free"** Coppin State University (CSU) has partnered with Baltimore City Community College (BCCC) to offer two years of tuition-free (last dollar money) enrollment at CSU to graduates of BCCC.

- **Financial Aid verification Outsourcing -** Last year Coppin State University outsourced financial aid verification which allowed financial aid counselors more time to work directly with students in the office. Financial aid verification is a tedious, time-consuming process and for HBCUs a significant proportion of students are selected for verification. Students and families are often reluctant to provide additional information and, as a result, financial aid is often delayed if proper documentation is not received. Using the outside verification program has worked extremely well because it has removed Coppin as the asking agency, thereby reducing the tensions between the university and the students. This service serves a dual role of supporting affordability.
- **Summer Academic Success Academy (SASA)** - The Summer Academic Success Academy is an intensive, six-week residential and campus-based program designed to prepare students for the transition from high school to college. Baltimore City high school graduates can develop confidence and earn college credit, prior to the start of the fall semester. SASA students receive information on financial literacy, career planning, personal growth, and other campus resources and support services. The impact of this program is reflected in retention numbers: 96% of Summer 2016 SASA enrolled students were retained for the fall semester; 93% of Summer 2017 for fall (with a 90% second year retention rate); and 97% of summer enrolled students for fall 2018 semester. Retention across the semesters continue.

Affordability

- **Actively engaged in Open Education Resource (OER) adoption –** OER support 5 General Education Requirements (GER) gateway courses to reduce textbook costs for students to ensure that they are ready with course materials on Day 1. These courses are sometimes bottleneck courses, and so attaching these courses are geared towards achieving success for students who may not have success in these courses. The CSU OER program is *Eagles Soar*.
- **Reverse Transfer Agreement -** Coppin State University (CSU) has a signed Reverse Transfer MOU with Baltimore City Community College (BCCC) to promote and facilitate the awarding of the associate degree for eligible students who transferred from BCCC to CSU prior to earning the associate degree. MOUs with other community colleges are under development.

Achievement

- **New Student Orientation -** The program has been completely revised to welcome new students and family members to Coppin State University. Renamed “Welcome to Nest”, new student orientation provides academic advising, registration, state-mandated education programs, a parent’s orientation program, and business access to resolve financial or housing matters. The program helps to set students on a course for success by aligning the activities of Summer Academic Success Academy, First Year Experience Program, and Enroll Now, which is offered by the Office of Admissions.
- **Summer Academic Success Academy (SASA)** - The Summer Academic Success Academy is an intensive, six-week residential and campus-based program designed to prepare students for the transition from high school to college. Baltimore City high school graduates can develop confidence and earn college credit, prior to the start of the fall semester. SASA students receive information on financial literacy, career planning, personal growth, and other campus resources and support services. The impact of this program is reflected in retention numbers: 96% of

Summer 2016 SASA enrolled students were retained for the fall semester; 93% of Summer 2017 for fall (with a 90% second year retention rate); and 97% of summer enrolled students for fall 2018 semester. Retention across the semesters continue.

- **First-Year Experience (FYE)** - The First-Year Experience program serves as the advisement hub for first year students. Students receive extensive advisement and guidance through the completion of the first 30 credits of their General Education curriculum.
- **Academic Success Centers (ASC)** - The Academic Success Centers include at least a retention coordinator housed within each of the four colleges, who monitor student progression, perform registration outreach, and direct students to support services needed for success.
- **Academic Resource Centers for Basic Skills -** The University maintains a Writing Center, Mathematics Center, and Science Academic Support Center. These centers, which are coordinated by academic departments, are staffed by professional and student tutors and guided by experienced Math and Writing Coordinators are open to all students throughout the calendar year. Students are encouraged to bring course-related assignments, which guide the focus and level of support needed and/or requested by students.

Frostburg State University

Goals and Metrics

Frostburg State University's success rates are near national averages for its first-time, full-time students and exceed the same measures for its transfer students. Five- and ten-year goals include improving retention and graduation rates for underrepresented minorities and closing the gap for low-income students.

	Current Baseline Success			Future Goals					
				5-Years			10-Years		
Cohort Description	#	Retention	Graduation	#	Retention	Graduation	#	Retention	Graduation
Fall First-time, Full-time	777	77%	53%	750-850	80%	57%	750-850	82%	60%
FY MDCC Transfers	550	80%	66%	525-575	82%	69%	525-575	85%	72%
FY All Students	1,399	80%	60%						

Strategies

Access

The University has several initiatives – both currently in place and planned - that are specifically geared toward increasing enrollment and maintaining or increasing the retention and graduation rates of transfer students, including:

- *Evaluating and improving upon existing transfer and articulation agreements with feeder community colleges, as well as assessing the feasibility of establishing and promoting new pathways specifically in support of transfer students.*

  Frostburg currently has articulation agreements with 18 institutions, as well as several dual admission and reverse transfer agreements with various regional community colleges. Both pre-established agreements and several more in the planning stage help to increase access for transfer, diverse, and non-traditional student populations.

  Two agreements – one with Arundel Mills and the other with Cecil College – are designed specifically for students seeking to earn an FSU Bachelor's degree in Engineering with a concentration in either Electrical Engineering or Materials Engineering. Both programs are open to community-college graduates who have earned an associate's degree in Engineering and are designed to allow for flexibility in class scheduling (i.e., many courses are offered on-site, online, in the evenings, or as part of a condensed course schedule). Beginning in the fall 2019, there will be a dedicated admissions counselor at the Arundel Mills site. This FSU employee will be responsible for the recruitment of students who attend community college in the northeastern corridor of Maryland.

- *Working closely with community college vice presidents of academic affairs to establish a consortium and promote transfer student pathways.*

  The FSU Office of the Provost is collaborating with Academic Affairs divisions at several regional community colleges to develop a consortium that will be tasked with increasing the number of transfer students enrolled at Frostburg and other institutions in the region. Also, the Office of the Provost and Registrar will initiate contact with Maryland Community College transfer students who are eligible for the reverse transfer agreement program to encourage and assist with their application.

Affordability

- *Ensuring that Open Educational Resources (OERs) are a central part of the institution's strategic plan.*

  Strategic Planning Action Item #8 stresses the importance of ensuring that "technology is seamlessly integrated into the learning and campus experience." Open Educational Resources and Learning Management Systems are integrated into most FSU courses, and data are available and shared across all university software platforms to facilitate student success and university support operations. The Information Technology Master Plan is the critical component of this action item in that coordination and communication among faculty, staff, students, and IT staff is critical to enhancing the ease of use and seamless integration of data of on-campus IT products.

Achievement

The initiatives outlined below serve to make the transfer process increasingly effective and efficient, while also encouraging a higher level of involvement between the University community and its transfer student population. Specific initiatives include:

- *Using FSU's participation in the Excellence in Academic Advising (EAA) Initiative to evaluate, refine, and promote effective advising experiences for transfer students, as well as continuing the advising practice of encouraging all students to enroll in a minimum of 15 credits per semester, thereby reducing time to degree.*

  Strategic Planning Action Item #3 states that Frostburg "supports student success through comprehensive academic and career services that focus on the needs of students from admission through their years as alumni." In support of this goal, FSU has been selected to participate in the first national Excellence in Academic Advising (EAA) comprehensive strategic planning process, a program created by the National Academic Advising Association (NACADA, a global association dedicated to enhancing the educational development of students in higher education) and the non-profit Gardner Institute. Of 100 applicants for this program, only 12 institutions were chosen, including FSU.

  The EAA process will establish standards for the institution to evaluate and improve upon academic advising and will acknowledge the central role of advising in promoting student learning, success, and completion. A task force of almost 100 faculty and staff members have drafted an Advising Mission Statement and Goals and are currently completing their analysis of institutional data and evidence. This task force will gather for a two-day retreat in August 2019 led by an EAA Fellow to synthesize cross-conditional findings and begin drafting recommendations for an action plan to be implemented during the academic year. The EAA project will be the major driving force for improving and enhancing academic advising over the next five years.

- *Further developing retention and graduation initiatives for transfer students who are having financial difficulties*.

  As evidenced above, efforts to increasing transfer student enrollment serve as important components of FSU's strategic goals. However, as these initiatives help to increase transfer student enrollment at the University, there will also be an increasing need to provide additional support (both financial and academic) to this growing student population to maintain or increase its persistence and completion rates.

Frostburg has several programs that support transfer student enrollment, retention, and completion, including:

- The *Associate's Degree Scholarship*, which is awarded to transfer students who have earned an associate's degree from a Maryland Community College, have maintained a cumulative GPA of 3.0, and are transferring to FSU. This scholarship, which provides $2,500 per year for up to two years, has been awarded to 374 new transfer students over the last three years.
- The *RN to BSN program* has curricula based on sound theory and best online practices, while incorporating a multitude of teaching-learning modalities. The program accommodates working nurses, allowing them to further their education while keeping them at the bedside. It continues to grow (a 28.8% enrollment increase over the last five years: from 375 in fall 2014 to 483 in fall 2018) and adapt to evidence-based practices for online learning.
- Over the last five years, transfer student programs have been expanded to include a *mandatory orientation* that not only allows students to meet one-on-one with an academic advisor within their specific program, but also provides valuable information regarding the many campus resources available to them, including the Office of Student Affairs, the Brady Health Center, the Library, and Residence Life.
- *The Academic Success Network* (ASN) is a partnership of programs focusing on student success, including the Center for Academic Advising and Retention, Programs Advancing Student Success, Disability Support Services, and TRIO Student Support Services. Through these offices, students have access to academic advising and enrichment workshops, individualized and group tutoring, academic skills development, academic monitoring, financial literacy, and cultural activities. During AY 2018-2019, 135 transfer students utilized the various services of the Academic Success Network.
- In early 2018, FSU partnered with ReUp Education to re-enroll students who had failed to persist at the university. ReUp provides coaching to students who have neither graduated from FSU nor enrolled at another institution in order to help facilitate paths to graduation at Frostburg. In the spring of 2019 seven students were readmitted through engagement with ReUp Education (five remained enrolled in the summer of 2019). As of May 2019, 646 first-time students near completers have been contacted by ReUp Education.

Salisbury University

Goals and Metrics

National trends suggest that over the next decade, high school graduates will be much more diverse in terms of their race, ethnicity and college preparation. During this timeframe, Salisbury University (SU) is planning for moderate enrollment growth and expects to serve a much more diverse student body. Enrollment of historically underrepresented students, for example, has increased by 12 percent over the past five years and now represents 26% of SU's student body. The University also will seek to increase enrollments at satellite locations and to broaden access to students on the Eastern Shore, where college attainment rates are lower than in other parts of the State.

	Current Baseline Success			Future Goals					
				5 Years			10 Years		
	# (2018 Cohort)	Retention (2017 Cohort)	Graduation (2012 Cohort)	# (2023 Cohort)	Retention (2022 Cohort)	Graduation (2017 Cohort)	# (2028 Cohort)	Retention (2027 Cohort)	Graduation (2022 Cohort)
Fall First-Time Full-Time	1,285	81%	66%	1,435	83%	68%	1,435	85%	70%
FY MDCC Transfers	703	85%	65%	829	85%	66%	1,013	85%	67%
FY All Students	2,456	82%	72%	2,817	83%	72%	3,124	84%	72%

In the near term, SU will seek to increase its retention rate to 83 percent and its graduation rate to 68 percent for first-time students. In ten years, the University intends to reach an 85 percent retention rate and 70 percent graduation rate, while also seeking opportunities to help more students graduate within four years. It is important to note that SU's institutional metrics are already above national averages for all student groups.

Student Success Strategies:

- SU recently transitioned to a professional advising model for new students that allows for more targeted outreach and attention as they plan their academic pathways. Academic Advising Center staff conduct campaigns each semester to encourage non-registered students to re-enroll and meet with students for course registration and degree-planning sessions. These efforts will assist SU in improving retention rates and time-to-degree metrics.
- SU recently launched EAB's Guide, a mobile technology platform that provides students with tips and practices aimed at increasing their academic success. The Guide platform (called "Navigate at SU") allows for notification of important dates, academic program and career exploration and access to services. It also provides a better assessment of student engagement and risk factors. The platform was implemented in pilot form during spring 2019 and will be launched campus-wide in fall 2019.
- SU's Retention Think Tank and Four-Year Group are analyzing risk factors in student persistence. These administrative working groups identify and eliminate barriers to student success, launch outreach campaigns and improve campus processes. They currently are exploring the gaps between four-year, five-year, and six-year graduation rates to identify ways to assist students with improving their time-to-degree. For example, these groups recently examined data on the cost associated with students delaying graduation by an additional year. These data were used

to educate campus constituencies on the impact of time-to- degree on student debt and completion rates.

- The Registrar's Office is leading efforts to reach out to near-completer students who have less than one year's worth of credits remaining to complete a degree. The office is building messaging to assist students in better understanding how they can return and complete their degree through various pathways.
- The Powerful Connections program connects incoming students from diverse ethnic backgrounds with student mentors and diverse SU alumni. It offers a one-week pre-orientation program each year, followed by student-to-student mentoring throughout the first year. Powerful Connections students are typically retained at a higher rate than University averages.
- SU's TRiO Achieve program assists first-generation students, those with financial need and students with disabilities with academic coaching, financial education, learning and study strategies, and mentoring.
- The Center for Student Achievement (CSA) offers supplemental instruction, tutoring and coaching services based on best-practice models from its accredited center. Through its Supplemental Instruction program, the CSA supports the most rigorous classes on campus with peer-to-peer instruction and study groups to reduce the number of students earning grades of D or F or withdrawing from courses (DFW rate).
- SU offers approximately twenty Living Learning Communities (LLCs) each year to connect new students to their peers with similar interests. These students live together and take common courses supported by a faculty mentor. Students in LLCs have been shown to have higher average retention rates than those not engaged in LLCs.
- SU requires all first-time students to live on campus for their first two years, as our data indicates that retention and success rates are higher if they do so.
- Course Scheduler software helps students easily create scenarios to select the best schedules.
- SU has expanded its Parent Program efforts, including the addition of a social media tool for parent communication.

Strategies for Transfers

- The SU Admissions Office offers Transfer Tuesday programs through which prospective transfers may make individual appointments for advising sessions and tours of campus. This initiative has served roughly 700 incoming students.
- Admissions also offered its first transfer-specific open house programs in 2018-19, and broadened its invitation of transfers to Admitted Student Day and Scholars Day programming.
- The Transfer Student Association provides support and a sense of identity to transfer students on campus with activities and guidance.
- Admissions provides regular on-site advising and guidance sessions for transfer students on the campuses of our community college partners and has hosted students and staff from community college including transportation to our campus.
- SU added a program recruiter position to assist its satellite sites with outreach to students at multiple locations.

- SU offers transfer and Phi Theta Kappa community college honors society scholarships for transfer students, has expanded its housing offerings and has partnered with local entities to provide transfer students with more housing options. The University holds housing fairs on campus for transfer students.
- SU has an active reverse transfer program with all major partner community colleges. The University has also initiated special outreach and scholarship opportunities to neighboring Delaware Technical Community College, the key educational institution in an underserved area adjacent to Wicomico County.
- Through the work of its Associate Provost, SU has increased outreach to community colleges throughout the state to increase the number of articulations of two-year programs with SU degree programs. Nearly fifty current articulation agreements are available on the SU website at https://www.salisbury.edu/admissions/transfer-students/articulation-agreements.aspx.

Access and Affordability

- SU has implemented the Academic Works scholarship management system, which allows students to register and be matched to any potential scholarships the University offers. Students create an initial profile and are notified of scholarship opportunities that fit their profile. The software also assists Financial Aid staff in ensuring that SU Foundation-based scholarships are fully used.
- SU launched the Higher Opportunities and Possibility in Education (HOPE) program to provide specialized outreach to potential education majors recommended by local higher education leaders. The HOPE program is exclusively for students who are early childhood, elementary, secondary, or P12 teacher education majors and is SU's first effort to recruit specifically for education students as a way to address the teacher shortages on the Eastern Shore. There are three main components to the HOPE program upon admission: 1) the opportunity to live in one of the education-related LLCs, which includes clinical experiences during the first year; 2) an orientation to the profession with a dedicated faculty advisor and connections with upper-class education students as mentors; and 3) additional academic support to promote successful entry into the professional program, including Praxis exam study sessions.
- SU's Henson School of Science and Technology partners with a local school district to provide on-site dual enrollment courses in the sciences through Project Lead the Way.
- SU has increased its focus on students who have not decided on a major, providing more targeted advising, a Living Learning Community, and other resources for 'Still Deciding' students.
- In 2018, SU launched the Food for the Flock food pantry and Career Closet to support a professional clothing lending program to students with financial hardship. The University also offers emergency grants for students who are academically successful but encounter unexpected financial crises.
- SU is pursuing approval for a new integrated science track that will specifically support students who want to return and complete their education but may be missing certain course sequences; or those who are unable to complete a course sequence within a specific discipline (e.g., Physics) but are highly motivated to work in an applied science field and/or to fields that bridge academic disciplines.

Towson University

Goals and Metrics

Towson is an institution where students generally graduate at the same rate regardless of how the cohort is split into subgroups. For Towson to meet the 5-year and 10-year retention and graduation rate goals, the institution will continue to focus student-success initiatives and strategies on underrepresented minorities and low-income students.

	Current Baseline Success			Future Goals					
				5-Years			10-Years		
Cohort Description	#	Retention	Graduation	#	Retention	Graduation	#	Retention	Graduation
Fall First-time, Full-time	2,735	85%	73%	3,100-3,150	85-87%	73-74%	3,200-3,250	88-90%	74-75%
FY MDCC Transfers	3,064	87%	76%	2,950-3,000	87-88%	76-78%	3,000-3,050	88-90%	78-80%
FY All Students	6,460	86%	73%						

Strategies

Towson University has a number of initiatives for maintaining and increasing the enrollment, retention, and graduation rates of incoming transfer students. The initiatives aim to make the transfer process more efficient and painless, while fostering more involvement among TU's population of transfer students. Specific initiatives and high-level overviews are described below.

- *Transfer Student Center (TSC):* TU opened the TSC in January 2019. TSC provides comprehensive services to prospective, newly admitted, and currently enrolled transfer students. This one-stop experience provides: Pre-transfer advising, Major exploration, Transfer credit evaluations.
- *TSC on the Road:* TSC travels to partnering community colleges and provides services
- *Transfer Warning Program:* TU's Office of Academic Advising provides additional support and intensive advising for students who demonstrate difficulty in maintaining good academic standing
- *Transfer Student Mentor Program:* TU staff members mentor newly admitted transfer students. TU staff members who participated in the 2012 session of the President's Leadership Institute, developed this program, and TU's Division of Student Affairs currently administers it.
- *Mature / Non-Traditional Student Program:* TU's Center for Student Diversity fosters opportunities, both in-person and online, for mature/non-traditional students to connect with their peers. In addition to monthly lunches and peer support groups, students connect through social media groups.
- *Encouragement of Full-Time Attendance:* While causality cannot be inferred, there is a strong and positive relationship between the first-semester / full-time status of incoming transfer students and their retention and graduation rates. TU advisors will advise incoming transfer students of this relationship and encourage students, who are able to do so, to enroll full-time at Towson.

Towson University also has a number of initiatives for maintaining and increasing the enrollment, retention, and graduation rates of incoming transfer students. The initiatives largely aim to actively engage students from traditionally under-represented backgrounds and are described below.

- *The Community Enrichment and Enhancement Partnership Award (CEEP)* fosters an environment that appreciates and values an increasingly diverse student body; helps increase the recruitment, retention, and graduation of a diverse student body; and helps develop student interest,

involvement, and leadership in community-building initiatives. The standard CEEP Award amount is $2,500 per year ($1,250 per semester), and may be renewed for up to four years.

- *The Students Achieve Goals through Education (SAGE) Program* offers social activities, academic workshops, career development, and financial planning workshops. SAGE mentors assist students with career choice, major and minor selection, course registration, identifying campus activities, employment, roommate relationships, financial aid, navigating campus and other issues as they occur. Mentors and mentees meet weekly and develop lasting relationships.
- ***T****owson* ***OP****portunities in* ***S****TEM (Science, Technology, Engineering, and Mathematics)* program was founded by a grant from the National Science Foundation in 2007. It is dedicated to increasing the number of students from the Baltimore area successfully completing a B.S. degree in science or mathematics from Towson University. TOPS provides a suite of services that assist students to achieve academically. Individuals who are selected to participate in the TOPS program join a community of peers committed to the success of all participants in the program. TOPS participants are further encouraged to become peer tutors and mentors who assist other TOPS students as they pursue their degrees in the sciences or mathematics.
- *Residential Learning Communities* are intentional communities within the residence halls that enhance a student's Towson experience in a variety of ways. The learning and academic activities within the community are structured around an assortment of themes and student interests. Additionally, the specialized Residence Life Staff in these communities work continuously with campus partners to create a meaningful and unique learning environment. A benefit of being a member of one of these communities is that there is a direct connection with another University department and resources. Furthermore, these communities allow students to pursue common interests and form connections through those commonalities. TU residential learning communities are based on diverse themes that appeal to a wide range of student interests.
- *Undergraduate Admissions* has improved recruitment, marketing, and outreach to make Towson University a first-choice institution for an increasing percentage of diverse students. Undergraduate Admissions also runs **TU4U admitted student days**. These full-day events invite admitted students to meet other admitted students, current TU students and learn more about our academic programs and student life. They get to experience TU spirit, culture and campus as they attend information sessions, tour the campus, and talk to students, faculty and staff.
- *New Student Programs:* during New Student Orientation and Welcome to TU, we inform all students about the various campus supports and resources to help them become academically and socially successful. Students participate in a “Building Community” program where they discuss issues around diversity and inclusion and the responsibilities of a TU student.
- *Office of Financial Aid:* identify financial resources to support first-generation, low- income, and underserved students in an ongoing effort to close the achievement gap.
- *Office of Academic Advising:* identify and address needs of first-generation, low- income, and underserved students and develop innovative approaches to provide student support to non-traditional students.
- *Academic Achievement Center:* administer informal assessments to help students identify learning skills. They help coordinate high quality tutoring, peer-assisted learning sessions, academic coaching, study groups, study skills workshops, and reading placement testing.

University of Baltimore

Goals and Metrics

The University of Baltimore has a proud legacy of serving a diverse undergraduate student body. Fifty percent are first-generation college students, 52% are under-represented minorities, and 43% are Pell recipients. The population of first-time, full-time students is relatively low with over 80 percent of our students transferring in from other colleges and universities. UB's current graduation rate of 37% for first-time, full-time students is below USM and composite national averages but at a rate similar to or slightly higher than students at institutions with similar entering student profiles. Transfer graduation rates exceed USM and national averages. The current graduation rate is 62% for the full-time upper division transfers. Part time students at all levels have lower graduation rates. Given that approximately half of UB's students are part time, the focus for UB to improve overall success rates will be to improve the outcomes for lower-income, first-generation, and working adults with a special focus on part time students.

	Current Baseline Success			Future Goals					
				5-Years			10-Years		
Cohort Description	#	Retention	Graduation	#	Retention	Graduation	#	Retention	Graduation
Fall First-time, Full-time	107	77%	37%	120-140	80%	41%	140-160	82%	46%
Full-time Low. Div. Transf	155	74%	59%	120-140	79%	61%	140-160	84%	64%
Full-time Up. Div. Transfe	152	80%	62%	150-170	82%	64%	170-190	85%	69%
FY All Students	860	74%	55%						

Strategies: Over the past two years, UB has evaluated its organizational structure, programs and services to ensure alignment with the strategic priorities of the University, the University System of Maryland (USM) and the state of Maryland. As articulated in UB's new strategic plan, UB has a long-standing commitment to '*affordable excellence'*, fostering student success, and providing students with unparalleled access to low-cost pathways to professional careers in high-demand jobs.

Access:

- ***Pre-College Initiative***
    - *Summer Achievement Institute (SAI):* The SAI is the University's summer bridge program to support freshmen students who have been conditionally admitted. Since 2012, SAI had an average cohort of 26 students, with 84% completing the program. Of these completers, 93% enrolled at UB for the fall semester with 70% being retained in the second year.
    - *B-Power / Dual Enrollment Program:* B-Power is a UB-led initiative of the USM for increasing college and career readiness in Baltimore City students. Since fall 2016, B-Power has enrolled nearly 700 students in Dual Enrollment courses and 1,000 in pre-credit College Readiness coursework. Historically, 80% of students in B-Power Dual Enrollment have earned college credit, with 65% entering college upon high school graduation.
- ***Second Chance College Program:*** In 2016, UB was selected to participate in the U.S. Dept. of Educations' Second Chance Pell Grant initiative to offer a post-secondary education to incarcerated students prior to release. UB's program is being offered at Jessup Correction Institution. Approximately 50 students are enrolled in our B.A. in Human Services Administration.
- ***Flexible Course Scheduling:*** To meet the needs of our diverse undergraduate students, UB offers many of its courses – and even entire degree programs – in a variety of formats, including day-

time and evening formats, online, at the Universities at Shady Grove, in hybrid and/or in accelerated options. This flexibility allows students to pursue a degree at a time, and in a speed, that works for them, which leads to improved retention and completion.

Affordability:

- ***Institutional Need-Based Financial Aid:*** UB serves a large population of students who demonstrate financial need and we are committed to helping make education financially viable to academically eligible students. UB is developing a new, need-based aid strategy to support recruitment and retention efforts for Undergraduate students.
- ***Transfer Scholarships:*** Full- and part-time transfer students are eligible to receive merit-based scholarships. Students with the required cumulative GPAs and a minimum 30 transferable credits are awarded scholarships. Students who have completed an associate's degree are eligible for an additional scholarship. Merit scholarships are incremental to need-based aid.
- ***Near Completers Grant:*** Micro-grants awarded to undergraduates within 30 credits of graduation whose ability to graduate is affected by either no remaining financial aid or a financial hardship.
- ***Financial Literacy:*** faTV [https://ubalt.financialaidtv.com/] is an online library of video clips, which address popular financial aid questions. This simple and easy to understand tool provides information on important money management topics from savings, investing, managing credit, funding their education and protecting their financial information.
- ***Financial Clearance Initiative:*** An initiative is being implemented to ensure students can cover their tuition (via direct payment, financial aid or third-party support) each semester. Longer term, the initiative will encourage students to actively plan how to cover the cost of education.
- ***Reducing Textbook Costs:*** UB participated in the Open Educational Resources (OER) initiative which impacted 717 lower-division students and 900 upper-division students reducing the cost of General Education and Graduation Requirement course books. Projected savings to students of $678,000.
- **Accelerated Pathways to Graduate Studies:** UB is expanding our accelerated undergraduate/ graduate pathways, which allow students to use nine credits of their undergraduate degree towards their graduate degree, thus reducing the cost of their graduate education.
- ***Meeting the Non-Financial Needs of Students***: UB is committed to offering a variety of support services to students. Our *Campus Food Pantry* provides students access to food, hygiene products, and household items. The *Career Closet,* which is entirely stocked by donations, provides students with professional clothing and accessories at no cost to the student.

Achievement:

- ***Academic Momentum Campaign:*** UB has launched a number of new initiatives designed to help more students persist, graduate faster and with less debt. Details are provided below:
    - *Student Success Team:* Designed to support students, each student is assigned a personal academic advisor, career coach and, planned for fall 2020, a financial aid specialist.
    - *Mandatory Milestone Advising:* All undergraduate students are required to meet with an academic advisor upon entry into the university and at 45, 60 and 90 credits. Distinct advising syllabi are used at each touch point and include such topics as academic

progression; support services; career and internship opportunities; financial aid; and graduation school preparation.

- *Early Alert Program (EAP):* Designed to identity the 'early warning' signs of students who may be at risk, this initiative facilitates communications among faculty, advisors, and academic support staff to report attendance and to message advisors when students may be struggling. Students are then immediately engaged in more intensive advising and are often referred for tutoring services, other supplemental instruction, or specialized support for personal issues that may affect their academic progress. By fall 2020, Early Alert will be available in all UB's undergraduate and graduate courses.
- *Student Assistance Program (SAP):* This new program is designed to provide students with an easily accessible, safe and confidential means to assist with issues that may interfere with school, work or family responsibilities 24/7 365 days a year. UB's Clinical Case Manager provides on-campus threat monitoring, assessment and response when needed and serves as the on-campus triage resource.
- *Gateway Course Redesign:* In summer 2018 the Center for Excellence in Learning, Teaching, & Technology began working with faculty teaching gateway courses with higher-than-average DFW grade ratios to improve student success and reduce DFW grades.
- *15 to Finish Campaign (Step it UP Campaign)*: Launched in fall 2019, the goal is to educate students about the strong and positive correlation between full-time attendance and retention and on-time graduation. Advisors encourage students, who are able to do so, to enroll full-time (30 credits per year); part-time students will be encouraged to complete a minimum of 15 credit hours each year.

- ***Student Success & Support Services:*** In fall 2018, UB changed the name of Student Affairs to Student Success & Support Services and broadened its responsibilities to include traditional student affairs units, oversight of academic advising initiatives, and responsibility for student success analytics. This newly realigned division in combination with tutoring and other academic support services provided in the Bogomolny Library focus on student success from a multi-faceted and proactive perspective with the goal of increased retention, more timely degree completion, and a more robust student experience.
  - *Career and Internship Center (CIC):* The CIC's mission is to empower students to be intentionally engaged in their career development. Students participate in career coaching sessions; attend career fairs; and engage in classroom presentations under the guidance of a major-specific career specialist.
  - *Community Engagement and Enrichment:* The Rosenberg Center for Student Involvement fosters student's life-long learning and personal development, provides enriching co-curricular education, and creates purposeful connections built through their experiences in student programming and professional experiences.
  - *Tutoring and Academic Support Programs:* Nationally certified peer support programs provide tutoring, academic coaching, writing consultations, computer skills workshops, and study group facilitation to all students. Initiatives for FY20 include a newly dedicated space in the Library with drop-in services for writing, math, accounting, and business; increased synchronous and asynchronous online support; and expanded course-embedded support for writing across disciplines, academic coaching in pathways, and quantitative courses.

- ***Commitment to Transfer Students [Non-Traditional / Working Adults]:*** UB has long been an adult-serving, transfer-focused institution. In recent years, changing undergraduate student demographics and shifting enrollment trends at the community colleges have influenced the way we recruit and retain undergraduate students. As indicated, many of our students, particularly our transfer and non-traditional working adults are part time. As such, programs and services have been adapted to compliment many of the experiences students have at their previous institutions and their enrollment status.
    - *Reverse Transfer Initiative:* UB supports the completion of the associate's degree by actively promoting and facilitating the reverse awarding of the associate degree. Each semester, UB identifies community college transfer students who might be eligible for an associate's degree and sends a personal email inviting them to apply for consideration. Upon receipt of a student's application and consent form, UB – at no charge to the student – forwards the student's official transcript to the community college for consideration in awarding of the associate's degree.
    - *Transfer Student Mentor Program:* UB will launch its new mentoring program focused on lower division transfer students in fall 2019. A pilot group of 50 mentees will be assigned a mentor who will meet with them throughout the academic year to complement UB's intrusive academic advising approach and to ensure students stay on track for timely degree completion.
    - *Pre-Transfer Advising Program -- On-site Maryland Community College Recruitment and Advising (fall 2020):* UB conducts more than 100 visits a year to community colleges. Effective fall 2019, we will be expanding our engagement strategy to offer more events focused on unique populations (e.g., military, veterans, LatinX). We expect to expand pre-transfer advising and will be piloting a pre-admission transcript evaluation initiative.
    - *Transfer Student Center:* With a proposed launch in fall 2020, the goal is to provide comprehensive services to prospective, newly admitted and current enrolled transfer students. This one-stop experience will provide pre-transfer advising, major exploration, and transfer credit evaluations.
    - *Credit for Prior Learning:* By 2020, UB will have a plan to increase the amount of prior learning awarded, including a roadmap for evaluating industry and military credentials.
- ***Freshmen: Re-Aligned First-Year Curriculum and Experience***
    - *Professional Pathway Model:* Launched in fall 2019, the first-year curriculum is designed to explore career interests in one of five professional pathways: Law, Justice and Public Affairs; Business and Entrepreneurship; Psychology, Health and Human Services; Communication and Design; and Cybersecurity, Gaming and Technology. Students are partnered with leaders in their chosen field, senior faculty and career coaches.
    - *Accelerated Math and Writing Program:* Working with USM's Kirwan Center for Academic Innovation, UB has instituted improvements to foundational math by offering math pathways in statistics, algebra, and math for liberal arts. Effective fall 2019, we are partnering with the Community College of Baltimore County (CCBC) to offer an accelerated math program (AMP).
    - *Finish4Free:* Designed to motivate first-time freshmen to stay on track to graduate within four years, UB covers tuition for a student's final semester if they graduate after eight full-time consecutive semesters (or within four years).

University of Maryland Baltimore

Goals and Metrics

The University of Maryland, Baltimore (UMB) has three undergraduate programs: BS in Nursing (BSN), BS in Dental Hygiene, and BS in Medical and Research Technology. The graduation rates for FY MDCC transfer students and FY All Students exceeds the national average. Five-year and ten-year goals are established at a School and Program level. Undergraduate program details are provided below.

	Current Baseline Success			Future Goals					
				5-Years			10-Years		
Cohort Description	#	Retention	Graduation	#	Retention	Graduation	#	Retention	Graduation
FY MDCC Transfers	293	88%	87%	300	85-90%	85-90%	302	87-90%	87-90%
FY All Students	451	90%	81%	460	85-90%	85-90%	462	87-90%	87-90%

The **BS Dental Hygiene Programs** at the UM School of Dentistry (UMSOD) are the only Baccalaureate dental hygiene programs in the state. The BS Dental Hygiene Program enrolls 14 students annually; all are full-time students while at the UMSOD. This program is a 2 + 2 format whereby students enroll as a junior after completing 57 credits of prerequisite coursework. The majority of students complete their transfer credits at a community college while on average, four students enter the program annually having a prior bachelor's degree in another field. Dental hygiene is an attractive profession for career changers desiring high employability upon graduation from UMSOD's baccalaureate program. The RDH to BS Completion Program enrolls up to 6 students annually and are typically part-time students and are working registered dental hygienists. Students enter this program having obtained their AAS degree in dental hygiene from any one of the 5 regionally accredited community college dental hygiene programs in MD or other states' associate degree programs.

- 5-year Future Goals: Admit 14 Baltimore traditional DH-BS students, 4 RDH to BS degree completion students, and 6 students for our new Dual Degree BS/MS CDHL Program at USG each year. Total=24
- 10-year Future Goals: Plan to admit 14 Baltimore traditional DH-BS students, 6 RDH to BS degree completion students, and 6 students for our new Dual Degree BS/MS CDHL Program at USG each year. Total=26

The Department of Medical and Research Technology offers a **Bachelor of Science in Medical and Research Technology**. The degree program is a 2+2 format meaning that students enter DMRT in their junior year following the completion of 60 hours of prerequisite coursework. The largest percentage of our student body transfer from MDCC's. A small cohort enroll in our program to obtain their second baccalaureate degree or students who have completed a four-year degree, usually in biology or chemistry, may elect to enroll in our Medical Laboratory Science Certificate Program. The Certificate program permits those students to complete requisite coursework and to sit for the ASCP Certification Examination in one or two specific laboratory disciplines. DMRT students include the following: Transfer students seeking a Bachelor of Science Degree, students seeking a second Bachelor Degree, students with Bachelor Degrees seeking Certificate in Medical Laboratory Science.

- Current DMRT graduation rate for 2019 is 100%. Five-year average graduation rate is 98.8%.

With over 800 students, the UM School of Nursing (UMSON) enrolls the largest number of undergraduate students at UMB. Students can earn a **BSN or Registered Nurse to Bachelor of Science in Nursing (RN-to-BSN)** through programs offered at UMB and the Universities at Shady Grove (USG). The UMSON is the first in the state to offer an online RN-to-BSN. We developed 2+2 programs with both the University of Maryland, College Park and the University of Maryland Baltimore County for our traditional Bachelor of Science in Nursing programs. These students are highly academically qualified and enjoy a top-notch

education at both institutions, while benefiting from a seamless transition between the liberal arts and sciences during the first two years of their undergraduate education, to completing their entry-level nursing education in the final two years. UMSON developed dual-admission agreements with 13 out of 15 of MDCC's for our Registered Nurse to Bachelor to Science in Nursing programs. As a benefit to the dual admission program, while working towards their associates' degree requirements, students can take courses at UMSON to get a head start on working on the BSN portion of the degree as a non-degree student. This non-degree enrollment has been generously supported by Bill and Joanne Conway (Bedford Falls Foundation) who have funded the tuition for these courses. This opportunity allows RN to BSN students to complete their degree requirements much more quickly than would ordinarily be possible for those following the traditional RN to BSN program of study.

- UMSON enrolls over 300 BSN new students and 180 RN to BSN students annually. We have a very diverse student body, with about half consisting of students of color and a 13% cohort of men, which is very high in nursing programs. As part of UMSON's strategic plan, the School has been gathering, analyzing and prioritizing student, faculty, staff, and external stakeholder's perspectives of student success as a basis for our goal development. We are assessing the effectiveness of our expanded programs through an analysis of outcomes to determine the efficacy of student success initiatives and to ensure continuous improvement.

Enrollments for Medical and Research Technology and Nursing are currently projected to be sustained at levels supported by current resources and demand, but are closely monitored and may be adjusted to reflect fluctuations in the health care work force environment to ensure that forthcoming graduates are afforded equal opportunity for successful employment in their chosen professions. The rates of retention and graduation of UMB undergraduate students from all backgrounds continue to improve, and the strategies detailed below strive to reduce or completely eliminate any remaining differences in achievement for all of our students within the projected timeframes.

Strategies

UMB is engaged in a number of initiatives designed to increase the recruitment, retention, and graduation of undergraduate students. Many strategies are designed to increase the access, affordability, and achievement of non-traditional students, part-time students, and underrepresented minorities. Specific initiatives are described below.

<u>Access</u>

- BS Dental Hygiene and RDH to BS Degree Completion Programs utilize the Artsys Articulation System for Maryland Colleges and Universities.
- BS Dental Hygiene Program marketing and recruitment collaborations with the UMSOD Admissions Office enabled a consortium of medical, healthcare, undergraduate allied healthcare, and graduate program advisors to learn about advanced dental hygiene degree pathways at a UMSOD hosted advisory program.
- BS Dental Hygiene Program partnered with UMSOD Admissions on an American Dental Education Association online student instant messaging question and answer event for students from across the country.
- BS Dental Hygiene Program collaborates with Admissions to promote dental and dental hygiene programs in high schools and institutions of higher education with URM in Baltimore City and surrounding counties.

- BS Dental Hygiene Program collaborates with UMSOD Student Affairs and the UMB Cure Scholars in a pipeline program to promote mentoring, positive peer-to-peer relationships between UMSOD and middle school scholars, and to stimulate interest among 6th to 12th graders in West Baltimore in STEM and health care careers.
- The DMRT student population is highly diverse with respect to race, ethnicity, nationality, and age. Students may enroll as a part-time or full-time student.
- DMRT recruitment activities include attendance at selected on-site Transfer Days events.
- New DMRT recruitment initiatives involve direct contact with transfer advisers at MDCC's and other universities within the USM, targeted recruitment of students enrolled in baccalaureate degree programs in biology, chemistry and IT and updating recruitment materials that are currently undergoing a branding review process.
- Articulation agreements with MDCC's that house Medical Laboratory Technician (A.A.S.) programs which provide for relatively seamless articulation into the DMRT program. Use of ARTSYS to determine acceptability and awarding of transfer credits to all prospective students who do not transfer in from an A.A.S. program.
- The DMRT Pre-Admission Advising Process includes a pre-admission interview designed to ensure prospective students understand the program requirements as well as financial, academic, and personal considerations to ensure student success. Full-time or part-time admission may be recommended based on multiple factors.
- The University of Maryland School of Nursing (UMSON) is proactively engaging with our partners throughout the state to expand access to nursing education.
- UMSON expanded its recruitment presence throughout the State. The UMSON regularly visits all of MDCC's and appropriate four-year institutions to engage with prospective students through the application process and to individually work with students in our partnership programs to ensure a seamless transition to their education.
- The UMSON developed 2+2 programs with the University of Maryland, College Park and the University of Maryland Baltimore County for our traditional Bachelor of Science in Nursing programs.
- UMSON developed dual-admission agreements with 13 out of 15 of MDCC's for our Registered Nurse to Bachelor to Science in Nursing programs. This non-degree enrollment has been generously supported by Bill and Joanne Conway (Bedford Falls Foundation) who have funded the tuition for these courses.

<u>Affordability</u>

- Dual Degree BS Dental Hygiene to CNL MS Program enables BS dental hygiene degree students in year 2 at the UMSOD to take up to 9 credits at the School of Nursing in the Clinical Nurse Leader graduate program that also count towards their BS degree. Students matriculate seamlessly into the CNL MS program immediately following the BS degree. The UMSOD and UMSON leveraged matching prerequisite transfer credits to enable matriculation into the BS dental hygiene and CNL MS programs. Students earn two health professional degrees becoming a registered baccalaureate degreed dental hygienist and a registered nurse with MS degree.
- Accelerated UMSOD BS Dental Hygiene to MPH UMSOM program enables BS Dental Hygiene to take up to 9 credits of MPH courses that count towards both the BS and MPH degrees. Students

matriculate seamlessly from the BS dental hygiene to MPH program having 9 credits completed that count towards both degrees.

- New UMSOD Dual Degree BS/MS Clinical Dental Hygiene Leader Program enables students entering with a prior baccalaureate degree to earn both a BS and MS in dental hygiene in 2 years. Enrollment will start at 4 new students in 2020, then 6 new students enrolled each year thereafter. The UMSOD students will complete didactic curricula online and the clinical coursework at a new UMSOD educational facility housed at USG. UMSOD facility at USG reduces commuting and increases access to advanced degrees in dental hygiene.
- In addition to having the only baccalaureate dental hygiene programs in MD; neighboring states and regions such as Delaware and Washington, DC do not have any baccalaureate dental hygiene programs. Through the Academic Common Market (ACM), Delaware residents have successfully applied for in-state tuition through the ACM consisting of 16 Southern states that participate in a higher education consortium.
- The DC Tuition Assistance Grant allows students to attend any public institution in the nation as if they are a resident of the school's state. Students pay the low in-state tuition and the grant pays the difference between in-state and out-of-state tuition up to $10,000 a year. With a maximum of five award years that can amount to a lifetime of $50,000, this grant makes affordable college tuition a reality. This program has been successfully utilized by eligible Degree Completion students from UMSOD residing in Washington, DC.
- For students experiencing an occasional financial aid shortage, the UMSOD Office of Student Affairs can extend a short-term $1,000 loan (usually for a month) through the UMB Student Financial Aid Office with no interest.
- DMRT places copies of all textbooks used in the program on reserve at the Library, for student use. Faculty do not automatically require the purchase of new editions of textbooks in their classrooms unless the latest revised edition has added substantive new information that may be reflected on the ASCP Certification Examination.
- DMRT ensures students are aware of career-specific scholarship and work-commitment tuition subsidy programs available to assist with the costs of financing their education. DMRT faculty assist students in completing the components of the application packets for several scholarship and tuition subsidy programs.
- DMRT solicits and obtains from hospital-based clinical affiliates donated media and other supplies/equipment essential to the student teaching laboratories which help to contain the cost of DMRT-specific student fees.
- In addition to the substantive merit and need based support from our donors, the philanthropy from Bill and Joanne Conway has been transformative for our UMSON undergraduate students. The Conway Scholarship program covers in-state tuition, textbooks, and fees for 30 incoming traditional BSN’s annually who demonstrate financial need for the entirety of their academic program. The Conway Scholarship is awarded to 30 incoming RN to BSN students annually. The program includes assigned mentorship and required participation in events. This premier scholarship provides an unprecedented level of financial support and access to nursing education.
- In 2018-2019, UMSON provided structured financial support to students who were experiencing a crisis and to individuals who needed modest assistance so that they could continue their education.

- UMSON funds lending libraries of all textbooks at our Baltimore and USG locations at no charge for students. UMSON lends graduation regalia to students who cannot afford their own so that they can attend commencement and convocation ceremonies.
- The UMSON employs significant numbers of undergraduate students who serve as student assistants and tutors.

Achievement:

- SAS advisors (Student Advisors) in UMSOD monitor clinical progression; small dental hygiene advisory teams identify students needing educational and personal support and consult with UMSOD Student Affairs regarding students with concerns (e.g., career, health, well-being, other problems). Referrals are made to UMB Student Services (e.g., Writing Center, Education Support & Disability Services, Counseling Center).
- BS Dental Hygiene students are assigned senior siblings prior to new student orientation and upper class members mentor other students through formal and informal events held throughout the year to promote effective peer to peer social and academic role modeling and intraprofessional relationship building.
- 60% of the dental hygiene Class of 2019 were recognized in the UMSOD Dean's Community Service Award Program for their civic engagement and student leadership in the community and across MD in outreach above and beyond community service requirements in the dental hygiene program.
- Time to degree, graduation rates, retention, and student success on professional preparatory clinical and didactic board examinations are all successful hallmarks of the UMSOD dental hygiene program
- In UMSOD: 1:15 didactic course faculty to student ratios; 1:5 clinical and laboratory faculty to student ratios.
- Five-year average graduation rates for DMRT is 98.8% and the five-year average for DMRT graduating student pass rate on the American Society for Clinical Pathology Board of Certification Examination is 100%. Five-year average of job placement rates for DMRT graduates is 100%.
- Junior DMRT students must maintain a 70% average in all lecture and laboratory courses and senior students must maintain a 75% minimum average in all lecture and laboratory courses.
- DMRT students receive immediate notification when any course assessment falls below the required benchmarks. A corrective action plan may be implemented, which could include: Faculty tutoring, peer tutoring, or participation in a student-led study group. If relevant, a review of nonacademic issues is conducted to ensure that the student is able to perform effectively and to complete their degree program.
- Senior DMRT students spend their spring semester engaged in four clinical rotations among hospitals in the Baltimore/Washington Metro area. During each of the four clinical rotations, students return to campus for extensive didactic review sessions. At the end of each rotation experience, students must pass an examination in a laboratory specific discipline. Practice examinations are available to students on Blackboard.

- At the completion of all didactic and clinical rotation instruction, DMRT students must sit for a simulated certification examination, which approximates the on-line format and content of the ASCP certification exam.
- The UMSON Student Success Center provides academic support, career services, student organization management, and academic advising. Traditional BSN students receive academic advising from advisors in the Center. Faculty advise RN to BSN students. Academic support services include tutoring, supplemental instruction as well as writing and research support. Comparable academic support services are available at USG.
- UMSON utilizes a professional academic advising model for traditional BSN students. Advisors work closely with students to not only monitor academic progress but to regularly monitor performance in courses in Blackboard and provide resources to proactively manage students who may be at-risk. UMSON recently implemented DegreeWorks, our tool to monitor academic requirements and develop plans of study.
- Our advisors in the UMSON Center collaborate closely with faculty to work holistically in the interest of student success. This could include collaborative case management work on individual students or to relay student concerns to faculty to improve pedagogy with the ultimate goal of ensuring our students are successful.
- The UMSON Student Success Center developed a purposeful collaboration with the University of Maryland Medical System to help streamline the recruitment process for students.
- The UMSON Office for Diversity and Inclusion offers initiatives to advance faculty and staff understanding and support of a learning and work environment grounded in civility, inclusion, and diversity. In 2018-2019, faculty and staff participated in unconscious bias and restorative justice professional development experiences.

University of Maryland, Baltimore County

Goals and Metrics

UMBC's enrollment plan is to moderately increase the number of new student enrollment over the next ten years. Most of the planned enrollment increase will occur by maintaining or increasing student retention. UMBC plans to address the needs of the changing student demographics and the institution will work to increase access, retention and graduation.

	Current Baseline Success			Future Goals					
				5-Years			10-Years		
Cohort Description	#	Retention	Graduation	#	Retention	Graduation	#	Retention	Graduation
Fall First-time, Full-time	1,777	90%	70%	1750-1800	90-92%	70-72%	1750-1800	93-95%	72-75%
FY MDCC Transfers	1,305	84%	54%	1350-1450	84-86%	68-70%	1425-1475	86-88%	70-72%
FY All Students	3,505	84%	66%						

Strategies

As noted in *Our UMBC: A Strategic Plan for Advancing Excellence*, the student experience is one of four fundamental elements of academic excellence identified as critical to advancing UMBC's evolution as a nationally and internationally recognized public research university. The primary goal with respect to the student experience is to "create vibrant, exceptional and comprehensive undergraduate and graduate student experiences that integrate in- and out-of-classroom learning to prepare graduates for meaningful careers and civic and personal lives". To this end, the university has identified the following strategic goals: 1) Increase degree completion and shorten students' time to degree; 2) Systematically improve the quality and consistency of academic advising and mentoring of undergraduate and graduate students; 3) Leverage the strength of UMBC's compositional diversity by increasing the cultural and global competencies of all students; 4) Continue to build a campus culture that creates, supports, and expects applied learning experiences that present a wide variety of options for all students (e.g., study abroad, internships, cooperative education, service learning, engaged scholarship, artistic performance, and teaching and graduate assistantships); 5) Promote the health and well-being of students as a foundation for academic and life success.

As part of its continuing efforts to advance the Strategic Plan and recognizing the importance of long-term enrollment planning in supporting its implementation, UMBC has recently engaged in a comprehensive strategic enrollment planning process. As specified in the scope of work, "the Strategic Enrollment Plan (SEP) will be data-informed and comprehensive to cover the life cycle of the student from exploratory to alumni with particular focus on recruitment, and retention goals and strategies including student relationship management, communication matrices, student onboarding and yield approaches. The plan will outline UMBC's strengths, weaknesses, opportunities and threats related to attracting, enrolling and retaining quality students in undergraduate and graduate programs. The plan will detail recommendations and enrollment goals and targets based on demographics and market trends related to public doctoral research universities similar to UMBC and include an action plan with performance metrics." UMBC anticipates completion of the strategic enrollment planning process by April 2020. The SEP will build on the following existing strategies and efforts for recruiting, enrolling and retaining a diverse student population:

Access

Enrollment programs

UMBC enrollment plan is to moderately increase the number of new student enrollment over the next ten years. Most of the planned enrollment increases occur by maintaining or increasing student

retention. UMBC expects more first-generation students will enroll, and the institutional will work to increase retention and graduation rates. The institution will also specifically improve male student retention and graduation rates.

Selected Recruitment and Pre-Admissions Programs:

The Golden Ticket Program Pre-Orientation Advising is a pre-orientation advising initiative that provides first generation students and their families the opportunity to meet with an academic advisor *before* their scheduled orientation for an overview of academic requirements, academic planning tools, to have questions and concerns addressed.

First Generation Network is a group of first-generation Faculty and Staff who are dedicated to supporting first-generation students. Through a MyUMBC Group, students are able to connect to UMBC staff and each other. They also receive updates about campus resources and events.

The Transfer Portal is a student facing technology that engages prospective transfer students early in their academic planning and transfer process. Leveraging transfer credit and articulation rules and degree audit data, the Portal offers prospects real-time credit estimates, best-fit major recommendations, and customized application support to answer questions and guide the students to apply.

The (Registration) Guide is a new myUMBC feature that provides a step-by-step guide to advising and registration at UMBC. Students are able to verify declared major, address administrative holds, updating their degree plan and build a proposed schedule to register for classes.

Affordability

Financial Support Programs

To assist students with the financial commitments of college, UMBC has the following initiative to help our students both afford college and improve their time to degree.

Transfer Student Alliance (TSA) Program supports and rewards community college students who intend to transfer to UMBC to pursue the baccalaureate degree upon completion of the associate's degree. Program participants benefit from joint programmatic efforts, access to UMBC resources and activities, and discounted tuition for concurrent enrollment. Upon transfer participants benefit from admission application fee waiver, guaranteed admission, early orientation and registration, guaranteed housing and, for eligible students, merit scholarships.

FinancialSmarts - provides students with the tools necessary to make informed decisions about their finances. Managing money is an important part of students' daily life. FinancialSmarts aims to provide students with timely and relevant resources so that they are as well-prepared to manage budgets, bank accounts, assets and debt as they are to master their academic pursuits.

Retriever Jump Start Scholarship – provides financial support (tuition, room and board) to first generation, Pell-eligible students from Baltimore City and Prince George's County to participate in a six-week summer bridge academic program to support their transition to college.

CEO/Superintendent Awards – UMBC's top merit scholarship awarded to academically talented students in targeted MD public school systems including Baltimore City Public Schools and Prince George's County Public Schools. Four-year scholarships are awarded to one eligible student per public high school.

Senior Degree Completion Micro-grants are awarded to seniors who are ineligible to register due to a financial hold and who have exhausted all other aid funding including federal loans.

Finish 15 Campaign was created to increase students' awareness of the importance of enrolling in and successfully completing at least 15 credits per semester (or on average 30 credits a year).

Retriever Essentials' is an initiative to alleviate food hunger on campus in order to foster a safer and more productive environment. Retriever Essentials provides free food to UMBC students through Food Zones and the Save-A-Swipe Program.

Reducing Textbook Costs

The Course Materials Initiative, or CMI, is a program developed to provide students with reduced pricing for course materials through digital textbooks and ancillaries, such as WebAssign, ALEKs, Connect, MindTap or FlipIt. The course materials are integrated directly into Blackboard via a common digital platform (VitalSource). The Bookstore negotiated directly with publishers to obtain special UMBC pricing; currently UMBC has contracts with four publishers: Cengage, MacMillan, McGraw Hill and Norton. Cost savings range from 15% to 55%, depending on the textbooks and ancillary materials, with an average savings of 34%.

Achievement:

Retention and completion programs

UMBC is currently investing resources in both curricular and co-curricular initiatives to improve retention, student engagement, academic progression and graduation. The following list provides details about each of the current initiatives.

Dawg Days Jumpstart is a six-week summer bridge program that offers students the chance to take a math, writing, and/or general education course during the summer along with an interactive transition seminar in the fall to help ease the transition to college.

Reverse Awarding of the Associate's Degree supports the completion of the associate's degree by actively promoting and facilitating the reverse awarding of the associate degree after students transfer to UMBC. UMBC collaborates with the community colleges and provides specialized advising to assist the student in completing both their UMBC bachelor's degree requirements and the community college associate's degree requirements.

Transfer Student Orientation is a mandatory day-long transfer student orientation introducing new transfer students to the academic and social life at UMBC. Students attend sessions on a range of topics including degree requirements, academic resources, faculty expectations, student services, student activities, financial aid, financial literacy, and more.

Introduction to Honors University Seminar (IHU) (First Year Experience) IHU seminars are unique in providing students with academic and social support that assist them with transition to college. Students interact with knowledgeable staff from offices all over campus, interact with peer mentors in class, engage with UMBC academic services.

Transfer Seminar (TRS) is a seminar for entering transfer seminars are one or two-credit courses designed to assist first year transfer students in their transition to UMBC. The course is often attached to an upper level course in the student's major.

Transfer Student Network (TSN) is a student outreach program sponsored by Off-Campus Student Services. Through a series of workshops and activities, TSN helps new transfer students transition to UMBC and its many resources, connects new and returning students with like interests, and provides a network community for building social and career-minded relationships.

First Year Intervention Program is an institutional early alert program designed to identify and help students in their first year at UMBC who are struggling academically.

Senior Degree Completion Initiative was developed to review student records for all students who have applied for graduation and have been denied due to outstanding academic requirements. Staff work with students, academic departments/colleges and others to facilitate degree completion.

Degree Planner is an online tool to allow undergraduate students to develop a customized 4-year degree plan. The tool interacts with the degree audit and the course catalog systems to allow students to accurately and efficiently plan out their course of study.

Degree Donut is an intuitive visual display of students' degree completion status including courses completed, courses in progress, courses planned and courses not yet planned. The tool leverages student's degree audit and degree planner data and emphasizes the importance of academic progression and not just persistence.

McNair Scholars The Ronald E. McNair Post Baccalaureate Achievement (McNair Scholars) Program provides experiences that prepare students for graduate education in all disciplines. The program involves students in research, mentoring, and other scholarly activities. McNair participants are from diverse backgrounds and high academic potential.

The newly established *Office of Academic Advocacy* is dedicated to serving undergraduate students and assisting them in resolving their academic and institutional challenges that may adversely affect their retention, academic progression and timely completion of their degree.

The newly established *Academic Success Center* is created as a one stop shop for undergraduate student to receive tutoring and other academic support courses, academic petition assistance, writing assistance, and academic ombus services.

PRAC 102, Building Skills for Career Success is a zero-credit, pass-fail course in which UMBC students can enroll. PRAC 102 is recorded on the student's permanent transcript to provide a record of their participation in University-sanctioned professional skills development. The UMBC Career Center facilitates nearly 2,000 practicum enrollments in applied learning and Career achievement opportunities each year.

Good Morning Commuters is hosted by Off-Campus Student Services and offers breakfast to primarily commuter students each Tuesday of the week

The Transfer Engagement and Mentoring (T.E.A.M.) program is dedicated to increasing the persistence and retention of underrepresented male students. Faculty and staff from different areas create a comfortable environment in which students of color can have fun, discuss important issues, motivate each other, create community, and find academic and social success.

Living Learning Communities (LLC) are a cornerstone of the residential experience, housing nearly 1/3 of the first-year class. LLC's connect students with shared interests.

New Residential Life Curriculum focuses on intentional interactions, restorative practices, and incorporation of key principles of civic and community engagement.

The INTERACT Program is a four-week, skills-based dialogue program designed for first year students residing in on-campus housing.

The Haven at UMBC will begin in Fall 2019, and will assist and support our students' health and well being. "The Haven at College" is an organization that was created for college-age students struggling with substance use and co-occurring disorders.

Student Athlete initiatives are available to support student athletes including first generation college students, international students with limited educational opportunities in their home country, and students from underprivileged socioeconomic backgrounds.

Continuous improvement of teaching and learning

UMBC's Faculty Development Center (FDC) is dedicated to supporting faculty and staff in their teaching role at the University by providing a comprehensive program of services and resources. The FDC provides exemplary support for faculty to creating state-of-the-art undergraduate and graduate curricula delivered through innovative and effective approaches to teaching and learning, including Individual consultations and classroom observations, help in gathering student feedback, assistance and consultation for course redesign, workshops and book discussions on teaching and learning topics, support for pedagogical innovation and research, learning assessment services, consultations in writing and communication in the disciplines, Support for faculty learning communities (FLCs).

University of Maryland, College Park

Goals and Metrics

UMCP is committed to student success. Focusing on the graduation rates of all students has resulted in these rates being among the highest in the nation. We measure graduation rates through the Student Achievement Measure (SAM), which tracks the success of UMCP students at any higher education institution. Our goal is to maintain or increase our already high graduation rates of 86% for first time, full-time freshmen and 79% for full-time transfer students. According to SAM, our students realize an additional 5-7-point graduation rate increase compared to students who leave UMD and graduate from other institutions. We are the State's Flagship and Land Grant institution. This broad mandate means that enrollment management at College Park is complex. Enrollment targets are determined as a part of the university's overall enrollment strategy to maximize student success and access, to balance the fall and spring (including Freshmen Connection) student numbers as well as first year and transfer student (including Shady Grove) populations, while making the best use of campus resources, especially dormitory and classroom space.

At UMCP, we recognize that non-traditional students have particular needs in order to achieve full potential. We have developed many special programs and services to meet those needs and to make the transition into and through UMCP more supportive, and efficient for all students. Many of the programs and services described below fall into multiple categories, but were placed in the area that seems most relevant.

	Current Baseline Success			Future Goals					
				5-Years			10-Years		
Cohort Description	#	Retention	Graduation	#	Retention	Graduation	#	Retention	Graduation
Fall First-time, Full-time	3,893	NA	86%-91%	NA	NA	86%-91%	NA	NA	86%-91%
Full-time Transfers	1,701	NA	79%-86%	NA	NA	79%-86%	NA	NA	79%-86%
FY All Students	8,386	93%	82%						

Note: SAM does not report retention rates

***Access*:**

MTAP Program: A pathway program that sets students up for success by providing them with a clear academic plan including GPA, course and semester credit hour requirements. Once a student satisfies these requirements, including applying by the required deadline, s/he is guaranteed admission to the University of Maryland College Park. The requirements of the program include the Fundamental Math and English courses, which prepare students for a successful transition to UMCP. This program also allows students to take up to 9 credits at UMCP (3 credits per term) during the Winter and Summer terms prior to transfer admission.

Transfer Terp Partnership: A pathway program to prepare prospective students for admission to UMCP at the Universities at Shady Grove location. USG programs are transfer admission only and have program-specific admission requirements, and this partnership provides clear guidance for a timely and successful transfer transition. Since each of the programs offered has different prerequisite and GPA requirements, the Terp Transfer Partnership allows prospective students to work directly with their chosen program to stay on an appropriate transferable degree plan within the best possible timeline. Students are set up for success and are already familiar with the campus and its requirements when they transfer.

Pre-Transfer Advising Program: An advising initiative at the University of Maryland that supports prospective transfer students and connects them to resources that enhance and ease their transition to the College Park campus. Pre-Transfer Advisors assist students with academic planning, including course selection, estimating time to UMCP graduation, and major and career exploration. The program is housed at the University of Maryland, and includes six full time advisors: two housed at the University of Maryland and at four local community colleges (Anne Arundel Community College, College of Southern Maryland, Montgomery College and Prince George's Community College). Students are encouraged to use the service to assess their readiness to transfer.

Upward Bound (UB): UB serves high school students who are either from low-income families or from families in which neither parent holds a bachelor's degree. Participants are from target schools in Prince George's and Montgomery counties, or Washington, D.C. The Upward Bound program provides academic and career counseling to students toward the goals of admission to and graduation from four-year post-secondary institutions. It consists of two components:

1. The six-week summer session provides students opportunities to live in University of Maryland residence halls and attend academic classes in the areas of mathematics, science, composition, reading, foreign languages and study skills.
2. The academic year sessions provide students further academic instruction, tutoring and counseling as a follow-up to summer activities.

***Affordability*:**

Office of Student Financial Aid: Develops and implements financial aid strategies to provide access to students in need and support student success. This office is also developing a financial wellness program to assist students in identifying and managing financial resources, including federal, state, and institutional aid. It seeks to support all students, especially first-generation, low-income, underserved, and non-traditional students.

Frederick Douglass Scholarship is a scholarship for incoming Transfer Students that provides both Full tuition and Partial scholarships for In-State transfer students coming from a Maryland Community College. This scholarship has a focus on access, academic success, diversity, and student leadership. It requires a record of academic success, a student essay, letters of recommendation, and an interview, allowing the University to complete a true holistic review when making awardee selections.

Maryland Promise Program (MPP) is a program to increase the endowment for need-based scholarships by $100 million to support undergraduate students from underserved populations in the state of Maryland and the District of Columbia. The scholarship program is a challenge grant from the Clark Charitable Foundation that will be matched one-to-one to provide funding for the need-based scholarships.

Maryland Transfer Scholarship provides $5,000 per semester for four semesters for Maryland In-State residents that focuses on merit and financial need in recipients. Students selected typically have a 3.2 or above cumulative GPA and have completed their Fundamental Math and English course requirements. The scholarship provides support to transfer-ready students that might not otherwise have the resources to accept an offer of admission.

University of Maryland Incentive Awards Program (IAP) IAP offers full financial, academic and social support to exceptional young people from Baltimore City and Prince George's County who demonstrate academic ability, uncommon persistence and maturity in the face of very difficult circumstances.

University of Maryland Grant (UMDG) The UMDG is the primary need-based grant offered to qualified Maryland residents who have unmet financial need as demonstrated by the Free Application of Federal Student Aid (FAFSA).

***Achievement*:**

The Student Academic Success-Degree Completion Policy (SAS-DCP) Requires all students to develop four-year graduation plans and successfully complete benchmark courses within a certain timetable in order to remain in their major.

Transfer 2 Terp (T2T) A learning community for first semester transfer students at UMCP that is overseen by the office of Transfer and Off Campus Student life. This program assists in successful transition to UMCP and integration into the campus community. Through this program students have the opportunity to join a community of new transfer students and complete an upper level course deigned to assist in a successful start at UMCP. This program also provides access to staff and faculty coaches on the UMCP campus.

Transfer Experience Network (TEN) is a campus-wide network comprised of staff who work with transfer students. TEN members serve as advocates for the transfer students at the University of Maryland and discuss and address issues related to transfer. TEN provides guidance for students prior to application, during the admissions process, and supports the student upon matriculation. Contributing organizations include the Student Union, the Pre-Transfer Advising services, Admissions, Financial Aid, and representatives from the academic colleges. The network identifies trends, challenges, and key issues related to the transfer student experience in order to improve and enhance transfer services and transfer student achievement at UMCP.

Transfer Credit Services (TCS) TCS oversees the transfer of coursework to determine the acceptability and awarding of credit at UMCP, for courses completed at other institutions and for awarding other pre-college credit. TCS assists students with: understanding transfer credit policies, monitoring and maintaining a transfer course database, navigating the transfer evaluation process, and determining how courses are accepted into UMCP.

New Student Orientation every new student is required to attend a new student orientation program prior to enrolling. Orientation offers an introduction to the university, focusing on academic requirements and policies. Additionally, students are introduced to the many programs and services offered across the university, e.g., student life, financing and payment options. These programs are tailored to students based upon their entry status and class standing. Students meet with academic advisors, review results of placement testing, and register for classes in an effort to introduce student services and other resources to the student.

Office of Multi-Ethnic Student Education, Office of Undergraduate Studies: The mission of the Office of Multi-Ethnic Student Education (OMSE) is to provide matriculation, retention, graduation and academic success to multi-ethnic undergraduate students.

Student Success Initiative The Student Success Initiative is a student centered program focused on increasing retention and graduation of Black/African American male students at the University of Maryland.

Business Academy The mission of the Business Academy at the Robert H. Smith School of Business is to develop students professionally, socially and academically. The Academy creates a community in which students are emboldened to challenge themselves and are encouraged to engage in service, leadership and cultural experiences. Participation is open to all African American and Latino men at the University of Maryland who are interested in a career in business.

Women's Empowerment Institute The newly formed Women's Empowerment Institute seeks to empower women from underrepresented populations within the Robert H. Smith School of Business to be successful personally and professionally.

Center for Minorities in Science and Engineering The Center for Minorities in Science and Engineering provides programs and services to support the recruitment, retention and graduation of underrepresented minority engineering students at the pre-college, undergraduate and graduate levels.

Academic Achievement Programs (AAP), Office of the Dean for Undergraduate Studies The mission of the Academic Achievement Programs (AAP) is to facilitate access and to provide an opportunity for a college education to students who, if evaluated on traditional criteria, might not have access to the University of Maryland.

Ronald E. McNair Post-Baccalaureate Achievement Program Ronald E. McNair Post-Baccalaureate Achievement Program is a competitive federal TRIO Program designed to prepare students for research with the goal of increasing the number of doctoral and other terminal degrees earned by underrepresented students.

Educational Opportunity Center (UM-EOC) Educational Opportunity Center (UM-EOC) recruits first generation and low-income adults from Prince George's County, and supports their journey towards postsecondary education.

Talent Search Programs (UM-Talent Search North & Central) Talent Search Programs (UM-Talent Search North & Central) provide services to traditionally underrepresented middle and high school students in Prince George's County Public Schools who show promise, but may still need support in order to successfully graduate from high school and navigate the unfamiliar territory of college.

The Transitional Advising Program (TAP) A retention initiative that provides comprehensive academic advising and academic support services to currently enrolled high credit students (60+) who have been required to change their major.

The Student Success Office (SSO) Assists in the retention and graduation of all students, coordinating the reenrollment process and serves as a clearinghouse for tutoring resources. SSO develops campus-wide initiatives for student success including an online assessment module for students on academic probation.

Nyumburu Cultural Center Nyumburu Cultural Center is dedicated to advancing and augmenting the academic and the multi-cultural missions of the University by presenting a forum for the scholarly exchange and artistic engagement of African Diaspora culture and history. The many programs offered by Nyumburu are open to the university community as well as the public.

Supporting Faculty to Support Students

In addition to strategies that directly support students, UMCP's Teaching and Learning Transformation Center (TLTC) and other offices support professional development for students and faculty to engage in high-impact teaching practices. A few examples follow:

Elevate Course Redesign Fellowship: A year-long, funded fellowship for faculty to learn about evidence-based pedagogy and apply these principles in the redesign of a more student-centered and inclusive course. We have shown that course redesigns are associated with reductions in student DFW rates; pre-and-post assessments show the increased awareness of participating faculty members' awareness of and utilization of these high-impact teaching practices.

Graduate Student Orientations: Coaching sessions for graduate teaching assistants and instructors to provide training in the use of evidence-based pedagogy. Last year we had over 400 graduate student participants.

Academic Peer Mentoring Program (AMP) We prepare undergraduates to work with faculty to facilitate active learning and student engagement during class meetings and train them to help make the classroom climate more inclusive and supportive. In the 2018-2019 academic year, we had over 340 peer mentors and estimate that, in the three years this program has been running, it has enhanced the classroom experience of over 16,000 students.

University of Maryland Eastern Shore

Goals and Metrics

The University of Maryland Eastern Shore's enrollment plan is to gradually increase our undergraduate student enrollment population by approximately 17% over the next ten years. This increase will be created by a new strategic focus on enrollment management, which supports both a robust recruitment plan and enhanced retention goals. Several new initiatives are underway to improve undergraduate recruitment such as joining the Common Application network, implementation of the University's CRM (Radius – Campus Management), the expansion of our digital communication and social media platforms, and implementation of Ruffalo Noel Levitz's Advance FinAid Solutions" package. Lastly, to support our 10-year enrollment plan, the Institution must obtain an annual retention rate of 67% -71%. This will be achieved through a variety of initiatives such as the implementation of the StarFish early alert system, comprehensive degree audit integration, cohort-based advising and retention groups, need and merit-based mini-grants, and reclamation activities. These efforts combined will assist in improving the successful outcomes for our low-income, first-generation students, as evident by the 6-year graduation rate for the 2013 cohort which is currently 41% - the highest 6-year graduation rate in 20 years (1999).

	Current			Future Goals					
				5 - Years			10 -Years		
Cohort Description	#	Retention	Graduation	#	Retention	Graduation	#	Retention	Graduation
Fall First-Time, Full Time	501	62%	37%	525-568	62-66%	37-42%	568-627	66-73%	37-47%
FYMDCC Transfers	113	77%	43%	113-120	77-82%	43-46%	120-132	77-82%	50-52%
FY All Students	735	67%	49%	735-796	67-71%	49-52%	796-879	67-71%	49-52%

Strategies

Access:

Enrollment 101 (E101) Pre-Orientation Advising – Although all new freshmen attend their week-long New Student Orientation a week before the start of the term, E101 is a pre-orientation initiative designed to provide families and students with a comprehensive day of support. Students can meet 1:1 with faculty and academic advisors, discover the campus' academic support services and build their preliminary academic schedules for the Fall semester. Families are also able to sign up for UMES' family network, as well as have 1:1 consultation with critical departments such as Housing, Student Accounts, and Financial Aid.

On-Site Maryland Community College - Maximizing its articulation agreement and regional partnerships with community colleges during the 2019 -2020 recruitment cycle, UMES will begin to conduct on-site admissions to Maryland Community Colleges. The initiative will allow prospective students to take advantage of established articulation agreements, as well as some of Maryland reverse transfer award initiative. Thus, providing greater access to Maryland Community College residents prior to them transferring to an out of state four-year college.

Dual Enrollment Partnerships – UMES has entered into agreement with several neighboring county school districts to develop dual enrollment agreements. These partnerships will assist Maryland students in making the transition from high school to college smoother as well as expose UMES' unique program mix to a broad base of high school students. These partners include Prince George's County, Dorchester County, Wicomico County, and Worcester County.

Summer Bridge Expansion – UMES offers alternative pathways towards college admissions. Students with standardized test scores and GPA ranging in a lower-tier are offered the university's

Summer Bridge program. A four-week summer immersion program designed to strengthen core college readiness skills and build student partnerships with academic support services.

Affordability:

Ruffalo Noel Levitz (Financial Aid Optimization – As of July 2019 the Institution has engaged with Ruffalo Noel Levitz (RNL) to secure their "Advance FinAid Solutions" package. This contractual consulting service will aid UMES in obtaining financial aid optimization through the use of their four proprietary software platforms: 1. RNL Affordability Predictor; 2. RNL FinAid Simulation Software; 3. RNL True Cost Calculator; and 4. RNL Smartview. This suite of services will assist in leveraging institutional aid to make college more affordable for low-income students as well as enhancing retention and degree completion success.

Degree Completion Mini-Grants – In the Spring of 2019, the institution utilized the creation of institutional mini-grants to target near completers in the 6-year graduation cohort for funding support. Funds were not utilized to eliminate entire financial debts. Instead, the funding was used to ensure the persistence of cohort members towards degree completion. As a result, the 6-year graduation rate for the 2013 cohort is 41% - the highest 6-year graduation rate in 20 years (1999). Moving forward, some institutional aid awards will be tied to criteria such as attending financial literacy workshops, meeting with academic advisors, and meeting with career development counselors. These activities are intended to assist students with understanding the financial cost associated with prolonged enrollment while at the same time encouraging degree completion.

15 to Finish Campaign – Launching in Fall of 2019, UMES will encourage students to enroll and successfully complete at least 15 credits each semester (30 credits/year, including summers) to graduate in four years to support on-time degree completion and debt reduction.

Achievement:

Degree Audit Integration – Launching in Fall of 2019, UMES will fully integrate its degree auditing tool in every aspect of the enrollment process. Working in collaboration with the Center of Access and Academic Success, the Registrar's Office will create Degree Audit themed communications to students.

- Incorporating a Degree Audit message and link into every registration/advising related message
- Degree Audit tutorial video
- Add a dedicated Degree Audit email to the communication inventory
- Degree Audit FAQ page
- Pushed Degree Audits – At the conclusion of each semester, each student will receive an official copy of their degree audit for review.

StarFish (Early Alert) – Launching in the Spring of 2020, UMES will utilize StarFish, a Positive Reinforcement/Early Alert System designed to enhance faculty engagement and student success. When used effectively, StarFish becomes an intervention tool utilized by faculty and advisors to track student progression and reward successful habits while also addressing challenges in academic performance. This tool will be used in conjunction with cohort-based academic advising to provide a comprehensive array of intrusive academic support.

Welcome Home Campaign – A reclamation initiative designed to support students both in and outside of the 6-year graduation cohort who have dropped out of college and connect them with financial and academic support through an annual summer One-Stop event. Students are provided a complimentary degree audit, 1:1 consultation with an academic and financial aid adviser, provided a degree pathway plan, and a financial cost estimate.

University of Maryland University College

Goals and Metrics

UMUC is the State of Maryland's open-access, online university, charged in statute with serving the adult learner and military populations. Thus, UMUC enrolls a distinctly unique population comprising transfer students, military service members, veterans, and working adults. The nature of these student populations and their enrollment patterns in pursuit of higher education is such that the story of their retention and graduation is told through a combination of UMUC's institutional retention and graduation rates as well as the Student Achievement Measures (SAM) that capture retention and completion at other institutions. The student population UMUC serves typically enrolls at multiple institutions over the course of many years to finally achieve degree completion. The subgroups listed below represent specific segments of UMUC's student population and reflect only retention and graduation at UMUC (SAM data is not reported here).

Current Baseline Success*				**Future Goals**					
				5 Year			10 Year		
Cohort Description	#	Retention	Graduation	#	Retention	Graduation	#	Retention	Graduation
FY MDCC Transfers	2185	59%	35%	3340	64%	43%	3834	65%	44%
FY Transfer Students (60 credits or more)	4170	50%	33%	5780	59%	41%	6416	61%	42%
FY Military Transfer Students	2051	50%	31%	2490	59%	41%	2706	61%	42%
FY Military Veterans	421	49%	27%	1760	57%	29%	2163	59%	30%

**Baseline data listed in this table is from FY2008 to align with the USM format for this report.*

Strategies

UMUC employs a number of strategies and services in support of student enrollment, retention, and graduation, and is in the midst of developing additional initiatives that leverage enterprise-wide technology to enhance and extend the capacities of our student supporting teams.

Access:

- ***Chatbot -*** UMUC is enhancing student support with the introduction of a new artificial intelligence-enabled chatbot that can answer common questions and provide account information 24 hours a day. The UMUC Help Bot will be accessible beginning July 16, 2019, on the university's website, in the student portal, and via links in email and text messages. It is available on any device and responds to typed text and voice commands. Prospective students and current students who use this functionality can quickly and easily access information that is important to their educational success. Immediate responses to information about an academic program of interest through the chatbot is especially empowering for prospective students who are in the process of choosing a major.
- ***Stackable Credentials -*** UMUC is promoting the opportunity to complete certificates on the way to a bachelor's degree. Stackable credentials provide the opportunity to achieve milestones en route to the degree and have the potential for immediate positive impact for the working adult student in terms of improving employability, building momentum, and positively reinforcing persistence to degree completion. Courses are aligned to industry certifications and requirements where possible.

- ***Maryland Community College Alliances*** - UMUC is the largest recipient of Maryland community college transfer students and has alliance agreements with all 16 Maryland community colleges. These alliances include more than 300 program articulations for bachelor's degrees at UMUC. UMUC also has a unique reverse transfer partnership with Anne Arundel Community College, Frederick Community College, College of Southern Maryland, and the National Student Clearinghouse. UMUC completes outreach to the students who are transferring from one of these community colleges to assist them with the reverse transfer process. The National Student Clearinghouse handles the submission of transcripts on behalf of both institutions.

Affordability:

- ***Tuition and Fees -*** At the undergraduate level, UMUC's in-state tuition and fees are the lowest among system schools, with the exception of University of Maryland Eastern Shore's in-state tuition and fees which are the same as UMUC's. UMUC's out-of-state tuition and fees for undergraduates are the lowest among all system schools.
- ***Adoption of e-Resources in Lieu of Publisher Textbooks –*** Beginning with its undergraduate programs in AY2015-16, and followed by its graduate programs, UMUC moved from requiring costly publisher textbooks to using electronic and open access course materials. This saves UMUC students approximately $20 million per year.
- ***UMUC Completion Scholarship -*** Eligible Maryland community college graduates have the opportunity to earn a bachelor's degree at a significantly reduced cost, completing a bachelor's degree program for a total of $20,000 or less (inclusive of the associate degree cost), well below the typical tuition cost for in-state students. Qualifying students must be a graduate of a Maryland community college with a conferred associate degree and must be eligible within the first 12 UMUC credits. The tuition discount is awarded for up to 60 credits at UMUC.
- ***Prince George's 3D Scholars Program*** - Prince George's County Public Schools, Prince George's Community College (PGCC), and UMUC offer an affordable, definitive pathway to a bachelor's degree for students in Prince George's County, beginning with dual enrollment in high school. Students who are accepted into the program begin taking courses at PGCC while still in high school, earning credits toward an associate degree. Upon graduation from high school, students immediately transition to PGCC to complete the associate degree. Finally, they are awarded a scholarship to UMUC to earn their bachelor's degree for a total cost of less than $10,000.
- ***Other Institutional Aid*** UMUC offers more than $2 million in institutional scholarship programs each fiscal year to various special student groups.

Achievement:

- ***Chatbot –*** The launch of the aforementioned chatbot in July 2019 is expected to greatly reduce the need for current students to request support for common issues. As a result, the university expects advisors and other support staff will have more time to conduct high-value consultations with students about more complex topics related to student success.
- ***JumpStart -*** A Jump Start event is held approximately one week before our largest start dates each term. Our Jump Start event is available for new applicants, newly enrolled students, and readmitted students. This event features a virtual exhibit hall with a variety of booths that attendees can visit to chat live with an advisor, watch pre-recorded videos, and download information.

- ***Applicant Onboarding Badging*** - A new applicant onboarding program is currently in development with a projected launch date in the Fall of 2019. This program is designed to give new UMUC applicants access to an onboarding portal with different badges they can earn for completing activities to familiarize themselves with their UMUC student portal, their online classroom, UMUC Student Success resources (e.g. the Effective Writing Center, online library, time and tuition estimator) and new degree planning worksheets designed to help new applicants map out a path to graduation that best fits their desired degree completion timeline and appropriate course load.
- ***New Student Onboarding -*** UMUC's Admissions team has implemented multiple programs since 2017 to better prepare newly enrolled students to have a successful first course. One week prior to each session start, our Admissions team makes New Student Success calls to all newly enrolled students. Topics covered during these calls include a personalized walk-through of the online classroom to help students better understand how to access and navigate their course environment prior to their class starting, time management and student success tips, and any missing documents or outstanding items that students need to submit to avoid an interruption in their studies.
- ***New Student Welcome Initiative*** - As a bridge between the New Student Onboarding program and the 1st Term Experience described below, the Advising team provides support through its New Student Welcome program. As part of this program, new students are reassigned from Admissions to Student Advising during the second week of class, and advisors begin a series of communication touchpoints that are welcoming, consultative, program and career-focused, information-driven, and supportive in nature. Desired outcomes of the New Student Welcome program include an increase in class participation, improved course completion rates of first-term students, increased re-enrollment and retention rates, and overall improvement in student satisfaction. After the third week of class, the New Student Welcome program transitions into the 1st Term Experience.
- ***1st Term Experience*** - Institutional and external data strongly suggest that retention rates are most impacted by a new student's first term performance. UMUC's Advising team strategically engages new students within a structured 1st Term Experience framework. In Summer 2019, the Advising Team updated this 1st term experience to include a series of advising-specific and general-campaign related touchpoints based on individual student needs and behaviors throughout the first term. The scope of communication includes: consultative advising, degree mapping, one-touch registration messaging, positive nudging, and at-risk interventions. Beginning in Summer 2019, advisors will have access to individual student risk scores and risk factors that are generated by student behaviors and performance. The 1st Term Experience will use this predictive model to help advisors determine which prescriptive responses can increase the likelihood of persistence to the student's next term. Desired outcomes include re-enrollment in the next term, higher course completion rates, and overall improvement in retention rates.
- ***Success Coach Pilot*** - In Summer 2019, the Admissions and Advising teams implemented a Success Coach pilot program as an alternative way to advise its students. Each Success Coach provides personalized and consultative support services and advising for a specific population of students. The Success Coach pilot will examine impacts on student retention provided through dedicated and personalized advising.

- ***2nd Chance Grant*** - Prior to Fall 2018, UMUC reviewed the academic performance of students enrolled in Summer 2018. For those students who withdrew from or failed a course and had not yet completed a required one-credit course focusing on research process and methods, UMUC offered to cover the cost of this introductory course in Fall 2018. Nearly 60% of the students who accepted this grant for Fall 2018 re-enrolled in Spring 2019. UMUC is planning to continue this grant program contingent upon additional funding.
- ***Near Completer Grant*** - In Fall 2018 and Spring 2019, UMUC offered two versions of a Near Completer Grant to undergraduate students within 30 credits of degree completion who had stopped taking classes. These near completers were offered one of these grants to cover the cost of one course to encourage them to continue their progress to degree completion at UMUC. Additionally, support was provided in the form of dedicated advising and updated degree mapping. Students receiving one of these grants tended to reenroll at a higher rate than similar student groups who did not receive either grant. UMUC is planning to continue this grant program contingent upon additional funding.
- **PACE 111 -** This new course for undergraduate students as of Fall 2019 explores how academic programs align to professional goals and helps students understand how to be successful learners. Students will become familiar with the university's culture and expectations, reflect on academic and professional goals, complete assignments relevant to their major, discuss ways to advance progress toward a degree through transfer credit and other prior learning, and explore UMUC's resources for student success.
- ***New Gen Ed Math Option -*** UMUC is changing the list of mathematics courses available to meet the math general education requirement so that students will have the option of taking a new college level math course aligned with the Maryland Mathematics Reform Initiative standards for non-STEM majors. This new course uses adaptive learning technology and may enable students to more quickly complete their math requirement, which often impacts degree completion.
- ***Military Warm Handoff*** - The Global Military Operations Warm Hand Off process was created to guide military students as they move from duty station to duty station or one division to another. A staff member at or near the new location proactively outreaches to the student to provide them a warm welcome to their new location and offer assistance with the transition.
- ***Degree Planning*** – The process of selecting courses can be cumbersome and confusing given the number of choices that students have in general education and major requirements. Currently, students have access to enrollment advisors, online tools, and the catalog to determine what their program requirements are and which courses to take next. UMUC is in the process of developing additional degree planning tools that indicate the quickest and most effective path to finish a program. These degree planning tools may minimize the time and expense needed to reach the point of graduation.

UNIVERSITY SYSTEM of MARYLAND

BOARD OF REGENTS

SUMMARY OF ITEM FOR ACTION, INFORMATION, OR DISCUSSION

TOPIC: Crisis Management and Enterprise Risk Management in the USM

COMMITTEE: Education Policy and Student Life

DATE OF COMMITTEE MEETING: Friday, March 6, 2020

SUMMARY: At the November 2018 Board of Regents retreat, the Board agreed that USM needed to develop a policy that would guide the Chancellor and Presidents in their implementation of enterprise risk management (ERM) and crisis management (CM) processes. Reporting to the Audit Committee of the Board, Regent Louis Pope chaired a workgroup whose objective was to fully understand ERM and CM and the needs of our System and institutions. It was shown that best practice in effective governance, at both an institution and System-wide level, requires that management have a process for responding to events considered to be a crisis and that management periodically assesses potential risks and exposures, evaluates the probability and the impact of each, and, where appropriate, adopts risk mitigation strategies.

On November 22, 2019, the Board of Regents passed the USM Policy on Enterprise Risk Management (VIII-20.00), which formalizes the expectation that each institution, regional higher education center, and the System Office develop processes to periodically identify, review, and assess significant strategic, financial, operational, and reputational risks. Also, on November 22, 2019, the Board passed the USM Policy on Crisis Management (VIII-21.00), which formalizes the expectation that each institution, regional higher education center, and the System Office develop processes and protocols for responding to negative unanticipated events and ensure organization-wide understanding of the response protocol. Furthermore, each entity shall adopt risk prevention and mitigation strategies, and periodically discuss those risks and the prevention or mitigation strategies with the Chancellor as a part of the annual presidential performance evaluation process. Institution presidents have until Spring 2020 to establish a crisis management process and will begin the required reporting under this policy during the performance appraisal process in the Spring of 2021. Additionally, starting in Spring 2021, institution presidents will have to report institutional risks and mitigation or prevention strategies during their performance appraisal process.

The committee will hear about these policies and their importance and significance to USM and our institutions.

ALTERNATIVE(S): This is an information item.

FISCAL IMPACT: This is an information item.

CHANCELLOR'S RECOMMENDATION: This is an information item.

COMMITTEE RECOMMENDATION: Information Only	DATE: March 6, 2020
BOARD ACTION:	DATE:

SUBMITTED BY: Ellen Herbst 301-445-1923 eherbst@usmd.edu

University System of Maryland

VIII-20.00 POLICY ON ENTERPRISE RISK MANAGEMENT

(Approved by the Board of Regents on November 22, 2019)

I. PURPOSE

Best practices in effective governance at an institution and System-wide level, requires that management periodically assesses potential risks and exposures, evaluates the probability and the impact of each and where appropriate, adopts risk mitigation strategies. These processes should inform decisions and strategic planning, both within each institution, as well as at the System level.

This policy formalizes expectations of each University System of Maryland institution to establish an ongoing system of risk management appropriate to the institution's mission and strategic initiatives. The policy also sets periodic reporting expectations and processes for reporting key risk items.

II. ENTERPRISE RISK MANAGEMENT (ERM)

A. Institution-level ERM

Pursuant to this policy, each USM institution and regional higher education center, including the USM Office, is to adopt an enterprise risk management process. The process should be developed to assure that potentially significant and likely risk exposures have been identified and communicated to institutional leadership, and that plans to reduce the risk of occurrence, or mitigate the exposure have been developed.

Under the leadership of each institution's President, an institution-wide body, such as a campus cabinet or president's leadership team, is to identify and quantify risks, determine risk tolerances, and oversee risk mitigation strategies or measures where appropriate.

The enterprise risk management process must include an inventory, or register, of risks and exposures that are potentially significant in terms of both likelihood and impact that strategic interests and goals of the institution could be impacted. Each risk should have identified a responsible official or department which will monitor and adopt mitigation strategies as appropriate, and periodically report to the institution-wide body responsible for overseeing the risk management process. Risks are to be evaluated as to the potential impact, as well as the likelihood of occurrence.

Institutions are expected to adopt risk management practices suitable and appropriate to the institution's activities and goals. Tailoring risk management activities to the institution's focus and goals may result in similar institutions assessing the likelihood, and the impact, of similarly described risks differently, with risk tolerance and mitigation

strategies that reflect those differences. Each risk management process is to include the basic steps of:

Risk identification;
Risk assessment;
Risk tolerance, prevention and mitigation; and
Reporting,

the specific risks, determination as to impact and likelihood, and accordingly, prevention and mitigation strategies, are likely to vary from institution to institution. It is important that each cycle of assessment and evaluation of risks, impact and likelihood, also consider the identification of new and emerging risks.

This policy is not intended to require a specific risk identification, assessment, mitigation or reporting process and acknowledges that institution's may have different approaches and processes to address enterprise risk management.

B. System-wide

The Chancellor is to develop a risk management process for the University System of Maryland appropriate for a comprehensive state-wide university system, that identifies, assesses, mitigates and communicates System-wide risks and exposures, and complements risk management practices at each institution. The risk assessment is to be done in consultation with the Director of Internal Audit, vice chancellors, and institution presidents, and should represent a set of identified System-wide risks and exposures appropriate to System-wide planning and action.

A review and discussion of System-wide risks and exposures, the assessment of impact and likelihood, and strategies and efforts in place to address, prevent or mitigate System-wide risks is to be considered by the Board of Regents Committee on Audits at least annually.

III. REPORTING REQUIREMENTS

Institution Presidents are expected to communicate to the Chancellor that an institutional enterprise risk management process is in place and operationally functional, and review with the Chancellor, as a part of the presidential performance review process, the 3-5 risks assessed to be the most significant concerns to institutional leadership in terms of setting strategic goals and planning.

Institution Presidents, by March 31st annually, are to provide notification to the Chancellor that a review or update of the institution's risk assessment and management plan has been performed, and are to provide a listing of significant events that have occurred in the prior calendar year that were contemplated and planned for in the institution's risk management process.

IV. DEFINITIONS

Strategic risks – an event or activity, whether internal or external, that has the potential to negatively impact the institution's ability to pursue its mission and/or achieve its key strategic goals and objectives. These risks include inadequate strategic planning and goal setting, crisis response and business continuity, reputation and brand, and community relations.

Financial risks – risks and exposures that are associated with inadequate financial planning, management and operational outcomes, including the budgeting and financial reporting processes, financial controls, debt management, endowment investing, and risk management and insurance provision.

Operational risks – risks and exposures that do not have an immediate financial impact but impact the core mission and objectives of the institution. Included here are risks to the academic enterprise such as academic quality, tenure and faculty promotion, accreditation, faculty recruitment, on-line learning, program development (including closures, new programs, and international programs). Weather events, power disruptions, and other potential events impacting availability of facilities, would be another group of operational risks, to the extent that those risks are both likely and significant in impact. Research activities and issues surrounding medical centers would also fall under the category of operational risks.

Reputational risks- risks and exposures that may harm education mission by casting doubt on commitments by campus leadership and negatively affecting the image of the University. Such risks may include claims of harassment and discrimination, waste and abuse, scholarly misconduct. Reputational risks may also be strategic, financial and operational risks depending on the nature and severity.

Risk mitigation-steps taken at the institution and System level to identify, assess and address and report on potential risks. Risk mitigation may include institution level threat and risk assessment team efforts, trainings, coordinated efforts across institutions to identify and mitigate risk.

Risk tolerance –ability or willingness by an institution or the System's leadership to accept a certain level of likelihood that a particular risk exposure materializes. Risk tolerance is important in considering the possibilities for mitigating or eliminating particular risks and exposures, each of which are likely to carry an associated cost or set of requirements.

UNIVERSITY SYSTEM of MARYLAND

VIII-21.00 POLICY ON CRISIS MANAGEMENT

(Approved by the Board of Regents on November 22, 2019)

I. PURPOSE

Best practice in effective governance at both an institution and System-wide level, requires that management have a process for responding to events considered to be a crisis.

This policy formalizes expectations that each University System of Maryland institution and regional higher education center, including the System Office, and the chancellor on behalf of the University System generally, establish a process and set of protocols and steps for use in responding to events that each level considers a crisis, as defined below.

II. CRISIS MANAGEMENT

Each President shall develop protocols for use in responding to and communicating when a crisis arises. Board of Regents Policy VI-10.00 formalizes requirements associated with campus emergency planning, preparedness, and response. An emergency, depending on the impact and exposure, operationally, in terms of public safety, and reputationally, may also be considered a crisis within the meaning of this policy and require additional coordination and consultation, public communication, and response and recovery.

A crisis is defined as:

1. A negative event that was unanticipated and for which plans had not been formulated,
2. A negative event that had been planned for, but happened at a rate or pace unanticipated, or
3. A confluence of events anticipated and planned for individually, but not in combination.

The University System Office will provide guidance to support each President developing a crisis management process for their university appropriate for that university, that, at minimum, includes clear reporting and escalation, response structure and team roles, and crisis communications.

Each institution, and the System as a whole, are to develop crisis communication plans that detail who is responsible for communications in the event of particular events, and a general plan for events not anticipated.

Care should be taken to ensure that crisis communications considers and includes students, faculty, staff, and other identified institution and System interested parties. Once a crisis management process has been developed by an institution, periodic testing of the process in response to a potential crisis should be carried out to ensure that all involved at an institution in

crisis management understand roles, protocols, and processes. The process should be reviewed and refined after any actual crisis event, if appropriate, to improve institutional responses and communications.

In the event of a crisis, immediate notification to the Chancellor and the Vice Chancellor for Communications is to happen as soon as is practical under the circumstances, even if all the facts and considerations are not yet known. The Chancellor will communicate with the Chair of the Board of Regents to provide an understanding of the event or emergency, the current institution or System response, and to consult on the communication strategy as appropriate.

III. REPORTING REQUIREMENTS

Institution Presidents are expected to communicate to the Chancellor that an institution level crisis management process has been established and is understood, and reviewed with the Chancellor, as a part of the presidential performance review process, any negative events and emergencies at the institution level that fall within the definition of crisis above that occurred in the prior calendar year.