UNIVERSITY SYSTEM of MARYLAND

3300 METZEROTT ROAD // ADELPHI, MD 20783
WWW.USMD.EDU // 301.445.1992

Board of Regents
Committee on Education Policy and Student Life

Tuesday, January 15, 2019
9:30 a.m.
University of Maryland, Baltimore County

Agenda
Public Session

Action Items

1. New Academic Program Proposal
    a. University of Maryland, Baltimore County: Bachelor of Science in Middle Grades STEM
    b. Frostburg State University: Combined Bachelor of Science in Exercise and Sport Science/Master of Science in Athletic Training
    c. Frostburg State University: Master of Science in Athletic Training
    d. Towson University: Master of Education in Gifted and Creative Education
    e. University of Maryland, Baltimore: PhD in Health Professions Education
    f. University of Maryland, College Park: Bachelor of Arts in Philosophy, Politics and Economics
    g. University of Maryland, College Park: Bachelor of Science in Embedded Systems and Internet of Things
    h. University of Maryland, College Park: Bachelor of Science in Human Development
    i. University of Maryland, College Park: Bachelor of Science in Neuroscience

Information Items

2. Update: Academic Integrity
3. Results New Program 5-Year Enrollment Review
4. Results of Periodic Reviews of Academic Programs
5. Update: Kirwan Commission on Innovation and Excellence in Education
6. Report on Extramural Funding – FY 2018
7. Report: Intercollegiate Athletics FY 2018 Academic Summary Report

Action Item

8. Motion to Adjourn and Reconvene in Closed Session

UNIVERSITY SYSTEM of MARYLAND

BOARD OF REGENTS

SUMMARY OF ITEM FOR ACTION, INFORMATION, OR DISCUSSION

TOPIC: University of Maryland, Baltimore County: Bachelor of Science in Middle Grades STEM

COMMITTEE: Education Policy and Student Life

DATE OF COMMITTEE MEETING: Tuesday, January 15, 2019

SUMMARY: The University of Maryland, Baltimore County (UMBC) proposes to offer the Bachelor of Science in Middle Grades STEM in response to the critical shortage declared by the Maryland State Department of Education (MSDE) of middle grades (4-9) teachers in mathematics and science and the call by the University System of Maryland (USM) 10-year strategic plan ("Powering Maryland Forward") to "triple the number of STEM teachers graduating from USM institutions". With only 41% of teachers in Maryland being prepared in-state, the proposed degree is timely and uniquely prepares graduates for employment in this critical occupational growth area. No other institution of higher education in Maryland offers a middle grades STEM degree.

The proposed B.S. in Middle Grades STEM degree was developed in collaboration with UMBC's biology, chemistry, physics, and mathematics departments along with its College of Engineering and Information Technology to ensure that the program includes in-depth understanding of all STEM content areas. The education coursework is patterned after existing UMBC teacher certification programs but tailored to focus on characteristics of teaching specific to middle grades and STEM so that graduates can engage their students in meaningful inquiry-driven instruction as required by new education standards (e.g., Maryland College and Career Readiness Mathematical Standards, Next Generation Science Standards). The new degree will further UMBC's mission to prepare its talented undergraduate students for entry into the workforce, community service, and leadership.

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 Education Policy and Student Life Committee recommend that the Board of Regents approve the proposal from the University of Maryland Baltimore County to offer the Bachelor of Science in Middle Grades STEM.

COMMITTEE ACTION:		DATE: January 15, 2019
BOARD ACTION:		DATE:
SUBMITTED BY: Joann A. Boughman	301-445-1992	jboughman@usmd.edu

UMBC

AN HONORS UNIVERSITY IN MARYLAND

Office of the President
University of Maryland, Baltimore County
1000 Hilltop Circle
Baltimore. Maryland 21250

PHONE'. 410-455-2274
FAX'. 410-455-1210
VOIŒ/ TTY: 410-455 -3233
wrn: www.umbc.edu

December 5, 2018

Robert L. Caret , Ph.D.
Chancellor
University System of Maryland
300 Metzerott Road , Suite 2C
Adelphi, Maryland 20783

Dear Chancellor Caret:

UMBC seeks approval to offer a new Bachelor of Science in Middle Grades STEM. This is an exciting new program that addresses the Maryland State Department of Education's (MSDE} identified shortage of Mathematics and Science teachers for the Middle Grades in our state. To help address this need, MSDE has added Middle Grades as a new area of teacher certification, and UMBC seeks to address these needs in STEM, one of our identified strengths. As such, this program is unique in the State of Maryland, and it adds to UMBC's existing bachelor's programs in Chemistry Education, Biology Education, and Physics Education.

Increasing the number of highly qualified STEM educators is an imperative if we are to prepare future generations of our young people with the knowledge and skills to compete in the economies of Maryland and our region. UMBC is pleased to expand its contributions in fulfillment of USM's strategic plan.

Thank you very much for your review of UMBC's proposal. We look forward to hearing from you if you have any questions.

Sincerely ,

Freeman A. Hrabowski, III

President

C Dr. Antonio Moreira, UMBC

UNIVERSITY SYSTEM OF MARYLAND INSTITUTION PROPOSAL FOR

__ X__ New Instructional Program
_____ Substantial Expansion/Major Modification
_____ Cooperative Degree Program

University of Maryland, Baltimore County

Institution Submitting Proposal

Bachelor of Science in Middle Grades STEM

Title of Proposed Program

Bachelor of Science	**Fall 2019**
Degree to be Awarded	Projected Implementation Date
	13.1019
Proposed HEGIS Code	Proposed CIP Code
Education Department	**Jonathan Singer, Chair** **Linda Oliva, Associate Chair**
Department in which program will be located	Department Contact
410-455-2466	**(jsinger@umbc.edu)** **(oliva@umbc.edu)**
Contact Phone Number	Contact E-mail Address
Signature of President or Designee	2/4/18 Date

Centrality to institutional mission statement and planning priorities

The Maryland State Department of Education (MSDE) has added middle school (grades 4-9) as a new area of teacher certification. To serve the UMBC students who want to specialize in STEM education at the middle grades level, the UMBC education department is proposing a new Middle Grades STEM with concentrations in mathematics and science. UMBC currently certifies undergraduate teacher candidates for early childhood, elementary, or secondary teaching and offers bachelor degrees in biology education, chemistry education, and physics education. The new degree program is designed to equip teacher candidates with the necessary knowledge, skills, and dispositions to become successful STEM teachers of young adolescent learners (grades 4 through 9). The main goal of the new program is one shared by UMBC and the Association for Middle Level Education (AMLE), which is to improve the educational experiences of young adolescents by providing vision, knowledge, and resources to all who serve and teach them.

The proposed Bachelor of Science in Middle Grades STEM reflects UMBC's mission in specific ways as described below.

> *"UMBC is a dynamic public research university integrating teaching, research and service to benefit the citizens of Maryland."* Maryland has consistently had a shortage of qualified teachers, particularly in the critical STEM content areas. Early-career attrition, flat teacher education graduation rates, and teacher retirements are contributing factors. The proposed Bachelor of Science in Middle Grades STEM will provide a benefit to the citizens of Maryland by increasing the number of highly qualified STEM educators available to teach children and youth in the State.
>
> *"As an Honors University, the campus offers academically talented students a strong undergraduate liberal arts foundation that prepares them for graduate and professional study, entry into the workforce, and community service and leadership."* According to the Maryland Teacher Staffing Report 2014-16, 23 of the state's 25 school districts have been designated as geographic shortage areas based on superintendents' inability to fulfill their staffing needs in critical content areas. Consequently, students with degrees and certification in STEM education are highly marketable within the state, and employment trends suggest that their marketability will continue into the foreseeable future. Thus, the proposed Bachelor of Science in Middle Grades STEM will further UMBC's mission to prepare its talented undergraduate students for entry into the workforce, community service, and leadership.

Moreover, the proposed degree program will advance UMBC's existing strategic goals for student learning. Specifically, UMBC seeks to strengthen its:

> *…[P]erformance as a research university that integrates a high-quality undergraduate education with faculty scholarship and research through a distinctive curriculum and set of experiences promoting student engagement, such as seminars, study groups, research opportunities, mentoring, advising, co-curricular learning experiences, and exposure to diversity.*

The proposed Bachelor of Science in Middle Grades STEM will be unique in the state and further distinguish UMBC as an innovative institution "with a deep commitment to undergraduate education." While Middle Grades STEM is the first bachelor's degree initiated by the Department of Education, UMBC's existing bachelor's degrees in Chemistry Education, Biology Education, and Physics Education have established UMBC as degree-granting in the area of baccalaureate education in the Baltimore Metropolitan area. In addition, like all certification programs in education, the proposed degree will include specialized seminars; preK-12 classroom-based research opportunities; and field experiences and internships in diverse public schools in Baltimore City, Baltimore County, Howard County, and Anne Arundel County through the department's network of professional development schools.

B. Critical and compelling regional or statewide need as identified in the State Plan

1. The proposed Bachelor of Science in Middle Grades STEM aligns with the goals stated in "Powering Maryland Forward", USM's 10-year strategic plan. One of these goals is to, "Expand baccalaureate degree production by an additional 10,000 degrees, with particular focus on the high-need areas of science, technology, engineering, and mathematics, or STEM". The proposed bachelor's degree will add to the number of baccalaureate degrees in STEM education subjects (e.g., biology, chemistry, and physics education) conferred at UMBC. The proposed bachelor's degree will also help to achieve a second and related target, which is to "Triple the number of STEM teachers graduating from USM institutions". Thus, the Bachelor of Science in Middle Grades STEM will help to meet current and future needs within the State and region.

The proposed Bachelor of Science in Middle Grades STEM will provide a benefit to the citizens of Maryland by increasing the number of highly qualified STEM educators available to teach children and youth in the State. In its *Maryland Teachers Staffing Report for 2016-2018*, the Maryland State Department of Education (MSDE) declared a critical shortage of teachers in Middle Grades (4-9) for both Mathematics and Science (pg. 44). There are also critical shortages in grades 7-12 in Mathematics and in these Sciences: Biology, Chemistry, Earth/Space Science, Physical Science, and Physics. The Maryland Department of Labor, Licensing and Regulations projects that between 2014 and 2024, there will be a 30% increase in the number of middle grades teachers needed in Maryland (Maryland Occupational Projections - 2014-2024 - Workforce Information and Performance, online).

Students with degrees and state certification in STEM education are highly marketable within the state, and employment trends suggest that their marketability will continue into the foreseeable future. The proposed Bachelor of Science in Middle Grades STEM will further UMBC's mission to prepare its talented undergraduate students for entry into the workforce, community service, and leadership.

2. In addition, the proposed degree, which will prepare middle grades STEM teachers, aligns with priorities outlined in the Maryland State Plan for Postsecondary Education (MSPPE). Specifically, the MSPPE charges colleges and universities to "appropriately staff and support high-needs employment areas, such as teacher education, STEM fields, and nursing, while

continuing to provide a solid core foundation of skills". The MSPPE also describes the need for undergraduate degrees that provide applied learning experiences, stating:

> …[O]pportunities should be available for students to become intentional learners in diverse learning environments. An intentional learner is purposeful and sets clear goals…. Diverse learning environments include service learning, study abroad, and internships and externships that help bridge classroom lessons and real-life applications.

The proposed Bachelor of Science in Middle Grades STEM includes field experiences and a 100-day internship in diverse p-12 professional development schools in Anne Arundel County, Baltimore City, Baltimore County, and Howard County, helping students to connect theory, research, and practice.

C. Quantifiable & reliable evidence and documentation of market supply & demand in the region and State

1. In May 2017, Maryland employed 12,110 middle school teachers[1]. Only approximately 41% of teachers in Maryland were prepared in Maryland[2]. Middle Grades Education (Grades 4-9) mathematics and science have been declared critical shortage areas in 2016-17 and 2017-18 for Maryland[2]. Graduates from the proposed Bachelor of Science in Middle Grades STEM will be prepared for employment in this critical occupational growth area in the state.

3. According to the Bureau of Labor Statistics, employment of middle school teachers is projected to grow 8 percent from 2016 to 2026, about as fast as the average for all occupations. Growth is projected due to expected increases in enrollment combined with declines in student–teacher ratios. For more information regarding the field, nationally, see Appendix A.

D. Reasonableness of program duplication

1. As of today, no other institution of higher education in Maryland offers a Middle Grades STEM degree. The University of Maryland, College Park (UMCP) offers a Middle School Math and Science degree, and Towson University offers a general Middle School degree that include mathematics and science. Neither institution offers a broader, integrated STEM degree with required coursework in Math, Science, Engineering, and Technology. New education standards (e.g., Maryland College and Career Readiness Mathematical Standards, Next Generation Science Standards) require that middle grade math and science teachers have an in-depth understanding of all four STEM content areas so that they can engage students in meaningful,

[1] Bureau of Labor Statistics. (2017). *Occupational employment statistics: Occupational employment and wages, May 2017*. https://www.bls.gov/oes/current/oes252022.htm#nat

[2] Maryland State Department of Education. (2016). Maryland teacher staffing report: 2016-2018. http://www.marylandpublicschools.org/about/Documents/DEE/ProgramApproval/MarylandTeacherStaffingReport20162018.pdf

inquiry driven instruction. The proposed program was designed to meet these new standards in mathematics and science.

The proposed Bachelor of Science in Middle Grades STEM will be unique in the state and further distinguish UMBC as an innovative institution with a deep commitment to undergraduate education.

2. The UMBC Bachelor of Science in Middle Grades STEM will provide students with a unique opportunity to develop an integrated understanding of math, science, engineering and technology. Building on UMBC's reputation in STEM, the education department will be the first in the state to offer such a program. Thus, graduates will be prepared to fill two of the State's critical needs in p-12 education – highly qualified middle grades teachers, and highly qualified STEM teachers.

E. Relevance to implementation or maintenance of high-demand programs at Historically Black Institutions (HBIs)

1. Currently, no HBI in the state offers a Bachelor's degree in Middle Grades STEM, in any subject area for middle grades, or explicitly in integrated STEM education. There is therefore no anticipated negative impact on programs offered by HBIs.

2. Relevance to the Support of the Uniqueness and Institutional Identities of HBIs
The proposed bachelor's degree in Middle Grades STEM has the potential to produce students for advanced degree programs in STEM related fields at two Maryland HBIs –Bowie State University and Morgan State University.

F. Relevance to the support of the uniqueness and institutional identities of HBI's

The proposed BS in Middle Grades STEM will prepare teacher candidates to be strong STEM teacher leaders. Graduates from the program will be well-positioned to enter advanced degree programs in educational leadership, many of which are offered by HBIs in Maryland. We will actively encourage students interested in pursuing advanced degrees to consider the programs offered by HBIs. To begin this process, we have compiled a list of relevant advanced programs and degrees from Maryland HBIs. Our program website will include this information along with links to the HBI programs.

HBI	Program	Degree
Bowie State University	Educational Leadership	Ed.D.
	Elementary & Secondary School Administration	M.Ed.
	Special Education	M.Ed.
Morgan State University	Educational Administration and Supervision	M.S.
	Mathematics Education	Ed.D.
	Science Education	Ed.D.
	Urban Educational Leadership	Ed.D.
Coppin State University	Special Education	M.Ed.

HBI	Program	Degree
	Curriculum & Instruction	M.Ed.
University of Maryland Eastern Shore	Special Education	M.Ed.
	Education Leadership	Ed.D.

G. Adequacy of Curriculum Design and Delivery to Related Learning Outcomes

1. The Association for Middle Level Education (AMLE) and Maryland State Department of Education (MSDE) require that middle grades educators have specialized strength in a content area. The proposed content area for specialization is STEM. The courses in the curriculum will be a combination of middle grades education courses (41 credits), STEM content courses (57 or 58 credits), and UMBC general education courses (GEPs; 25 credits), shown in Table 1.

Table 1. List of Courses and Credits

Course Number and Title	Credits
Education Major Requirements	**41**
EDUC310 Inquiry into Education (Social Science GEP)	3
EDUC311 Psychological Foundations of Education (Social Science GEP)	3
EDUC388 Inclusion and Instruction	3
EDUC410 Reading in the Content Area I	3
EDUC411 Reading in the Content Area II (Writing Intensive GEP)	3
EDUC412M Introduction to Middle Level Teaching and Learning	3
EDUC431 Methods for Teaching STEM in The Middle Grades	3
EDUC435 Integrated STEM Content and Pedagogy	3
EDUC466 School, Family, and Community Partnerships for Middle Grades STEM Success	3
EDUC454 Phase I Seminar	2
EDUC456 Phase II Internship	10
EDUC457 Phase II Seminar	2
STEM Content Courses	**57 or 58**
MATH 131 Mathematics for Elementary School Teachers I	4
MATH 132 -Mathematics for Elementary School Teachers II	4
MATH 155 Applied Calculus OR MATH 151 – Calculus and Analytic Geometry I	4
STAT 350 Statistics with Applications in the Biological Sciences OR STAT 355 Introduction to Probability and Statistics for Scientists and Engineers	4
BIOL 141 Foundations of Biology: Cells, Energy, and Organisms	4
BIOL 142 -Foundations of Biology: Ecology and Evolution	4
BIOL 300L Experimental Biology Laboratory	2
BIOL 302 Molecular and General Genetics	4
GES110 Physical Geography	3
CMSC 104 Problem Solving and Computer Programming OR CMSC 201 – Computer Science I	3 OR 4
CHEM101 Principles of Chemistry I	4
CHEM102 Principles of Chemistry II	4

Course Number and Title	Credits
CHEM102L-Introductory Chemistry Lab I	2
PHYS111 Basic Physics I	4
PHYS112 Basic Physics II	4
ENES101-Introduction to Engineering	3
Additional General Education Program (GEP) Requirements	**25**
Composition (Recommended: ENGL100 Composition)	3
Foreign Language 201	4
Social Science (Recommended: GES 326 American Conservation Thought)	3
Arts & Humanities (Recommended: PHIL251 – Ethical Issues in Science and Engineering)	3
Arts & Humanities (Recommended: AMST200 What is an American?)	3
Arts & Humanities (Recommended: THTR 242 Presentation Skills for Non-Actors)	3
Culture (Recommended: GES 102 Human Geography)	3
2 Physical Education	3

2. All the courses included in the curriculum will provide candidates with the knowledge, skills, and dispositions to be successful middle grades STEM teachers in diverse settings, following standards established by the Association for Middle Level Education. Moreover, students will be prepared for teacher certification in middle grades science and mathematics, making them uniquely marketable in the state and region (See Appendix B for a description of courses required for the degree).

3. As part of an honors university experience, students will be introduced to the richness and diversity of the various academic disciplines through general education requirements. Specifically, they will be required to take a single language through the 201- level or equivalent proficiency; three social science courses; three arts and humanities courses; and one cultural studies course in addition to their coursework in mathematics, science, engineering, technology, and education.

4. Students will be required to take 123 credits to complete the program. The sequence of courses is based on an integration of theory and practice and includes field experiences as well as an internship in a professional development middle school that will extend for two consecutive semesters at the end of the program. The four-year plan of study will include courses aligned with accreditation standards established by the Council for Accreditation of Educator Preparation (CAEP), AMLE, and MSDE. Successful completion of all course work including the two-semester internship will be required for Maryland teaching certification. (See degree program plan in Appendix C.)

H. Adequacy of any articulation

No articulation agreements with other institutions are required for this degree.

I. Adequacy of faculty resources

Over 90% of the education courses in this degree will be taught by full-time faculty; and over 80% will be taught by full-time faculty with doctoral degrees and extensive experience in the course content they will teach. Moreover, 50% of the education courses will be taught by tenured or tenure-track faculty. The faculty's areas of expertise reflect the competencies that students will be expected to demonstrate upon completion of the degree. See Appendix D for a description of faculty characteristics.

Four full-time, tenure-track education faculty will allocate 20% of their effort to assist with the implementation of the new degree, shown as .8 FTE in Appendix F. To complement their efforts, a new faculty member with specific research and teaching expertise in middle grades education will be hired in the second year of the program. The Expenditure Table in Appendix F shows the costs of salary and benefits for the new faculty hire. In Year 2, the category "Other Expenses" includes costs for a start-up package for the new hire.

J. Adequacy of library resources

The President assures that appropriate library resources are available to support the needs of this program.

K. Adequacy of physical facilities, infrastructure and instructional equipment (as outlined in COMAR 13B.02.03.13)

The President assures that appropriate physical facilities, infrastructure, and instructional equipment are available to support the needs of this program.

L. Adequacy of financial resources with documentation (as outlined in COMAR 13B.02.03.14)

The President assures that no new general funds from the State are required. The University will incur additional costs for instructors to teach extra sections, as needed, of content courses in the College of Arts, Humanities, and Social Sciences, the College of Engineering and Information Technology, and the College of Natural and Mathematical Sciences. Expenditures will also include costs for adjunct faculty in education to teach courses for the middle grades' degree. Expenses will also include equipment, and library costs. These new expenditures will increase as student enrollment in the new degree program increases (see Expenditure Table in Appendix F). However, these expenditures are not outside the normal costs associated with new bachelor's degrees in STEM.

M. Adequacy of provisions for evaluation of program consistent with Regulation .15 in COMAR

Faculty Evaluation: All tenured faculty are reviewed each year during the Spring Semester by the department chair or program head using the Faculty Annual Report. Student Evaluation of Educational Quality (SEEQs) from the previous two semesters may be included. The general criteria for the Annual Review of tenured faculty include those used for workload and merit pay reviews and are consistent with the departmental statement of Performance

Expectations. A comprehensive review of faculty occurs every five years using the components involved for promotion and tenure processes. A favorable review for promotion in rank substitutes for this review."

Academic Program Review: Each UMBC program undergoes an academic program review every seven years, the purpose of which is to assess and improve the quality of the program. Following the self-study and visit by external reviewers, an action plan for continuing to enhance the quality of the program is developed and implemented by the chair and senior management, with review by UMBC's faculty governance committees."

Program and Institutional Level Evaluation: The 2009 UMBC Assessment Plan delineates roles and responsibilities for learning assessment. The plan requires that academic programs collect data and provide assessment reports to their respective College Deans every two years. The Deans summarize findings in a report that is shared with the Council of Deans. Representatives of the General Education Committee (GEC) join this meeting with the purpose of determining how well the University is assessing and achieving its institutional-level student learning outcomes. The GEC develops a report that captures highlights and proposes recommendations for improvement. The University Assessment Committee, which includes stakeholders across the University, then reviews these reports. Achievements are noted and recommendations made for moving forward.

In addition, the department has instituted a regular and systematic method to evaluate students' learning outcomes as required by the Maryland State Department of Education (MSDE), Council on Accreditation of Education Programs (CAEP), and certification-specific Specialized Professional Associations (SPAs). These organizations require the department to collect and use evidence of student learning outcomes to confirm and improve students' educational experiences and outcomes. The SPA that oversees middle grades education is the Association of Middle Level Education (AMLE). AMLE will require the department to assess students' learning and progress within the proposed bachelor's degree program according to its professional standards. AMLE program approval is required for MSDE and CAEP certification. See Appendix G for a description of courses and related AMLE standards.

N. Consistency with the State's minority student achievement goals

UMBC has established a commitment to diversity as one of the core principles guiding its recruitment and retention of faculty, staff, and students. The department is committed to recruiting and graduating students that reflect the diversity of Maryland's p-12 public schools, which includes White (42.5%), African American (35.4%), Latino (12.1%), Asian (5.9%), and American Indian/Native Alaskan (4.1%) students from diverse socioeconomic backgrounds. To support the department's efforts, scholarships will be provided through the Sherman STEM Scholars Program and the Noyce Teacher Scholars program to students who commit to teaching in high-needs schools.

O. Relationship to low productivity programs identified by the Commission:
The proposed degree has no relationship to a low productivity program.

P. If proposing a distance education program, please provide evidence of the Principles of Good Practice.
No distance learning is included.

Appendix A: Employment Data for Middle Grades Teachers

Quick Facts: Middle School Teachers	
2017 Median Pay	$57,720 per year
Entry-Level Education	Bachelor's degree
Work Experience in a Related Occupation	None
On-the-job Training	None
Number of Jobs, 2016	630,300
Job Outlook, 2016-26	8% (As fast as average)
Employment Change, 2016-26	47,300

Appendix B. Full Description of Courses for Middle Grades STEM Degree

Course Number and Title	Credits
Education Major Requirements (41 credits)	
EDUC310 Inquiry into Education This course introduces reflective practice as a foundation for the study of teaching and learning. The macro- and micro-sociocultural contexts of education across diverse settings will be examined. Students will draw upon anthropological and sociological research methods to study the dynamics of classrooms, schools and communities. (Social Science GEP)	**3**
EDUC311 Psychological Foundations of Education The psychology of school learning will be explored. There will be an overview of theories of teaching, learning, motivation and related research, including the philosophical assumptions underlying each - within the dynamics of context of class, culture, race and gender issues. (Social Science GEP)	**3**
EDUC388 Inclusion and Instruction The course examines the legal, philosophical and programmatic underpinnings of instructional inclusion, broadly defined.	**3**
EDUC410 Reading in the Content Area I Major approaches to teaching reading to students in grades 7 to 12. Emphasis on skills in all content areas ranging from English to science, which the secondary teacher can apply toward improving secondary students' reading ability and their attitude toward reading.	**3**
EDUC411 Reading in the Content Area II (Writing Intensive) This course is designed to develop competency in the utilization of reading and writing strategies, assessments, vocabulary building, comprehension, and special-needs adaptations.	**3**
EDUC412M Introduction to Middle Level Teaching and Learning This course is an introduction to a systematic approach to instruction for middle grades (4-9). Special emphasis is placed on formal lesson plan development, use of research-supported strategies, and methods of differentiation. The use of technology resources in instructional planning is emphasized. Students will develop skills to create meaningful learning experiences for students of diverse cultural, ethnic, linguistic and intellectual backgrounds. These skills are then practiced in actual peer teaching situations that may occur off campus.	**3**
EDUC466 School, Family, and Community Partnerships for Middle Grades STEM Success Students examine the theory, research, and best practices on school, family, and community partnerships, with a particular emphasis on strategies to support young adolescents' success in STEM subject areas.	**3**
EDUC435 Integrated STEM Content and Pedagogy Students will review the integrated approaches to teaching Science, Technology, Engineering, and Mathematics (STEM). Integrated STEM pedagogies include project/problem-based (PBL), design-based, and inquiry-based approaches to teaching.	**3**

Course Number and Title	Credits
EDUC431 Methods for Teaching STEM in The Middle Grades This course introduces pedagogical practices associated with the teaching and learning of integrated STEM practices at the middle levels. The course addresses ideas that include (1) middle grades science, mathematics, engineering and technology (STEM) content, (2) understanding and developing middle grades students' thinking; (3) designing, selecting, and sequencing instructional tasks and assessments for learners in the middle grades; and (4) self-reflection on learning and teaching STEM at the middle school level.	**3**
EDUC454 Phase I Seminar This seminar course provides a forum for discussing and processing Phase I Internship experiences and current topics/issues/trends in STEM teaching and learning.	**2**
EDUC456 Phase II Internship This intensive internship provides students with the opportunity to take progressive responsibility for teaching in their specialty area and developing professional teaching competencies in a Professional Development School with support from a mentor teacher and a university supervisor.	**10**
EDUC457 Phase II Seminar The seminar provides a forum for discussing and processing field experiences and current issues/problems in teaching and learning.	**2**
STEM Content Courses (57 credits)	
MATH 131 - Mathematics for Elementary School Teachers I Intended primarily for prospective elementary school teachers. Structural aspects of mathematics and the 'why' of arithmetical computations. Topics include sets, functions, logic, numbers and number systems, numeration systems, properties of mathematical operations, techniques for computation, decimals, elementary number theory, metric and non-metric geometry, elements of probability and statistics.	**4**
MATH 132 -Mathematics for Elementary School Teachers II A continuation of MATH132	**4**
MATH 155 - Applied Calculus Basic ideas of differential and integral calculus, with emphasis on elementary techniques of differentiation and integration with applications, are treated in this course. OR **MATH 151 – Calculus and Analytic Geometry I** Topics of this course include limits, continuity, the rate of change, derivatives, differentiation formulas for algebraic, trigonometric, logarithmic, and exponential functions, maxima and minima, integration and computation of areas, the Fundamental Theorem of Calculus, areas and volumes of solids of revolution, and applications.	**4**

Course Number and Title	Credits
STAT 350 - Statistics with Applications in the Biological Sciences Organization and presentation of data, summary of descriptive measures, probability, binomial and normal distributions, sampling natural populations and the estimation of population parameters, hypothesis testing, chi-square analysis experimental designs and the analysis of variance, linear regression and correlation, and nonparametric statistics. Students will be introduced to statistical computing. All the statistical procedures will be illustrated using data from biology and the health sciences. OR **STAT 355 - Introduction to Probability and Statistics for Scientists and Engineers** An introduction to applied statistics designed for science majors and others with demonstrated quantitative ability. Topics include nature of statistical methods, random variables and their distribution functions, general principles of estimation and hypothesis testing. A laboratory introduces students to computer techniques in statistical analysis.	**4**
BIOL 141 - Foundations of Biology: Cells, Energy, and Organisms This course for majors provides a broad overview of contemporary biological concepts.	**4**
BIOL 142 -Foundations of Biology: Ecology and Evolution This course provides a broad overview of contemporary biological concepts. It is designed to prepare students for upper level biology core and elective courses. It is one of two introductory courses.	**4**
BIOL 300L - Experimental Biology Laboratory An upper level course of experiments designed to give students the essential laboratory and critical thinking skills in experimental design, implementation and analysis that every biologist should know.	**2**
BIOL 302 - Molecular and General Genetics Modern principles of heredity have been established through studies at the molecular, cellular and organismic levels. This course explores the fundamental biology of gene structure, organization, expression, and function as deduced from analyses of viral, prokaryotic, and eukaryotic systems and the gene interactions that underlie them.	**4**
GES 110 - Physical Geography Study of the principles and processes of climate, earth materials, landforms, soils and vegetation that give logic to their integrated patterns of world distribution.	**3**
CMSC 104 - Problem Solving and Computer Programming This course is designed to provide an introduction to problem solving and computer programming that does not require prior programming experience. OR **CMSC 201 – Computer Science I for Majors** An introduction to computer science through problem solving and computer programming. Programming techniques covered by this course include modularity, abstraction, top-down design, specifications documentation, debugging and testing. The core material for this course includes control structures, functions, lists, strings, abstract data types, file I/O, and recursion.	**3**
CHEM 101 - Principles of Chemistry I An introduction to chemistry for science majors and other students who require a thorough grounding in the principles of chemistry.	**4**
CHEM 102 - Principles of Chemistry II Principles of chemical and physical equilibrium, liquids and solids, elementary thermodynamics, electron and proton transfer reactions, electrochemistry, chemical kinetics and a further study of the periodic properties of the elements.	**4**

Course Number and Title	Credits
CHEM 102L-Introductory Chemistry Lab I A laboratory course designed to illustrate fundamental genetic principles by experimentation.	**2**
PHYS 111 Basic Physics I Three lectures and one two-hour laboratory period a week. A general physics course intended primarily for students in psychology, biology and health related sciences.	**4**
PHYS 112 Basic Physics II Continuation of PHYS 111. Topics include electricity, magnetism, optics and modern physics.	**4**
ENES 101-Introduction to Engineering Introduction to engineering that covers dimensional analysis, data analysis, professional practice, and an introduction to engineering subjects such as statics, heat transfer, and linear circuits.	**3**
Additional General Education Program Requirements (25 credits)	
Composition (Recommended: ENGL100 Composition) **ENGL100 Composition** A course in critical thinking, reading, and composing, with an emphasis on integrating academic research and documentation.	**3**
Foreign Language 201	**4**
Social Science (Recommended: GES 326 American Conservation Thought) **GES 326 American Conservation Thought** An exploration of the major ideas and events of American conservation history from European colonization through to the modern environmental movement. The course focuses upon changing attitudes towards nature, wildlife, and natural resources and also covers the evolution of federal policy regarding the establishment and management of national parks, forests and wilderness areas. In addition, we will review and analyze some of the major environmental and resource controversies of the last 100 years.	**3**
Arts & Humanities (Recommended: AMST200 What is an American?) **AMST200 What is an American?** This course will explore the evolving question of what constitutes American identity and belonging through important readings on race, class, ethnicity, religion, immigration, gender, sexuality, freedom, and equality.	**3**
Arts & Humanities (Recommended: PHIL251 Ethical Issues in Science and Engineering) **PHIL251 – Ethical Issues in Science and Engineering** The primary focus of the course will be inquiry into the ethical responsibilities of scientists, engineers and information technologists in today's high-tech, information-oriented society.	**3**
Arts & Humanities (Recommended: THTR242 – Presentation Skills for Non-Actors) **THTR242 – Presentation Skills for Non-Actors** An introduction to theatre performance skills that can be applied to public presentations. Emphasis is placed on developing greater expressiveness through the study of a range of acting, voice and movement techniques. Students will make presentations in class as they explore the relationship of the speaker/performer to the listener/ audience.	**3**
Culture (Recommended: GES 102 Human Geography) **GES 102 Human Geography** Study of the distribution of human activities and the causes and consequences of these distributions, including population, resources, economic activity, urban and rural settlements and cultural phenomena.	**3**

Course Number and Title	Credits
Physical Education (2 courses required)	**3**

Appendix C - Course Plan for Middle Grades STEM Degree – 123 credits

Year 1

Fall	Credits	Spring	Credits
ENGL GEP (Recommended ENGL 100 Composition)	3	AH GEP (Recommended: PHIL 251 Ethical Issues in Science and Engineering)	3
C GEP (Recommended: GES 102 Human Geography)	3	EDUC 310 Inquiry into Education (SS GEP)	3
MATH 131 Mathematics for Elementary School Teachers I	4	MATH 132 Mathematics for Elementary School Teachers II	4
BIOL 141 Foundations of Biology: Cells, Energy, and Organisms	4	BIOL 142 Foundations of Biology: Ecology and Evolution	4
		CMSC 104 Problem Solving and Computer Programming OR CMSC 201 Computer Science I	3 OR 4
Total Credits	**14**	**Total Credits**	**17-18**

Year 2

Fall	Credits	Spring	Credits
EDUC 311 Psychological Foundations of Education (SS GEP)	3	AH GEP (Recommended: AMST 200 What is a American?)	3
EDUC 388 Inclusion and Instruction	3	AH GEP (Recommended: THTR 242 Presentation Skills for Non-Actors)	3
Language 201	4	EDUC 412M Intro to Middle Level Teaching and Learning	3
MATH 155 Applied Calculus OR MATH 151 Calculus & Analytic Geometry I	4	GES 110 Physical Geography	3
CHEM 101 Principles of Chemistry I	4	CHEM 102 Principles of Chemistry II	4
		CHEM 102L Introductory Chemistry Lab I	2
Total Credits	**18**	**Total Credits**	**18**

Year 3

Fall	Credits	Spring	Credits
PHYS 111 Basic Physics I	4	EDUC 410 Reading in the Content Area I	3
ENES 101 Introduction to Engineering	3	EDUC 435 Integrated STEM Content and Pedagogy	3
STAT 350 Statistics with Applications in the Biological Sciences OR STAT 355 Introduction to Probability and Statistics for Scientists and Engineers	4	BIOL 300L Experimental Biology Laboratory	2
BIOL 302 Molecular and General Genetics	4	PHYS 112 Basic Physics II	4
EDUC 466 School, Family, and Community Partnerships for Middle Grades STEM Success	3	PE GEP	1.5
Total Credits	**16**	**Total Credits**	**15.5**

Year 4

Fall	Credits	Spring	Credits
~~EDUC 411 Reading in the Content Area II (WI GEP)~~	~~3~~	~~EDUC 456 Phase II Internship~~	~~10~~
EDUC 431 Methods for Teaching STEM in the Middle Grades	3	EDUC 457 Phase II Seminar	2
EDUC 454 Phase I Seminar	2		
SS GEP (Recommended: GES 326 American Conservation Thought)	3		
PE GEP	1.5		
Total Credits	**12.5**	**Total Credits**	**12**

Appendix D. Faculty Resources

Name	Appt. Type	Highest Degree	Field	Academic Title/Rank	Status (e.g., full-time, part-time, adjunct)	Course(s) Taught
Nancy Berge	Non-tenure track	MA	Special Education	Instructor	Adjunct	EDUC388
Susan Blunck	Non-tenure track	PhD	STEM Education; Middle Grades Education	Assoc. Clinical Prof.	Full Time	EDUC454
Tracy Irish	Non-tenure track	PhD	STEM Education; Professional Learning Communities	Clinical Instructor	Full Time	EDUC430
Cheryl North	Non-tenure track	PhD	Literacy; Secondary Education	Assist. Clinical Prof.	Full Time	EDUC410, EDUC 411
Linda Oliva	Non-tenure track	EdD	Educational Psychology; Instructional Technology; Teacher Research	Assist. Clinical Prof.	Full Time	EDUC311
Christopher Rakes	Tenured	PhD	Mathematics Education	Assoc. Prof.	Full Time	EDUC412M
Mavis Sanders	Tenured	PhD	School, Family, Community Partnerships; Cultural Diversity; School Reform	Prof.	Full Time	EDUC466
Eugene Schaffer	Tenured	EdD	Mentoring; School Effectiveness; Prof. Dev. Schools; At-Risk Youth	Prof.	Full Time	EDUC310
Jonathan Singer	Tenured	PhD	Science Education	Assoc. Prof.	Full Time	EDUC431; EDUC456; EDUC 457
Michele Stites	Tenure-track	EdD	Special Education; Early Childhood Edu.	Assist. Prof.	Full Time	EDUC388
New Faculty	Tenure-track	PhD/ EdD	Middle Grades Education	Open	Full Time	EDUC431; EDUC412

Appendix E: Resources Table

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)	**130350**	**307258**	**460551**	**586500**	**660790**
a. #F.T Students	15	34	49	60	65
b. Annual Tuition/Fee Rate[3]	8690	9037	9399	9775	10166
c. Annual Full Time Revenue (a x b)	130350	307258	460551	586500	660790
d. # Part Time Students	0	0	0	0	0
e. Credit Hour Rate	0	0	0	0	0
f. Annual Credit Hours	0	0	0	0	0
g. Total Part Time Revenue (d x e x f)	0	0	0	0	0
3. Grants, Contracts, & Other External Sources[3]	**0**	**0**	**0**	**0**	**0**
4. Other Sources	**0**	**0**	**0**	**0**	**0**
TOTAL (Add 1 - 4)	**130350**	**307258**	**460551**	**586500**	**660790**

[3] This rate includes the average UMBC tuition reduction of .27.

Appendix F. Expenditures Table

Expenditure Categories	(Year 1)	(Year 2)	(Year 3)	(Year 4)	(Year 5)
1. Total Faculty Expenses[4] (b + c below)	**18296**	**130790**	**155055**	**180667**	**207685**
a. # FTE	0.8	1.8	1.8	1.8	1.8
b. Total Salary	12258	95253	111815	129292	147724
c. Total Benefits	6038	35537	43240	51375	59961
2. Total Administrative Staff Expenses (b + c below)[5]	**27598**	**28701**	**29849**	**31044**	**32286**
a. # FTE	0.5	0.5	0.5	0.5	0.5
b. Total Salary	20750	21580	22443	23341	24275
c. Total Benefits	6848	7121	7406	7703	8011
3. Total Support Staff Expenses (b + c below)	**0**	**0**	**0**	**0**	**0**
a. # FTE	0	0	0	0	0
b. Total Salary	0	0	0	0	0
c. Total Benefits	0	0	0	0	0
4. Equipment[6]	**15000**	**15450**	**15914**	**16391**	**16883**
5. Library[7]	**3000**	**3180**	**3371**	**3573**	**3787**
6. New or Renovated Space	**0**	**0**	**0**	**0**	**0**
7. Other Expenses[8]	**63424**	**165432[9]**	**228166**	**297267**	**361888**
TOTAL (Add 1 - 7)	**127318**	**343553**	**432355**	**528942**	**622529**

[4] This number includes .8 faculty effort (four full-time, tenure-track education faculty who are involved in the implementation of the new degree at .20 salary and fringe). This number also includes the salary and benefits for a new tenure track faculty member with teaching and research expertise in Middle Grades STEM for years 2-5.

[5] This number represents the salary and benefits for a .5 FTE staff person to assist with the administration of the new degree program.

[6] This number includes costs for marketing, printing, computers, and instructional equipment.

[7] This number represents costs for library books and journals with a middle grades STEM focus.

[8] This number includes costs for part-time instructors to teach additional sections of 100-level lecture courses in the College of Arts, Humanities, and Social Sciences (CAHSS), the College of Engineering and Information Technology (COEIT), and the College of Natural and Mathematical Sciences (CNMS); as well as salaries for part-time instructors in Education.

[9] This number includes a start-up package of $20,000 for the new faculty member.

Appendix G – Alignment of Courses to Association of Middle Level Education (AMLE) Standards

Course Number and Title	Credits	AMLE Standards																
		1A	1B	1C	1D	2A	2B	2C	3A	3B	4A	4B	4C	4D	5A	5B	5C	5D
Education Major Requirements (41 Credits)																		
EDUC310 Inquiry into Education	3								X	X								
EDUC311 Psychological Foundations of Education	3	X																
EDUC388 Inclusion and Instruction	3		X							X	X	X	X	X				
EDUC410 Reading in the Content Area I	3			X							X	X	X	X				
EDUC411 Reading in the Content Area II	3			X							X	X	X	X	X	X	X	X
EDUC412M Introduction to Middle Level Teaching and Learning	3			X	X		X		X	X	X	X	X	X	X	X	X	X
EDUC430 Integrated STEM Content and Pedagogy	3					X	X	X										
EDUC431 Methods for Teaching STEM in the Middle Grades	3	X	X	X	X		X		X	X	X	X	X	X	X	X	X	
EDUC466 School, Family, and Community Partnerships for Middle Grades STEM Success	3			X	X				X	X		X		X			X	
EDUC454 Phase I Seminar	2	X	X	X	X						X	X	X	X	X	X	X	X
EDUC456 Phase II Internship	10	X	X	X	X						X	X	X	X	X	X	X	X
EDUC457 Phase II Seminar	2	X	X	X	X						X	X	X	X	X	X	X	X
STEM Content Requirements (57 credits)																		
Math 131 Mathematics for Elementary School Teachers I	4					X												
Math132 Mathematics for Elementary School Teachers II	4					X												
Math155 Applied Calculus	4					X		X										
Stat350 Statistics with Applications in the Biological Sciences	4					X		X										
Bio141 Foundations of Biology: Cells, Energy, and Organisms	4					X												
Bio142 Foundations of Biology: Ecology and Evolution	4					X												

Course Number and Title	Credits	AMLE Standards																
		1A	1B	1C	1D	2A	2B	2C	3A	3B	4A	4B	4C	4D	5A	5B	5C	5D
Bio300L Experimental Biology Laboratory	2					X												
Bio302 Molecular and General Genetics	4					X												
GES110 Physical Geography	3					X												
CMSC 104 - Problem Solving and Computer Programming	3					X												
CHEM101 Principles of Chemistry I	4					X												
CHEM102 Principles of Chemistry II**	4																	
CHEM102L Introductory Chemistry Lab I**	2																	
PHYS111 Basic Physics I	4					X												
PHYS112 Basic Physics II	4					X												
ENES101 Introduction to Engineering	3					X												

UNIVERSITY SYSTEM of MARYLAND

BOARD OF REGENTS

SUMMARY OF ITEM FOR ACTION, INFORMATION, OR DISCUSSION

TOPIC: Frostburg State University: Combined Bachelor of Science in Exercise and Sport Science/Master of Science in Athletic Training

COMMITTEE: Education Policy and Student Life

DATE OF COMMITTEE MEETING: Tuesday, January 15, 2019

SUMMARY: Frostburg State University (FSU) proposes a Combined Bachelor of Science in Exercise and Sport Science/Master of Science in Athletic Training (BS-EXSS/MSAT) Program in response to the Commission on Accreditation of Athletic Training Education (CAATE) mandate that "all athletic training education preparation programs must transition to a master's degree by 2022." The proposed BS-EXSS/MSAT Program is a five-year program that will allow students to complete the BS in Exercise and Sport Science (EXSS) degree in 3 years and the MS in Athletic Training degree within 2 years. The Combined BS-EXSS/MSAT program is designed within FSU's existing EXSS program and the proposed MSAT program being submitted simultaneously with this proposal. Students accepted into the combined program will enter as undergraduate EXSS majors. Upon meeting MSAT program requirements, students will matriculate into the MSAT program beginning the fall of the fourth year of study. Nine graduate credits will be applied to both the undergraduate BS in Exercise and Sport Science degree and the MS in Athletic Training degree.

The proposed BS-EXSS/MSAT program is in recognition of the societal responsibility to address the regional and statewide workforce needs. As proposed, the BS-EXSS/MSAT program will prepare future health care professionals in the field of Athletic Training, with the goal that they will live and work in the region and state providing high levels of Athletic Training services, particularly in secondary school within the school systems in the area. As the only four-year institution west of the Baltimore/Washington corridor, and one of three AT programs in the state, this proposed program will assure that students in the western Maryland region and within the state have access to a quality AT preparation program.

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 Education Policy and Student Life Committee recommend that the Board of Regents approve the proposal from Frostburg State University to offer the Combined Bachelor of Science in Exercise and Sport Science/Master of Science in Athletic Training.

COMMITTEE ACTION:		DATE: January 15, 2019
BOARD ACTION:		DATE:
SUBMITTED BY: Joann A. Boughman	301-445-1992	jboughman@usmd.edu

FROSTBURG STATE UNIVERSITY
One University. A World of Experiences.

OFFICE OF THE PROVOST
101 BRADDOCK ROAD
FROSTBURG, MD 21532-2303
T 301.687.4211
F 301.687.7960

December 3, 2018

Dr. Robert Caret
Chancellor
University System of Maryland
701 E. Pratt Street
Baltimore, MD 21202

Dear Chancellor Caret:

Attached please find the proposals for the creation of two new programs in Athletic Training at Frostburg State University (FSU): (l) a Master of Science in Athletic Training (MSAT) program, and (2) a Combined Bachelor of Science in Exercise and Sport Science/Master of Science in Athletic Training (BS-EXSS/MSAT) program.

In response to the Commission on Accreditation of Athletic Training Education (CAATE) mandate that "all athletic training education preparation programs must transition to a master's degree by 2022," FSU is proposing the MSAT program as a two-year rigorous post-baccalaureate entry graduate program to expand the skills and knowledge of future athletic trainers. Simultaneously, as part of the planned transition to master's level, FSU is proposing a combined BS-EXSS/MSAT program as a five-year accelerated program that will allow students to complete the BS degree in Exercise and Sport Science (EXSS) in three years and the MS degree in Athletic Training with an additional two years, to continue to serve undergraduate students who are seeking athletic training programs to meet the need for elevation of the degree set forth by the CAATE.

While responding to local, regional, national, and global challenges, the development of the MSAT and BS-EXSS/MSAT programs aligns with our institutional commitment to enhance health sciences, and to FSU's mission to expand its academic programming with a specific focus on preparing a changing student population for an era of complexity and globalization. Furthermore, as the only four-year institution west of the Baltimore/ Washington corridor, and one of only three AT programs in the state, FSU's proposed programs address the workforce needs of the region by preparing future health care professionals in the field of Athletic Training, with the goal that they will live and work in the region and state providing high levels of Athletic Training services, particularly in secondary schools within the school systems in the area. This is a key element in Frostburg's current strategic plan and is essential to the University's economic, educational, and professional development responsibilities to serve both state and regional workforce development needs.

We appreciate your support for this expansion within FSU's program offerings and the benefit it would have for the state. If you have any questions, please do not hesitate to contact me or our Associate Provost, Dr. Doris Santamaria-Makang, at dsantamariamakang@frostburg.edu.

Yours truly,

Dr. Elizabeth A. Throop
Provost and Vice President for Academic Affairs

pc: Dr. Antoinette Coleman, Associate Vice Chancellor for Academic Affairs-USM
Dr. Doris Santamaria-Makang, Associate Provost for Academic Affairs- FSU
Dr. Boyce Williams, Interim Dean, College of Education-FSU

UNIVERSITY SYSTEM OF MARYLAND INSTITUTION PROPOSAL FOR

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

Frostburg State University

Institution Submitting Proposal

Combined BS in Exercise and Sport Science/ MS in Athletic Training (BS- EXSS/M SAT) Program

Title of Proposed Program

Bachelor of Science in Exercise and Sport Science and Master of Science in Athletic Training

Award to be Offered

Fall 2019

Projected Implementation Date

83505

Proposed HEGIS Code

510913

Proposed CIP Code

Department of Kinesiology & Recreation

Department in which program will be located

Dr. Jackie Durst, Athletic Training Program Director

Department Contact

301.687.3228

Contact Phone Number

jrdurst@frostburg.edu

Contact E-Mail Address

Ronell Nowaczyk

Signature of President or Designee

11/26/18

Date

3

Frostburg State University
Department of Kinesiology and Recreation
New Program Proposal: Combined Bachelors of Science in Exercise and Sport Science/ Masters of Science in Athletic Training

A. Centrality to institutional mission statement and planning priorities:

1. Program Description and relationship to mission

The Commission on Accreditation of Athletic Training Education (CAATE) mandates all athletic training education preparation programs transition to a master's degree by 2022. In response to this requirement, FSU is seeking approval to begin a combined Bachelor of Science in Exercise and Sport Science/Master of Science in Athletic Training (BS EXXS/MSAT) program. FSU is also simultaneously proposing a Master of Science in Athletic Training degree program in response to this elevation of degree level mandate. Please see the accompanying MSAT proposal. The current Bachelor in Athletic Training (BSAT) program offered at FSU will be suspended upon approval of both the BS EXXS/MSAT and MSAT programs.

FSU's proposed BS EXXS/MSAT Program will be a five year accelerated program that will allow students to complete the BS in Exercise and Sport Science (EXSS) degree in 3 years to include summers and the Master of Science in Athletic Training degree with an additional 2 years. The combined BS EXXS/MSAT program is designed within FSU's existing undergraduate EXSS program and the proposed MSAT program being submitted simultaneously with this proposal. Students accepted into the combined program will enter as freshman or sophomores as Bachelor of Exercise and Sport Science majors. Upon completing all requirements of the bachelor's degree, students will be awarded a BS in Exercise and Sport Science after the summer of their third year of study. Additionally, upon meeting all admission requirements of the MSAT program, the student will be matriculated into the Master's program beginning the fall of the fourth year of study. The student will take 9 graduate credits while an undergraduate the summer prior to matriculation to the Master's program which will be applied to both the undergraduate BS in Exercise and Sport Science degree and the MS in Athletic Training degree.

Separately, the bachelor's degree in EXSS requires 120 credits and the MSAT will require 65 credits. The combined program will share 9 graduate credits therefore requiring a total of 176 credits, 9 credits less than if a student were to pursue a bachelor degree and master's degree outside of this combined program. The proposed MSAT program will be administered in the department of Kinesiology and Recreation, within the College of Education. If approved, this program will begin accepting students in the fall of 2019.

The proposed BS EXXS/MSAT program at FSU supports the institution's mission to address the workforce needs of the region by preparing future health care professionals in the field of Athletic Training, with the goal that they will live and work in the region and state providing high levels of Athletic Training services, particularly in secondary school systems. As the only four-year institution west of the Baltimore/Washington corridor and only one of three AT programs in the state, this proposed program at FSU will assure that students in the western Maryland region and within the state have access to a quality AT preparation program.

2. Explain how the proposed program supports the institution's strategic goals and provide evidence that affirms it is an institutional priority.

As part of the overall strategic plan of the institution to meet workforce demands, the university has focused in recent years on development of health science programs. Since 2010, FSU has initiated a Health Science major, RN to BSN program, and Master of Science in Nursing Program. Additionally, a new Physician Assistant program has received MHEC approval and will begin in summer 2019 pending accreditation approval. Transition to a professional education program at the graduate level will not only respond to the CAATE degree level requirements but will also better align the program with other health care profession programs at FSU (Professional Education in Athletic Training Report, 2013). Development of the Athletic Training program at the master's level in response to the accrediting body's requirements aligns with the institutional commitment to enhance health sciences and our strategic plan, specifically as it relates to the following institutional goals (https://www.frostburg.edu/strategic-planning/):

Goal I: Focus learning on both the acquisition and application of knowledge

B. Infuse applied learning throughout the FSU curriculum

Goal III: Expand regional outreach and engagement

B. Provide opportunities for student engagement to address community needs in the region

Goal V: Align university resources – human, fiscal, and physical with strategic priorities.

B. Ensure academic programs meet student and workforce expectations.

3. Adequate funding

The proposed BS EXXS/MSAT program will utilize the existing BS in Exercise and Sport Science degree and the MSAT program currently being proposed simultaneously with this program. The funding and resources for the MSAT program will be reallocated from the existing BS in AT program which will be suspended upon approval of the MSAT proposal approval. All funding required for this program exists within the current FSU budget allocated to the department of Kinesiology and Recreation. No new resources will be required to implement this degree program.

4. Institution's Commitment

Frostburg State University has offered an undergraduate Athletic Training program for over 14 years and the faculty, administrators, and staff remain committed to providing support for students enrolled within this new program. All support provided for the current BS in Athletic Training program including faculty, staff, operating budget and technical support will be reallocated to support the transition to providing a Master's degree level program and therefore the BS EXXS/MSAT program. The department of Kinesiology and Recreation which oversees the BS in EXSS degree program, have provided full support for this combined program and have submitted all required governance approvals to accept the shared 9 graduate credits for the BS in Exercise and Sport Science degree. The BS in Athletic Training program will be discontinued upon approval and implementation of this proposed program. This program has also gained approval from all internal governance committees.

B. Critical and compelling regional or Statewide need as identified in the State Plan

1. Demonstrate demand and need for the program

In order to meet present and future needs of the region and state, there is a need for a Master's degree in Athletic Training Program within the Western Maryland region based on the following:

a) The need for the advancement and evolution of knowledge.

The accrediting organization, CAATE, has mandated the advancement of Athletic Training professional education to the master's level. Beginning in 2022, the required professional degree for Athletic Trainers will be a Master's degree. FSU fulfills a unique role as the only comprehensive institution west of the Baltimore-Washington corridor which offers an Athletic Training program and as such the proposed BS/ MSAT program will be important for FSU's ability to meet the need for Athletic Trainers in the region as well as the degree level requirements of CAATE.

b. Societal needs, including expanding educational opportunities and choices for minority and educationally disadvantaged students at institutions of higher education.

During fall 2017, Frostburg State University served 43.7% undergraduate minority students and 13.4% graduate minority students (FSU, Office of Assessment and Institutional Research https://www.frostburg.edu/fsu/assets/File/Administration/pair/institutional-research/FastFact/FactSheetFSU2017.pdf). The new BS/ MSAT program will continue to serve this market and will attract minority students from within the region and state due to the limited number of similar programs, the affordability of Frostburg State University's tuition, and the convenience of an in-state, combined bachelor/master program option. Most importantly, the combined program will save all students time towards graduation and cost associated with the degree level change mandated by the accrediting body. This program will result in a bachelor and master's degree in five years with a cost savings associated with 9 shared credits between the two degrees.

c. The need to strengthen and expand the capacity of historically black institutions to provide high quality and unique educational programs. N/A

2. Evidence of perceived need consistent with the Maryland State Plan for Postsecondary Education

The Maryland Ready: 2017-21 Maryland State Plan for Postsecondary Education outlines the need for linking academic planning to financial planning as a cost saving measure for students. This proposed program would meet this goal as it will provide an opportunity for students to choose their major early and work to complete the bachelor's degree and master's in an accelerated format, resulting in lowering the number of credits from 185 to 176, and completion of both degrees in a five year period as opposed to a 6 year period in the traditional 4+2 program.

C. Quantifiable & reliable evidence and documentation of market supply & demand in the region and State.

1. Describe the potential industry or industries, employment opportunities and expected level of entry for graduates of the program

According to the National Athletic Trainer's Association's (NATA) membership database, the primary job settings for Athletic Trainers are colleges and universities (n=8,033), secondary

schools (n=7,681), and clinics (n=5,957), as self-reported by NATA members. An important finding reported in this data was the overall presence of ATs with master's degrees in all of the various fields of employment. Of the 14 fields reported, 11 indicated that more than 50% of those employed in the field were master's prepared. Within the setting of secondary schools, 55% of ATs held a master's degree in athletic training or a related field (National Athletic Trainers' Association Final Report, 2015).

Data analyzed and published from NATA, national athletic training jobs posting database from 2013-2014 examined whether there was current demand for master's level athletic trainers. The job postings were coded according to the type of position. For this analysis, occupational descriptions were collapsed into 10 categories. These categories and their frequencies are shown below:

NATA Jobs Posting Database for 2013-2014

Job Category	Count	% of Total
Athletic Trainer	1,928	52%
Graduate assistant	706	19%
Professor	252	7%
Internship	269	7%
AT-Clinical	174	5%
Head AT	136	4%
Director of AT/exercise science	62	2%
Sales and Marketing	76	2%
Other 0913	81	2%
Clinical coordinator	55	1%

Source: National Athletic Trainer's Association (NATA) Final Report. Article citation: Greenman II, G.D., Wilson, L.N., Smith, C.D., & Coryn, C.L.S. (2015). Investigation into the impact of a change in professional degree in athletic training: Final report. Kalamazoo, MI: Western Michigan University, Evaluation Center.

2. Present data and analysis projecting market demand and the availability of openings in a job market to be served by the new program

Nationally, there is a 23% projected job growth for athletic trainers from 2016-2026 (Bureau of Labor and Statistics), which is much faster than the average for all occupations (https://www.bls.gov/ooh/healthcare/athletic-trainers.htm#tab-6). The high demand for athletic trainers nationally will directly affect the region and the state. The table below outlines the projected need for and growth in athletic training occupations from 2016-2026 within the tristate region and surrounding areas served by FSU. BLS data was not available for the state of Maryland in relation to this occupation. Therefore, regional data has been presented.

Regional Athletic Training Long Term Occupation Projections from 2016-2026

State	Average Annual Openings	Projected Growth (%)
Maryland	Data not reported	Data not reported
Pennsylvania	120	19.7
West Virginia	10	22
District of Columbia	10	28.8
Ohio	90	17.3
Virginia	70	28.6

Data retrieved from: http://www.projectionscentral.com/Projections/LongTerm

3. Discuss and provide evidence of market surveys that clearly provide quantifiable and reliable data on the educational and training needs and the anticipated number of vacancies expected over the next 5 years.

In addition to market data supplied by BLS, data from a survey conducted by FSU in 2011 provided strong evidence that supports student interest and demand in the field of athletic training. This survey asked FSU first-year students what major they were interested in pursuing. Since 2011, there has been a steady increase in the number of students indicating an interest in the Athletic Training major: 67 [2011], 70 [2012], 84 [2013], 92 [2014], 107 [2015] (FSU's Office of Assessment and Institutional Research). The new proposed BS EXXS/MSAT program will provide an early entry pathway as freshman and sophomores to the Athletic Training program in the absence of an undergraduate major in Athletic Training which will be discontinued as a result of the need to elevate the degree to the master's level.

4. Provide data showing the current and projected supply of prospective graduates.

Currently, there are three AT programs offered in the state of Maryland. FSU and Towson currently offer Bachelor's programs which will be required to elevate the degree level to Master's by 2022. Salisbury University has already made this transition. Currently, no other program in Maryland offers the combined BS EXXS/MSAT program. While Salisbury University serves the eastern shore region of Maryland, Frostburg State University serves the western Maryland region. The table below identifies the number of students who graduated from an undergraduate AT program from FSU, Salisbury University, and Towson University from 2010-2016. Towson is a National Collegiate Athletic Association (NCAA) Division-I institution, located in a much more urban area of the state. FSU is a NCAA Division-III institution with different demographics than Towson, so the graduation cohorts at Towson are larger in comparison. Salisbury University is similar to FSU in that it also is a NCAA Division-III institution. Athletic training cohorts are more comparable between FSU and Salisbury University.

Maryland Higher Education Degree Trend Data from 2010-2016 with CIP Designation 51.0913 (Athletic Training)

Institution	Degree Level	CIP code	2010	2011	2012	2013	2014	2015	2016
Frostburg State University	BS	510913	5	11	7	10	13	5	10
Salisbury University	BS	510913	10	9	6	7	6	11	10
Towson University	BS	510913	10	20	13	15	17	11	21

Source: Maryland Higher Education Commission (http://data.mhec.state.md.us/mac_Trend.asp#trend)
Note: Salisbury began a Master of Science in Athletic Training Program in 2015 but degree trend data was not available. However, 8 students were enrolled in the program in 2017

Athletic Training programs are generally designed for smaller cohorts of students due to the need for hands on training, clinical site placement availability, and the level of clinical education supervision required by the accrediting agency. As one of only three institutions in the state offering an AT program, the need for FSU to continue offering this program is critical

to the state's ability to meet the occupational demand moving forward, particularly in the western Maryland region.

D. Reasonableness of program duplication

As stated previously, all AT programs will be required to transition to a Master's program by 2022. As one of three currently existing AT programs in the state, compliance with the accreditation requirements of degree elevation from a bachelor's to a master's program will assure students in the western Maryland region will continue to have access to an Athletic Training program as FSU is the only institution to offer this graduate program option in the western Maryland region. Additionally, using a BS EXXS/MSAT model will provide an opportunity for students to complete a master's degree with less time to degree and lower cost.

E. Relevance to high-demand programs at Historically Black Institutions (HBIs)

This program should not have any impact on Historically Black Institutions since Athletic Training Education Programs are not currently being offered in any of the State's HBIs.

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

HBIs in the state do not currently offer an AT program, Therefore, this proposal does not present any risk to the relevance and identity of HBIs. The new proposed BS EXXS/MSAT program would make a valuable contribution to the State of Maryland higher education programs by increasing access of this program for minority students.

G. Adequacy of curriculum design and delivery to related learning outcomes consistent with Regulation .10 of this chapter:

1. **Describe how the proposed program was established, and also describe the faculty who will oversee the program.**
   The Bachelor in Exercise and Sport Science /Master of Science in Athletic Training (BS EXXS/MSAT) program curriculum and admission criteria were developed by the faculty in the AT and the EXSS programs to align with the Committee for the Accreditation of Exercise Science (CoAES) standards for the undergraduate Exercise Science degree, the CAATE accreditation standards and learning outcomes for the MSAT degree, and the FSU Undergraduate and Graduate Learning Goals. The chair of the EXSS department and the AT Program Director will oversee the implementation of this program and the ongoing accreditation and assessment activities for the respective degrees.

2. Educational Objectives and Learning Outcomes

   Bachelor in Exercise and Sport Science Program Goals
   1. Develop critical thinking skills that will enable success in the student's professional career
   2. Recognize and interpret unsafe practices and educate participants in proper safety measures
   3. Develop assessments and programs used for physical fitness
   4. Develop fitness/wellness programs that are goal-oriented and meet the needs of various populations
   5. Prescribe appropriate interventions for individuals and groups across the lifespan
   6. Become certified as personal trainers and/or strength and conditioning coaches obtaining national certifications such as ACSM Exercise Physiologist, Personal Trainer, Group Exercise Instructor, and NSCA Certified Strength and Conditioning Coach

Bachelor of Exercise and Sport Science Learning Outcomes - Please refer to Appendix A for a crosswalk of Bachelor of Science in Exercise and Sport Science SLO with FSU undergraduate learning goals and key assessments

1. Demonstrate a sound foundational knowledge and understanding of biological principles and an advanced understanding of human anatomy and physiology as they relate to responses and adaptations to physical activity and exercise.
2. Plan, administer, and evaluate wellness, fitness, and nutritional programs, based in sport, clinical, industrial, and/or corporate environments.
3. Demonstrate requisite skills and abilities for meaningful employment in exercise science related areas or pursue graduate studies in an exercise science related area.
4. Demonstrate basic laboratory skills pertaining to assessments, laboratory methods, and clinical practices.
5. Advocate for physically active lifestyles as a means to improve quality of life and reduce the risk and prevalence of lifestyle related diseases.
6. Demonstrate knowledge of the importance and influence of physical activity, kinesiology, and nutrition, on health and wellness.
7. Demonstrate knowledge of the importance and influence of physical activity, kinesiology, and nutrition, on health and wellness.

Master of Science in Athletic Training

The MSAT program goals and learning outcomes have been developed to align with the mission of the Athletic Training program, CAATE accreditation standards and FSU Graduate Learning Goals.

Athletic Training Education Program Goals:

1) To facilitate the learning of the knowledge, skills, and attitudes required to adeptly practice athletic training.
2) To provide opportunities for the student to become competent in the entire 5th edition of the CAATE Athletic Training Educational Competency Matrix:
   a. Evidence-Based Practice (EBP)
   b. Prevention and Health Promotion (PHP)
   c. Clinical Integrated Proficiencies (CIP)
   d. Clinical Examination and Diagnosis (CE)
   e. Acute Care of Injury and Illness (AC)
   f. Therapeutic Interventions (TI)
   g. Psychosocial Strategies and Referral (PS)
   h. Healthcare Administration (HA)
   i. Professional Development and Responsibility (PD)
3) To provide opportunities for the student to become competent in the five domains of Athletic Training as determined by the Board of Certification Role Delineation Study:
   a. Injury/Illness Prevention and Wellness Protection
   b. Clinical Evaluation and Diagnosis
   c. Immediate and Emergency Care
   d. Treatment and Rehabilitation
   e. Organizational and Professional Health and Well-being
4) To challenge the student to develop critical thinking, problem solving, and decision-making skills.

5) To assist the student in recognizing and appreciating how athletic training scholarship, evidence based practice, and life-long learning supports the practice of athletic training.
6) To encourage student involvement in the profession via membership in university, state, district, and national athletic training organizations and related societies.
7) To encourage the development of professional and ethical behaviors expected of the athletic trainer as a health care professional.
8) To expose the student to a variety of clinical experiences that will prepare the student for future employment in sports medicine health care.
9) To help students understand the need to pursue future continuing educational opportunities after graduation through either graduate school or workshops and seminars.
10) To prepare the student for the Board of Certification National Athletic Training certification examination.

Student Learning Outcomes for MSAT Program – Please refer to Appendix B for a crosswalk of SLO with CAATE Competencies and FSU Graduate Learning Goals and Assessments

1. Integrate evidence-based practice standards when making clinical decisions and critically examine athletic training practice.
2. Synthesize how athletic training scholarship, evidence based practice, and life-long learning supports the practice of athletic training.
3. Combine and synthesize necessary skills within a complex healthcare system, including risk management, insurance, healthcare and reimbursement documentation, and facility management.
4. Develop strategies and programs to reduce the incidence of injuries, illnesses, and optimize patients' overall health and quality of life.
5. Compose and integrate therapeutic intervention programs using clinical outcome measures and treatment goals to optimize the patients' overall health and quality of life.
6. Compose and develop management strategies for patients with acute injuries and illnesses.
7. Collect and synthesize patients' display abnormal social, emotional, and mental behaviors, and then refer to other healthcare providers as necessary.
8. Integrate state and national government regulation in order to demonstrate moral and ethical judgement while practicing Athletic Training.
9. Theorize the importance of professional involvement, membership, and regulation among state, district, and national organizations
10. Integrate professional and ethical behaviors expected of the Athletic Trainer as a health care professional.

3. Program Assessment – please see Appendix A and B for crosswalk of SLO with key assessments.

The FSU's Academic Program Review process provides departments an opportunity to improve the quality of program offerings. The program review process occurs every **seven** years for each distinct undergraduate and graduate program and is mandated by the Board of Regents.

Procedure - Academic Program Review - Programs undergoing review in any given year must submit the following three documents to the Assessment and Institutional Research (AIR) by June 1st:

a) **Program Review Self - Study** - Internal document written by program representatives.
b) **External Review Report** - Internal document written by a contracted external reviewer.
c) **Certificate** - Two-page document to be approved by Academic Affairs and submitted to the USM Board of Regents
d) **Program review and Student Learning Assessment** - The program review schedule serves as the foundation for assessment initiatives through its identification of priorities for the coming cycle. Halfway through the cycle (at the 3.5 year mark), the office of Assessment and Institutional Research collects information on status of assessment activities using a midterm review template.

Additionally, will be required to seek accreditation via CAATE. See Specialized Accreditation information (#6) below.

4. Combined Bachelor of Science /Master of Science in Athletic Training Curriculum (See Appendix C for course descriptions)

SEMESTER COURSE SCHEDULE

First Year		
Fall Semester		
BIOL 149 (GEP Group C)	4	General Biology
ENGL 101 (GEP Core Skills)	3	Freshman Composition
MOI (GEP Group B)	3	_____
ORIE 101	1	Orientation
EXSS 103	3	Foundations of Exercise & Sport Science
Total	**14**	
Spring Semester		
Iden.& Diff (GEP Group F)	3	_____
IDIS 150 (GEP Group E)	3	_____
MATH 109 (GEP Core Skills)	3	Elements of Applied Probability and Statistics
MOI (GEP Group A)	3	_____
EXSS 175	1	Foundations of Resistance Training
PSYC 150 (GEP Group D)	3	General Psychology
Total	**16**	
Summer Semester		
EXSS 200	3	Nutrition (online)
xxx	3	EXSS program elective
Total	**6**	
Second Year		
Fall Semester		
BIOL 321	4	Anatomy & Physiology I
EXSS 115	3	Methods of Group Exercise Instruction
MOI (GEP Group C)	4	_____
IDIS 350 (GEP Group E)	3	_____
MOI (GEP Group D)	3	_____
Total	**17**	
Spring Semester		
BIOL 322	4	Anatomy & Physiology II
EXSS 303	3	Biomechanics for Exercise and Sports Science

EXSS 401	3	Physiology of Exercise
COSC 100	3	Technology Fluency
MOI (GEP Group B)	3	_____
Total	**16**	

Summer

xxx	4	EXSS program elective
xxx	4	EXSS program elective
Total	**8**	

Third Year 2021

Fall Semester

EXSS 315	3	Nutrition for the PA
EXSS 410	3	Advanced Strength Training
EXSS 482	3	Field Experience (*Grad School Applications*)
EXSS 411	3	Evaluation & Prescription
Xxx	4	EXSS program elective
Total	**16**	

Spring Semester

ENGL 300 (GEP Core Skills)	3	Business Writing (or any other upper level ENGL)
EXSS 492	3	Seminar in EXSS
EXSS 495	9	Internship in EXSS
Total	**15**	

***Students in the BS EXXS/MSAT Program who meet all requirements to provisionally enter the MSAT program by the end of the third year (spring) of study will be approved to move forward to take the following MSAT graduate courses in the summer prior to full matriculation to the MSAT program following successful completion of the undergraduate EXSS degree. The 9 credits identified below will be used to satisfy the undergraduate EXSS degree requirements as well. Students who do not meet the requirements of progression for matriculation to the MSAT program will be required to take EXSS courses to complete a degree is EXSS.**

Summer

EXSS 435	3	Lifespan Health & Fitness (online)
ATTR 645	3	Psychosocial Intervention (instead of *EXSS 341*)
ATTR 530	3	Athletic Training Administration (instead of *EXSS 306*)
ATTR 500	3	Foundations of Injury Management (*instead of EXSS 305*)
Total	**12**	

Upon successful completion of summer session above, students will have completed 120 credits hours and will be awarded a Bachelor in Exercise and Sport Science Degree. Nine graduate credits taken in the last summer will be applied to both the undergraduate degree and the graduate degree as part of this combined program.

MSAT Program Year 1

Fall Semester

ATTR 520	4	Rehabilitation Techniques in AT I (lab)
ATTR 505	4	Orthopedic Assessment I [Lower Body]
ATTR 600	3	Clinical Education I [Collegiate Athletics]
ATTR 515	3	Emergency Medical Techniques
Total	**14**	

Spring Semester

ATTR 510	4	Orthopedic Assessment II [Upper Body]
ATTR 605	3	Research Methods
ATTR 615	3	Clinical Education II [High School]
ATTR 635	4	Therapeutic Modalities in Athletic Training [Lab]
Total	**14**	

MSAT Year 2

Summer Semester		
ATTR 630	**3**	Clinical Education III [orthopedic and non-orthopedic medicine]
Fall Semester		
ATTR 620	4	Rehabilitation Techniques in AT II [Lab]
ATTR 625	3	General Medical Conditions
ATTR 660	3	Evidence Based Practice in AT
ATTR 655	3	Clinical Education IV [Collegiate Athletics]
Total	**13**	
Spring Semester		
ATTR 640	3	Capstone in Athletic Training [Online]
ATTR 650	4	Graduate Project/Research [Online]
ATTR 695	5	Clinical Education V [Immersive]
Total	**12**	

Total Graduate credits: 65

Total credits taken 176, 9 credits shared between the undergraduate EXSS degree and the MSAT degree.

Admission and Progress Requirements for the BS EXXS/MSAT Program

Admission Requirements for entry into the combined BS EXXS/MSAT program	Progression Requirements
Direct Entry to BS EXXS/MSAT as first year student - Admission Requirements • High school seniors who wish to be considered for Direct Entry (DE) into the BS EXXS/MSAT program must submit an undergraduate application to Frostburg State University by (*November 1*) and have a minimum *SAT-I composite score of 1250 before March 1*. Students must also complete the Personal Statement. Students who meet the requirements will be invited for individual interview. • Individual interviews and other activities will take place on Direct Entry Day. • Students who are selected for direct entry will be reserved a seat in the MSAT Program. Students will enter the MSAT Program after successful completion of degree requirements for BS in EXSS and meeting all requirements for entry into the MSAT program. Freshman and Sophomore Entry • FSU first year or sophomore EXSS students who wish to enter the BS EXXS/MSAT program must make application to the BS EXXS/MSAT program by March 1. Students must have a 3.0 at the time of application and a B or better in all MSAT prerequisite courses completed at the time of application. Students with less than a 3.0 can be considered for provisional admission but will be required to reach the 3.0 GPA by the end of the summer of the second year of study.	• Obtain a 3.0 or above by the end of the summer of the second year. • Maintain a 3.0 throughout the 3rd year. • Obtain a B grade or above in all MSAT prerequisite courses. • Meet all other admission requirements of the MSAT program by the end of the third year of study • Complete a minimum of 50 hours of athletic training clinical observation by the end of the third year of study (completed within EXSS 482: Field Experience) and receive a minimum of 80% on the preceptor evaluation.

• Students who meet the admission requirements will be invited for an interview. • Students admitted to the BS EXXS/MSAT program will be required to follow the study plan developed by the MSAT Program Director and will be required to meet all progression requirements to enter the MSAT program at the completion of their BS degree	

Admission Requirements to Matriculate to MSAT Program and Graduation Requirements of MSAT

Students who meet the following requirements while in the BS EXXS/MSAT program will be matriculated into the graduate program upon completion of the requirements of the BS in Exercise and Sport Science degree.

Admission Requirement for Matriculation into the MSAT	Graduation Requirement
• 3.0 GPA by the end of the spring semester of the 3rd year of study. • Successful completion of BS degree in EXSS from FSU with a 3.0 GPA or higher • Complete a minimum of 50 hours of athletic training clinical observation by the end of the third year of study (completed within EXSS 482: Field Experience) and receive a minimum of 80% on the preceptor evaluation. • Final approval from the AT Program Director • Complete the following required undergraduate courses or equivalent with a minimum of a "B" grade no later than the spring of the 3rd year of study: o Biomechanics for Exercise & Sport Science o Physiology of Exercise o Advanced Strength Training o Evaluation & Prescription in Fitness o Nutrition o Anatomy & Physiology I o Anatomy & Physiology II • Physical Examination/Medical History, HEP B vaccination, required immunizations, criminal background check	• Completion of all graduate coursework taken as an undergraduate with a minimum cumulative GPA of 3.0. • Completion of all courses with a grade of "B" or better in all MSAT prerequisite courses • Bachelor's degree award.

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5. General Education Requirements - All general education requirements will be met during the 3 years in which the student is pursuing the Bachelor of Science in Exercise and Sport Science degree. This will be met via a very specific and agreed upon study plan that the student and advisor will develop upon admission to the program (Please refer to the curriculum plan above). Students will be required to meet with their advisor each semester to assure that all requirements of the program for progression are being met including the GEP requirements for the EXSS degree.

6. **Specialized Accreditation**
   The proposed program will meet requirements of both the Committee for the Accreditation of Exercise Science (CoAES) which applies to the BS EXSS degree and the Commission on Accreditation of Athletic Training Education (CAATE) accrediting agency which applies to the MSAT degree. The proposed BS EXXS/MSAT program must first be granted approval from the institution and the State before requesting CAATE accreditation approval. The current undergraduate AT program is accredited but FSU will submit a letter of intent to CAATE and then complete the program self-study within 90 days to seek accreditation for this program.

7. **Contracting with another institution – N/A**

8. **Assurance students receive information**
   The proposed program will provide students with sufficient information regarding curriculum, cost, courses, degree requirements, financial aid, availability of student support services via a number of sources including but not limited to the Undergraduate and Graduate Catalog, university and program website, student handbook and any additional recruitment and orientation materials. FSU also complies with the Higher Education Opportunity Act of 2008 (HEOA) related to the disclosure requirements for postsecondary education institutions. The accreditation agency CAATE also mandates specific program information must be posted on the program's web site, such as admission criteria, program overview, additional program expenses, and BOC pass rates. Students admitted to the program will also be provided with an orientation to review all requirements and resources.

9. **Advertising, Recruiting, and Admitting** All program materials will clearly represent the proposed program and services available; such as handbooks, fliers, brochures and catalogs. The accreditation agency CAATE also mandates specific program information must be posted on the program's web site, such as admission criteria, program overview, additional program expenses, and BOC pass rates.

H. Adequacy of articulation – NA

I. Adequacy of faculty resources

1. Program Faculty

Students admitted into the BS EXXS/MSAT program will participate for the first three years in the currently existing Exercise and Sport Science (EXSS) major taught by existing faculty in this program. While an undergraduate, students who applied to and are admitted to the BS EXSS/MSAT program will take only 9 of graduate AT credits as an undergraduate EXSS major which will be shared between the bachelor and master's degree. These credits will be taken in the final summer semester of the student's Senior year (year 3). Athletic Training

faculty and staff who currently teach within the current bachelor's AT program, which will be discontinued, will be teaching the three graduate level courses required for the BS EXSS/MSAT program. Two of the faculty members have terminal degrees, while the other has master's degree preparation. All faculty members have years of experience teaching and practicing in the field of Athletic Training and have been involved in the development and redesign of program curriculum. Each faculty member has varied interests, outlooks and expertise so that the students have a variety of student learning experiences.

Athletic Training Faculty

Position	Name	Credentials	Academic Title	Employment Type	Courses Taught
Athletic Training Program Director	Jackie Durst	EdD, LAT, ATC	Assist. Prof	Full time tenure-track teaching on summer contract	ATTR 530
Coordinator of Clinical Education	Ramonica Scott	MS, LAT, ATC	Assist. Prof	Full time tenure-track teaching on summer contract	ATTR 645
Head Athletic Trainer	Karla Schoenly	MS, LAT, ATC	Instructor	Contractual adjunct for one course.	ATTR 500

2. Ongoing Pedagogy

The University offers free training sessions and professional development for all faculties in various areas of pedagogy via the Center for Teaching Excellence. Additionally, faculty are trained to use the LMS (Canvas) via the Office of Information Technology s as part of the onboarding process as well as are offered trainings throughout the year to provide updates and training for new technologies. To remain compliant with licensing regulations, all Athletic Training faculty must complete 50 continuing education units (CEUs) a year; 10 of those units must be evidence-based practice related. The Athletic Training Program budget allows for all Athletic Training faculty members to complete their required CEUs annually.

J. Adequacy of Library Resources

The institutional library resources meet the proposed program needs. The library resources available in the past for the undergraduate Exercise and Sport Science and Athletic Training (AT) program have been determined to adequately meet accreditation standards. The current library resources will also be utilized to meet the needs of the MSAT program. Below is a statement from Randall Lowe, the Kinesiology and Recreation Department's library liaison:

Current Library Holdings Overview

BS EXXS/MSAT students at FSU will have full access to the university's library and its print and online resources. The library's online search engine OneSearch allows students to access the library's collections of article databases, the library catalog, and e-books. Current library resources include over 8,000 discipline-related print and electronic monographs, as well as access to more than 6,000 health-sciences related full text online journals through research databases, which provide adequate subject coverage to support the program.

Resources specific to Exercise and Sport Science and Athletic Training students include full access to professional journals, such as the *Journal of Athletic Training* and the *Athletic Training Education Journal*, as well as 35 other sports medicine titles. In order to further meet graduate AT student needs, the FSU library provides full access to several databases relative to athletic training and the allied health care field, such as CINAHL, Health Source, LexisNexis Academic, MEDLINE/PubMed, Nursing & Allied Health Source, and Web of Science. Moreover, the Ort Library's interlibrary loan services extend access to the holdings of thousands of other libraries. Liberians are available to provide instruction and research support in using these resources.

K. Adequacy of physical facilities, infrastructure and instructional equipment

As previously described, the AT program is currently being offered at FSU as an undergraduate program, but due to accreditation standards must be elevated to graduate level. During the last accreditation site visit (by CAATE) two years ago, the examiners determined that the department facilities are more than adequate to support the undergraduate AT program. The proposed graduate program will be utilizing the same resources, supplies, and space as the current program.

The undergraduate athletic training program currently has lab space that is dedicated for the athletic training program. The lab is large enough for all AT students and is equipped with a SMART board with projector, and clinical supplies. The specific equipment used in the AT lab includes treatment and taping tables, skeleton models, CPR manikins, airway and intubation models, rectal thermometer models, emergency response equipment, taping and bracing equipment, clinical examination instruments, and rehabilitation and modality equipment. The proposed MSAT program anticipates utilizing the same equipment and lab space for continued didactic teaching and interactive learning.

Affiliate clinical education sites are also a vital resource for the athletic training program. Currently, the undergraduate AT program relies on health care professionals on campus and within the surrounding community to provide valuable hands-on clinical education experiences for the AT students. The proposed MSAT program anticipates continued partnerships with FSU Athletics and other current affiliate sites.

L. Adequacy of financial resources with documentation (as outlined in COMAR 13B.02.03.14)

The below budget reflects only the associated revenue and expenses generated by the 9 graduate credits which students in the BS EXSS/MSAT program will take as all other courses fall within the existing EXSS major. Students will be provisionally admitted to the BS EXSS/MSAT program but will be part of the exiting EXSS major until the summer of their third year of study. During this summer, as long as they meet all other requirements, students will take 9 graduate credits which will be part of their undergraduate EXSS degree requirements. Expenses and revenue generated from these three graduate courses (9credits) required as part of the undergraduate degree are reflected in this proposal. All other courses (56 credits) required after full matriculation to the MSAT program are reflected in the proposal for the MSAT being submitted simultaneously with this proposal.

There are no other new expenses or reallocated expenses for this BS EXSS/MSAT program since all students entering into the combined program will be part of the existing Bachelor's in Exercise and Sport Science major. All other reallocated expenses are reflected in the MSAT proposal being submitted simultaneously with this proposal. Therefore the budgets below

reflected only the revenue and expenses associated with delivering the 9 shared graduate credits.

TABLE 1: RESOURCES

	FY2021	FY2022	FY2023	FY2024	FY2025
Resource Categories	**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Year 5**
1. Reallocated Funds	8,910	8,910	8,910	8,910	8,910
2. Tuition/Fee Revenue	42,498	43,794	45,090	46,476	47,862
(c + g below)					
a. Number of F/T Students In-state	0	0	0	0	0
a. Number of F/T Students Out-of-state	0	0	0	0	0
b. Annual Tuition/Fee Rate In-state	0	0	0	0	0
b. Annual Tuition/Fee Rate Out-of-state	0	0	0	0	0
c. Total F/T Revenue (a x b)	0	0	0	0	0
d. Number of P/T Students In-State	9	9	9	9	9
d. Number of P/T Students Out-of-State	1	1	1	1	1
e. Credit Hour Rate In-State	459	473	487	502	517
e. Credit Hour Rate Out-of-State	591	609	627	646	665
f. Annual Credit Hours IS	81	81	81	81	81
f. Annual Credit Hours OS	9	9	9	9	9
g. Total P/T Revenue In State (90%)	37,179	38,313	39,447	40,662	41,877
h Total P/T Revenue OS (10%)	5,319	5,481	5,643	5,814	5,985
i. Total (d x e x f)	42,498	43,794	45,090	46,476	47,862
3. Grants, Contracts & Other External Sources	0	0	0	0	0
4. Other Sources (fees)	11,430	11,610	11,790	11,970	12,150
TOTAL (Add 1 – 4)	62,838	64,314	65,790	67,356	68,922

Budget Narrative:

1. Reallocated funds: This figure reflects the adjunct pay being reallocated from the existing AT Bachelor's degree program which will be discontinued as part of the transition to BS Exercise Science/MSAT. This figure reflects the adjunct faculty costs associated with teaching 9 graduate credit which students will take as an undergraduate in the summer prior to full matriculation into the MSAT program.
2. Tuition and fee revenue: this figure calculated using the graduate credit rates with a 3% increase annually. It is anticipated that 10 new students will be enrolled each summer in this program and will take 9 graduate credits during this time for a total of 90 graduate credits per year. Tuition was calculated using the # of credit hours (90) x the tuition rate each year with a 3% increase.
3. Grants/Contracts – N/A

4. Other Sources – This figure reflects fees associated with the 9 graduate credits or 90 total credits each year generated by the 10 student enrollments anticipated in the program. The fees are estimated to be 127 in FY2020 and increase by $2 each year.

TABLE 2: EXPENDITURES

	FY2021	FY2022	FY2023	FY2024	FY2025
Expenditure Categories	**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Year 5**
1. Faculty (b + c below)	8,910	8,910	8,910	8,910	8,910
a. # FTE	1.2	1.2	1.2	1.2	1.2
b. Total Salary	6,600	6,600	6,600	6,600	6,600
c. Total Benefits	2,310	2,310	2,310	2,310	2,310
2. Admin. Staff (b + c below)	0	0	0	0	0
a. # FTE	0	0	0	0	0
b. Total Salary	0	0	0	0	0
c. Total Benefits	0	0	0	0	0
3. Support Staff (b + c below)	0	0	0	0	0
a. # FTE	0	0	0	0	0
b. Total Salary	0	0	0	0	0
0	0	0	0	0	0
4. Equipment	0	0	0	0	0
5. Library	0	0	0	0	0
6. New or Renovated Space	0	0	0	0	0
7. Other Expenses	0	0	0	0	0
TOTAL (Add 1 – 7)	8,910	8,910	8,910	8,910	8,910

Narrative:

1. Faculty: The faculty figure reflects three adjunct salaries and benefit multiplier (.35) required to teach the 9 credits of graduate AT courses (3 courses) in the final undergraduate summer prior to final matriculation into the MSAT program. The factor of FTE above considers .4 per adjunct. .

M. Adequacy of provision for evaluation of program

On the institutional level, FSU's academic program review provides departments an opportunity to assess and improve the quality of program offerings. The program review process occurs every seven years for each distinct undergraduate and graduate program and is mandated by USM's Board of Regents.

The program review schedule serves as the foundation for assessment initiatives through its identification of priorities for the coming cycle. Halfway through the cycle, the Office of Assessment, and Institutional Research (AIR) collects information on the status of assessment activities using a midterm review template. Programs undergoing review in any given year must submit the Program Review Self-Study, External Review Report, and Certificate to AIR.

Additionally, all Athletic Training Education Programs are required to be accredited by the Commission on the Accreditation of Athletic Training Education (CAATE). The FSU Athletic Training Education Program (ATP) earned initial accreditation from the Commission on Accreditation of Allied Health Education Professions (CAAHEP) in September of 2004. The current accrediting agency, CAATE, assumed this role effective July 1, 2006. The current undergraduate Bachelor's in Athletic Training program is fully accredited by CAATE and completed a continuing accreditation site visit during both 2009 and 2014.

In January 2015, the CAATE granted FSU a ten-year extension on its accreditation based on its successful completion of a self-study and subsequent site visit. FSU will pursue accreditation of this new BS EXXS/MSAT program upon MHEC approval.

N. Consistency with the State's minority achievement goals

Frostburg State University is a public institution that is committed to a campus environment that values human diversity and respects individuals who represent minority populations. FSU is proud of our success in recruiting minority students to both the university and the current undergraduate AT program.

The current AT program has been successful in efforts to support minority students to gain access and admission to our undergraduate program as evidenced by the chart below, so there is no doubt that the same trend will be maintained for students who want to gain admission to the proposed BS EXXS/MSAT program.

Athletic Training Program Minority Student Enrollment Trends

Cohort Year	Cohort Number	Number of Minorities	% Minority
2016	10	4	40%
2017	9	5	56%
2018	9	3	33%

O. Relationship to low productivity programs identified by the Commission. N/A

P. Distance Education Program – N/A

Appendix A

Student Learning Outcomes: Crosswalk of BS EXSS Program Learning Outcomes with FSU Undergraduate Learning Goals, Curriculum and Key Assessments

BS EXSS Program Learning Outcomes The EXSS BS Program learning outcomes require that students:	**Frostburg State Undergraduate Learning Goals** The Frostburg State undergraduate student learning outcomes require that students:	Course Examples	Key Assessment for Overall Program
Demonstrate a sound foundational knowledge and understanding of biological principles and an advanced understanding of human anatomy and physiology as they relate to responses and adaptations to physical activity and exercise.	Liberal knowledge and skills of inquiry, critical thinking and synthesis: You will acquire knowledge in the humanities, the natural sciences, the social sciences, and the arts, which collectively embody the human cultural heritage. You will develop your abilities to practice higher-level critical thinking.	EXSS 401 EXSS 415 EXSS 405 EXSS 335 EXSS 330 EXSS 325 EXSS 300 EXSS 410 EXSS 411	Practice Exams ACSM/NSCA Exam Performance Scores
Plan, administer, and evaluate wellness, fitness, and nutritional programs, based in sport, clinical, industrial, and/or corporate environments.	Core skills: You will become proficient in reading, writing, speaking and listening. You will also develop quantitative literacy and technological fluency.	EXSS 103 EXSS 200 EXSS 175 EXSS 115 EXSS 341 EXSS 435 EXSS 430 EXSS 341 EXSS 410 EXSS 411	Practice Exams ACSM/NSCA Exam Performance Scores Preceptor Final Evaluation of Students Clinical Site Evaluation
Demonstrate requisite skills and abilities for meaningful employment in exercise science related areas or pursue graduate studies in an exercise science related area. Demonstrate basic laboratory skills pertaining to assessments, laboratory methods, and clinical practices.	Acquisition and application of specialized knowledge: You will gain knowledge and skills appropriate both for your field of study and to enter into the professional sector and/or graduate school.	EXSS 410 EXSS 411 EXSS 482 EXSS 305 EXSS 306	Practice Exams ACSM/NSCA Exam Performance Scores
Demonstrate requisite skills and abilities for meaningful employment in exercise science related areas or pursue graduate studies in an exercise science related area.	Values & social responsibility: You will critically explore, evaluate, and define your values and become a responsible citizen in a complex and changing society.	EXSS 492 EXSS 495	Practice Exams ACSM/NSCA Exam Performance Scores Future educational goals and objectives Senior Portfolio Senior Reflection/ Exit Interview
Advocate for physically active lifestyles as a means to improve quality of life and reduce the risk and prevalence of lifestyle related diseases.	Appreciation of cultural identities: You will gain insight into the ways cultural identities and experiences shape individual perspectives of the world and influence interactions with people from different backgrounds.	EXSS 303 EXSS 315	Preceptor Final Evaluation of Students

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Demonstrate knowledge of the importance and influence of physical activity, kinesiology, and nutrition, on health and wellness.			ACSM/NSCA student membership Senior Portfolio Senior Reflection/ Exit Interview

Appendix B

Delivery of Student Learning Outcomes: Crosswalk of Program Learning Outcomes with CAATE Competencies, FSU Graduate Learning Goals and Curriculum

MSAT Program Learning Outcomes The AT MS program learning outcomes require that students:	Frostburg State Graduate Learning Goals The Frostburg State graduate student learning outcomes require that students:	Course Examples & CAATE Athletic Training Educational Competencies	Key Assessment for Overall Program
Integrate evidence-based practice standards when making clinical decisions and critically examine athletic training practice. Synthesize how athletic training scholarship, evidence based practice, and life-long learning supports the practice of athletic training.	Access and evaluate the literature of the discipline Advancement of knowledge	ATTR 605 ATTR 530 ATTR 640 ATTR 700 ATTR 660 CAATE Competencies: EBP, CIP, PD	BOC Practice Exams Senior Presentations BOC Exam Performance Scores
Integrate evidence based practice standards when making clinical decisions and critically examine athletic training practice. Combine and synthesize necessary skills within a complex healthcare system, including risk management, insurance, healthcare and reimbursement documentation, and facility management. Develop strategies and programs to reduce the incidence of injuries, illnesses, and optimize patients' overall health and quality of life.	Write and speak about current issues Demonstrate knowledge in the discipline	ATTR 591 ATTR 510 ATTR 515 ATTR 520 ATTR 625 ATTR 620 ATTR 625 ATTR 530 ATTR 540 ATTR 615 ATTR 630 ATTR 655 ATTR 695 ATTR 640 CAATE Competencies: PHP, CIP, CE, AC, TI, PS, HA, PD	BOC Practice Exams Senior Presentations BOC Exam Performance Scores Clinical Education Competencies Graduate Exit Survey Alumni Survey Clinical Education Mid-term & Final Evaluations
Compose and integrate therapeutic intervention programs using clinical outcome measures and treatment goals to optimize the patients' overall health and quality of life. Integrate professional and ethical behaviors expected of the Athletic Trainer as a health care professional. Integrate state and national government regulation in order to demonstrate moral and ethical judgement while practicing Athletic Training. Synthesize how athletic training scholarship, evidence based practice, and life-long learning supports the practice of athletic training.	Identify and understand critical issues Challenge and evaluate information as well as Synthesize and integrate new knowledge	ATTR 530 ATTR 615 ATTR 630 ATTR 655 ATTR 640 ATTR 700 ATTR 660 CAATE Competencies: EBP, CIP, PD	BOC Practice Exams BOC Exam Performance Scores Senior Presentations
Integrate professional and ethical behaviors expected of the Athletic Trainer as a health care professional. Theorize the importance of professional involvement, membership, and regulation among state, district, and national organizations.	Understand and exhibit professional behaviors Understand the values and ethics of the practicing profession	ATTR 530 ATTR 615 ATTR 630 ATTR 655 ATTR 695 CAATE Competencies: PHP, CE, PD	Clinical Education Mid-terms & Final Evaluation Clinical Education Competencies

Develop strategies and programs to reduce the incidence of injuries, illnesses, and optimize patients' overall health and quality of life. Compose and integrate therapeutic intervention programs using clinical outcome measures and treatment goals to optimize the patients' overall health and quality of life.	Possess the ability to apply knowledge and solve sophisticated problems	ATTR 530 ATTR 615 ATTR 630 ATTR 655 ATTR 660 ATTR 695 ATTR 605 ATTR 530 CAATE Competencies: EBP, PHP, CE, AC, TI, PS, HA, PD	Clinical Education Competencies Clinical Education Mid-terms & Final Evaluation Senior Presentations

Appendix C

UNDERGRADUATE EXSS COURSE DESCRIPTIONS

EXSS 103- Foundations of Exercise & Sport Science (3 credits)
The study of both the history and philosophy of exercise and sport science. Emphasis placed on the sub-disciplines of athletic training and health/fitness. Variable.

EXSS 115- Methods of Group Exercise Instruction (3 credits)
Leadership and technical skills for a safe and effective group exercise programs. Variable.

EXSS 175 - Foundations of Resistance Training (1 credit)
An introduction to resistance training program design. Emphasis will be on proper exercise technique and functional progressions for a variety of body areas. Variable.

EXSS 200- Nutrition (3 credits)
Principles of nutrition. The effect of food habits on family health. Nutritional requirements for different stages of human development. Application to various economic levels and social backgrounds. Variable.

EXSS 303- Biomechanics for Exercise & Sport Science (3 credits)
The study related to the sciences of human movement. The knowledge and methods of mechanics are applied to the structure and function of the living human organism. Variable. Prerequisite: BIOL 321.

EXSS 305- Care & Prevention of Athletic Injuries (3 credits)
This course is designed to be a basic introduction into the field of Athletic Training. It is meant to give a health/fitness or coaching student their first exposure to this field. It is also intended to give students the knowledge necessary to give assistance to an injured student, athlete, and/or client. Emphasis is placed on musculoskeletal injuries that occur during exercise or athletic competition. Additionally, basic life support and first aid will be covered. Variable. MSAT shared credits with ATTR 500.

EXSS 306- Organization & Administration of Exercise & Sport Science (3 credits)
Effective administration and management strategies in Health and Fitness. Human resource management, financial management, facility design and planning, client management issues, and legal liability issues addressed. Emphasis on Health Fitness and Personal Training Management. Variable. MSAT shared credits with ATTR 530.

EXSS 315 - Nutrition for the Physically Active (3 credits)
Advanced study in the science and application of nutrition for both the general population as well as the physically active. Variable. Prerequisites: EXSS 200.

EXSS 401- Physiology of Exercise (3 credits)
Exercise and the circulatory, respiratory and nervous systems; efficiency of muscular work; fatigue; age, sex and body type. Variable. Prerequisite: BIOL 322.

EXSS 410- Advanced Strength Training (3 credits)
The study of the principles and practices of advanced strength training. Emphasis on the practical application of this knowledge to both athletic performance and a health / wellness setting. Variable. Prerequisite: EXSS 175 & 303.

EXSS 411- Evaluation & Prescription in Fitness (3 credits)
In depth examination of evaluation of and components applicable to the development of exercise programs. Variable. Prerequisite: EXSS 401.

EXSS 435- Lifespan Health and Fitness (3 credits)
An examination of factors that influence health and fitness across the lifespan including methods, services and resources to access and optimize the health and fitness of individuals and cohorts. Every semester. Variable.

EXSS 341- Psychology of Physical Activity (3 credits)
This course will introduce the multitude of concepts related to psychology and physical activity. Questions of how social psychological variables influence motor behavior and how physical activity affects the psychological make up of an individual will be explored. Throughout the semester we will adapt a theory-to-practice approach. Within the approach, emphasis will be placed on theoretical models and research findings, but also on the practical relevance of that information. Variable. Prerequisite: PSYCH 150. MSAT shared credits with ATTR 645.

EXSS 482- Field Experience in Seminar in Exercise & Sport Science (3 credit)
Field experience in exercise & sport science. Sites of study may vary. Variable.

EXSS 492- Seminar in Exercise & Sport Science (3 credits)
A separately graded component of the Exercise & Sport Science Internship, required in conjunction with EXSS 495. This course will address worksite issues encountered during the internship experience. Variable. Co-requisite: EXSS495.

EXSS 495- Internship in Seminar in Exercise & Sport Science (9 credits)
Special work experiences related to the exercise & sport science academic program. Full-time students must register for a minimum of 9 credit hours of internship. Graded P/F. Exercise and Sport Science Capstone. Every semester. Co-requisite EXSS 492. Prerequisites: EXSS 410 and EXSS 411; completion of all prerequisite major coursework with a C or better in all major courses; senior status; attendance at informational meeting in semester prior to internship; submission of application during semester prior to internship. You cannot receive credit for an EXSS course and the same course previously labeled PHEC or HEED.

Courses Required in Other Departments

BIOL 149- General Biology (4 credts)
Biological principles and concepts. The life processes, development and relationship among organisms. Three hrs. lecture, 2 hrs. lab. Every semester. GEP Group C.

BIOL 321 Anatomy & Physiology I (4 credits)
Structure and function of the human body. Includes its organization, the musculoskeletal system and the nervous system. Two hrs. lecture and two 2-hr. labs. Fall. Not open to students who have credit for former BIOL 201. Prerequisite: BIOL 149.

BIOL 322 Anatomy & Physiology II (4 credits)
Structure and function of the human body. Includes the endocrine, circulatory, respiratory, digestive, excretory, and reproductive systems, and human development. Two hrs. lecture and two 2-hr.

labs. Spring. Not open to students who have credit for former BIOL 202. Prerequisite: BIOL 321 or permission of instructor.

MATH 109 -Elements of Applied Probability and Statistics (3 credits)
For the non-math major; less rigorous than MATH 380. Elementary probability theory; collection, organization and analysis of data; descriptive statistics; the normal and binominal distributions; introduction to inferential statistics; and applications. Every semester. Prerequisite: a passing score on the Mathematics Placement test administered by the University or DVMT 095. MAY NOT BE USED TO SATISFY THE REQUIREMENTS FOR A MAJOR OR MINOR IN MATHEMATICS. MAY BE USED TO FULFILL CORE SKILL 3.

PSYC 150- General Psychology (3 credits)
Introduction to the methodology, theories, and applications of the science of animal and human behavior. Every semester. GEP Group D.

EXSS Electives- MSAT Students may choose 7 credits of electives from the following list:

CHEM 150- General, Organic, & Biochemistry (4 credits)
Survey of key chemistry concepts in general, organic and biochemistry for non-science majors. Two hrs. lecture, two hours recitation and one 2-hr. lab. Math Level 1 required. GEP Group C.

CHEM 201- General Chemistry I (4 credits)
Atomic and molecular structure, theories of covalent and ionic bonding, chemical reactions, states of matter, gas laws, solutions, reaction rates, stoichiometry, and thermochemistry. Two hrs. lecture, 2 hrs. discussion and one 2-hr. lab. Every semester. You cannot earn credit for both CHEM 101 and 201. Prerequisites: C or better in CHEM 103 or placement at Chemistry Level 2 or higher and Math Level II or higher. Corequisite: MATH 102/119 or permission of instructor. GEP Group C. Note: For information on Chemistry Level placement, see Department Chair.

CHEM 202 - General Chemistry II (4 credits)
Acid-base concepts, equilibria, thermodynamics, electrochemistry, reaction rates, coordination compounds, and organic, nuclear, and descriptive chemistry. Three hrs. lecture, one 3-hr. lab. Every semester. You cannot earn credit for both CHEM 102 and 202. Prerequisites: CHEM 201 and MATH 102/119.

EXSS 300- Advanced Human Nutrition
This course is an assessment of in-depth study of macro- and micro nutrition digestion, including absorption, metabolism, excretion, inter-relationships, and requirements in normal individuals; effects of processing and technological alterations on nutritional quality of food and the bioavailability of nutrients. Variable. Prerequisite: EXSS 200

EXSS 330 Exercise Epidemiology (3 credits)
This course is designed to provide understanding of how leisure-time physical activity can be effectively promoted to enhance people's longevity and quality of life. The course is designed for upper-level undergraduates who are being introduced to exercise epidemiology for the first time. Variable.

EXSS 430 Training for Peak Performance (3 credits)

The study of High-Performance Training Techniques in order to improve human performance measures. Emphasis is on functional movement patterns, corrective exercise, and improvements in athletic performance. Variable. Prerequisites: EXSS 303 and EXSS 401.

BUAD 100- Introduction to Business (3 credits)
Introduction to the internal and external environment of contemporary business and a survey of basic concepts, principles, and practices of business organizations. Basic business terminology and concepts for beginning students seeking an introduction to the business world or assistance in making career decisions. Variable.

MGMT 315- New Business Ventures (3 credits)
Examines the problems and challenges of creating and managing a small business. Emphasis on the development and implementation of a business idea, and the practical aspects of starting and managing a small business and its functional components: finance, accounting, management and marketing. Variable.

GRADUATE ATHLETIC TRAINING PROGRAM COURSE DESCRIPTIONS

ATTR 500- Foundations of Injury Management (3 credits)
This course is designed to be a basic introduction into injury management within the field of Athletic Training. It is meant to give students their first exposure to this field. It is also intended to give students the knowledge necessary to give assistance to an injured student, athlete, and/or client. Emphasis is placed on musculoskeletal injuries that occur during exercise or athletic competition. Additionally, professional rescuer CPR and first aid will be covered. Lecture. Summer MSAT only

ATTR 505 – Orthopedic Assessment I: Lower Extremity (4 credits)
General and specific athletic injury assessment procedures are covered. Emphasis is placed on the lumbar spine, pelvis, and lower extremity including on field/clinic evaluation processes, SOAP Note documentation and gait and posture analysis. 3 hrs lecture, 2 hrs lab. Fall MSAT only

ATTR 510 - Orthopedic Assessment II: Upper Extremity (4 credits)
General and specific athletic injury assessment procedures are covered. Emphasis is placed on the cervical spine, head/face, and upper extremity including on field/clinic evaluation processes and SOAP Note documentation. 3 hrs lecture, 2 hrs lab. Spring MSAT only

ATTR 515 - Emergency Medical Techniques (3 credits)
Knowledge and skills in the evaluation, immediate management and treatment of medical emergencies of acute injuries and illnesses are covered. Also the use of various equipment used in emergency medical management. Lecture. Fall MSAT only

ATTR 520 - Rehabilitation Exercise in Athletic Training I (4 credits)
Various aspects of the rehabilitation process for the injured patient. Goals, techniques, evaluation methods, and specific rehabilitation programs covered. 3 hrs lecture, 2 hrs lab. Fall MSAT only

ATTR 530 – Athletic Training Administration (3 credits)
Administration and management strategies in athletic training. Human resource management, financial management, facility design and planning, client management, and ethics and legal liability issues. Lecture. Summer MSAT only

ATTR 600- Athletic Training Practicum I (3 credits)

Provides the student in Athletic Training extensive exposure to the field. Focuses on the theoretical base of the field as well as introductory injury prevention, management concepts, and prophylactic taping and bracing within the collegiate athletic setting. Students will also be assigned to clinical education rotations under the direct supervision of a Preceptor and will be required to complete 200 clinical education hours within the collegiate athletics setting (maximum hours = 250). Practicum. Fall MSAT only

ATTR 605 - Research Methods (3 credits)
Research design and methods oriented to prepare students for performing effective and responsible graduate level research in any discipline of choice. It is primarily oriented towards beginning graduate students working on a M.S. degree in Athletic Training, but will provide the tools necessary for students in other disciplines to perform and communicate research effectively. This course will introduce research topics and the data collection and application of statistical methods used in Athletic Training and related research. The emphasis is oriented towards physiology research, but nearly the entire course applies to other areas of health science, sports science, and athletic training. Lecture. Spring MSAT only

ATTR 615 - Athletic Training Practicum II (3 credits)
Participation within the daily management of the athletic training clinical environment. It is designed to help students develop athletic training clinical skills in a professional manner and dress and act appropriately as an allied health care professional. Students will also be assigned to clinical education rotations under the direct supervision of a Preceptor and will be required to complete 200 clinical education hours within the secondary school setting (maximum hours = 250). Practicum. Spring MSAT only

ATTR 620 - Rehabilitation Exercise in Athletic Training II (4 credits)
Advanced study in the science and application of safe rehabilitative exercise techniques for both the general population as well the physically active. Hands on manual based techniques for patients will be the primary emphasis. Prerequisite: ATTR 520 [Rehabilitation Exercise in Athletic Training I]; 3 hrs lecture, 2 hrs lab. Fall MSAT only.

ATTR 625 - General Medical Conditions (3 credits)
Pathology and clinical information of various general medical conditions commonly seen in the physically active. Also includes information on pharmacological issues in Athletic Training. Lecture. Fall MSAT only

ATTR 630 - Athletic Training Practicum III (3 credits)
Continued in-depth study of both the theoretical and practical clinical aspects of athletic training. The student will learn to utilize many of the previously learned Athletic Training skills and knowledge's by integrating these into their clinical education and clinical experience. Students will also be assigned to clinical education rotations under the direct supervision of a Preceptor and will be required to complete 200 clinical education hours within orthopedic and non-orthopedic medical settings (maximum hours = 250). Practicum. Summer MSAT only

ATTR 635 - Therapeutic Modalities in Athletic Training (4 credits)
Study of both the theoretical basis and practical usage of various therapeutic modalities. Designed for individuals who routinely treat sports-related injuries. 3 hrs lecture, 2 hrs lab. Spring MSAT only

ATTR 640 - Seminar in Athletic Training (3 credits)
Designed to be the continued in-depth study of both the theoretical and clinical application of Athletic Training competencies and proficiencies. It is intended to be a course for the student to refine and

master competencies and proficiencies learned previously in other courses. Clinical Integrated Proficiencies will be utilized so that students can make the connection from the classroom to the clinic. The course is also intended to review pertinent information to become better prepared to take the BOC certification examination. Lecure. Spring online MSAT only

ATTR 645- Psychosocial Intervention (3 credits)
Provides a theoretically sound basis for the integration of psychosocial aspects related to athletic training. Lecture. Summer MSAT only

ATTR 655 – Athletic Training Practicum IV (3 credits)
The continued in-depth study of both the theoretical and practical clinical aspects of athletic training. The student will learn to utilize many of the previously learned Athletic Training skills and knowledge's by integrating these into their clinical education and clinical experience. Students will also be assigned to clinical education rotations under the direct supervision of a Preceptor and will be required to complete 200 clinical education hours within the collegiate setting. (maximum hours = 250). Practicum. Fall MSAT only

ATTR 660 – Evidence-Based Practice in Athletic Training (3 credits)
This course will examine scientific experimentation vs. anecdotal case description in Athletic Training. Student learns to systematically find, appraise, and use the most current and valid research findings as the basis for clinical decisions. Lecture. Fall MSAT only

ATTR 695 – Athletic Training Practicum V: Immersive Clinical Education Experience (5 credits)
Gives students the opportunity to utilize their classroom knowledge in a practical setting. This course will provide students with the opportunity to obtain direct experience involving specific Athletic Training issues. The location of the experience will be decided by the student (on or off-campus) under the direction of a Preceptor. Students must complete at least 300 clinical education hours at their designated clinical site. Emphasis is placed on the evaluation skills as defined by the clinical proficiencies delineated and published by the CAATE. (maximum hours = 350). Practicum. Spring MSAT only

ATTR 700 – Master's Athletic Training Research Paper/Project (1-6 credits)
Prepares student to conceptualize and conduct independent research. In this course, students will execute a project designed to expand the students' knowledge of athletic training by working with a mentor (students' choice). The student will devise a research topic related to a domain in athletic training and conduct a research study/project. Students will present the mentor with a research paper that is to be submitted at a state, district, or national conference for a poster or oral presentation. Lecture. Spring online MSAT only

University System of Maryland

BOARD OF REGENTS

SUMMARY OF ITEM FOR ACTION, INFORMATION, OR DISCUSSION

TOPIC: Frostburg State University: Master of Science in Athletic Training

COMMITTEE: Education Policy and Student Life

DATE OF COMMITTEE MEETING: Tuesday, January 15, 2019

SUMMARY: Frostburg State University (FSU) proposes to offer a Master of Science in Athletic Training (MSAT) Program in response to the Commission on Accreditation of Athletic Training Education (CAATE) mandate that "all athletic training education preparation programs must transition to a master's degree by 2022." The proposed FSU MSAT Program is a two-year, rigorous graduate program to expand the skills and knowledge of future athletic trainers.

This proposal is seeking approval to begin the program in fall 2019 but will delay matriculation of direct entry MSAT students to summer 2021. The need for early approval of this MSAT program is to accommodate a proposal being submitted simultaneously with this proposal for a combined BS-EXSS/MSAT program, which is planned to begin in fall 2019.

The proposed, new FSU MSAT program is in recognition of the societal responsibility to address the regional and statewide workforce needs. As proposed, the FSU MSAT program will prepare future health care professionals in the field of Athletic Training, with the goal that they will live and work in the region and state providing high levels of Athletic Training services, particularly in secondary school within the school systems in the area. As the only four-year institution west of the Baltimore/Washington corridor, and one of three AT programs in the state, this proposed program will assure that students in the western Maryland region and within the state have access to a quality AT preparation program.

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 Education Policy and Student Life Committee recommend that the Board of Regents approve the proposal from Frostburg State University to offer the Master of Science in Athletic Training.

COMMITTEE ACTION:		DATE: January 15, 2019
BOARD ACTION:		DATE:
SUBMITTED BY: Joann A. Boughman	301-445-1992	jboughman@usmd.edu

FROSTBURG STATE UNIVERSITY
One University. A World of Experiences.

OFFICE OF THE PROVOST
101 BRADDOCK ROAD
FROSTBURG, MD 21532-2303
T 301.687.4211
F 301.687.7960

December 3, 2018

Dr. Robert Caret
Chancellor
University System of Maryland
701 E. Pratt Street
Baltimore, MD 21202

Dear Chancellor Caret:

Attached please find the proposals for the creation of two new programs in Athletic Training at Frostburg State University (FSU): (l) a Master of Science in Athletic Training (MSAT) program, and (2) a Combined Bachelor of Science in Exercise and Sport Science/Master of Science in Athletic Training (BS-EXSS/MSAT) program.

In response to the Commission on Accreditation of Athletic Training Education (CAATE) mandate that "all athletic training education preparation programs must transition to a master's degree by 2022," FSU is proposing the MSAT program as a two-year rigorous post-baccalaureate entry graduate program to expand the skills and knowledge of future athletic trainers. Simultaneously, as part of the planned transition to master's level, FSU is proposing a combined BS-EXSS/MSAT program as a five-year accelerated program that will allow students to complete the BS degree in Exercise and Sport Science (EXSS) in three years and the MS degree in Athletic Training with an additional two years, to continue to serve undergraduate students who are seeking athletic training programs to meet the need for elevation of the degree set forth by the CAATE.

While responding to local, regional, national, and global challenges, the development of the MSAT and BS-EXSS/MSAT programs aligns with our institutional commitment to enhance health sciences, and to FSU's mission to expand its academic programming with a specific focus on preparing a changing student population for an era of complexity and globalization. Furthermore, as the only four-year institution west of the Baltimore/ Washington corridor, and one of only three AT programs in the state, FSU's proposed programs address the workforce needs of the region by preparing future health care professionals in the field of Athletic Training, with the goal that they will live and work in the region and state providing high levels of Athletic Training services, particularly in secondary schools within the school systems in the area. This is a key element in Frostburg's current strategic plan and is essential to the University's economic, educational, and professional development responsibilities to serve both state and regional workforce development needs.

We appreciate your support for this expansion within FSU's program offerings and the benefit it would have for the state. If you have any questions, please do not hesitate to contact me or our Associate Provost, Dr. Doris Santamaria-Makang, at dsantamariamakang@frostburg.edu.

Yours truly,
By-
Elizabeth A. Throop
Dr. Elizabeth A. Throop
Provost and Vice President for Academic Affairs

pc: Dr. Antoinette Coleman, Associate Vice Chancellor for Academic Affairs-USM
Dr. Doris Santamaria-Makang, Associate Provost for Academic Affairs-
F SU Dr. Boyce Williams, Interim Dean, College of Education-FSU

UNIVERSITY SYSTEM OF MARYLAND INSTITUTION PROPOSAL FOR

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

Frostburg State University

Institution Submitting Proposal

Masters of Science in Athletic Training (MSAT) Program

Title of Proposed Program

Master of Science in Athletic Training	Fall 2019
Award to be Offered	Projected Implementation Date
83505	510913
Proposed HEGIS Code	Proposed CIP Code
Department of Kinesiology & Recreation	**Dr. Jackie Durst, Athletic Training Program Director**
Department in which program will be located	Department Contact
301.687.3228	jrdurst@frostburg.edu
Contact Phone Number	Contact E-Mail Address
Signature of President or Designee	11/26/18
	Date

Frostburg State University
Department of Kinesiology and Recreation
New Program Proposal: Masters of Science in Athletic Training

A. Centrality to institutional mission statement and planning priorities:

1. Program Description and relationship to mission

Frostburg State University (FSU) is proposing a new Master of Science in Athletic Training (MSAT) program to be approved beginning fall 2019.

The Commission on Accreditation of Athletic Training Education (CAATE) mandates all athletic training education preparation programs transition to a master's degree by 2022. In response to this national accreditation mandate, FSU is proposing the MSAT Program as a two-year rigorous post baccalaureate entry graduate program to expand the skills and knowledge of future Athletic Trainers.

This proposal is seeking approval to begin the program in fall 2019 but will delay matriculation of direct entry MSAT students to summer 2021. The need for early approval of this MSAT program is to accommodate a proposal being submitted simultaneously with this proposal for a combined BS EXXS/MSAT program which is planned to begin in fall 2019. FSU will submit a request for the suspension of our current Bachelor in Science in Athletic Training program for fall 2019, upon approval of both the BS EXXS/MSAT program and MSAT program proposals.

As part of the planned transition to master's level, FSU is developing both a BS EXXS/MSAT combined program and a direct entry MSAT program. Student will enter the BS EXXS/MSAT program beginning fall 2019 (see accompanying proposal) and bachelor's prepared students entering the direct entry master's program will be matriculated for 2021. This graduated approach will allow FSU to continue to serve undergraduate students who are seeking AT programs during this national transition to new degree level as well as meet the need for elevation of the degree set forth by the CAATE.

The proposed MSAT Program will require 65 graduate credits spanning two years (24 months) of graduate study and will be administered in the department of Kinesiology and Recreation, within the College of Education.

The proposed MSAT Program at FSU supports the institution's mission to address the workforce needs of the region by preparing future health care professionals in the field of Athletic Training, with the goal that they will live and work in the region and state providing high levels of Athletic Training services, particularly in secondary school within the school systems in the area. As the only four-year institution west of the Baltimore/Washington corridor, and the only one of three AT programs in the state, this proposed program at FSU will assure that students in the western Maryland region and within the state have access to a quality AT preparation program.

2. Explain how the proposed program supports the institution's strategic goals and provide evidence that affirms it is an institutional priority.

As part of the overall strategic plan of the institution to meet workforce demands, the university has focused in recent years on development of health science programs. Since 2010, FSU has initiated a Health Science major, RN to BSN program, and Master of Science in Nursing Program. Additionally, a new Physician Assistant program has received MHEC approval and will begin in summer 2019 pending accreditation approval. Transition to a professional education program at the graduate level will not only respond to the CAATE degree level requirements but will also better align the program with other health care profession programs at FSU (Professional Education in Athletic Training Report, 2013). Development of the Athletic Training program at the master's level in response to the accrediting body's requirements aligns with the institutional commitment to enhance health sciences and our strategic plan, specifically as it relates to the following institutional goals (https://www.frostburg.edu/strategic-planning/):

Goal I: Focus learning on both the acquisition and application of knowledge

B. Infuse applied learning throughout the FSU curriculum

Goal III: Expand regional outreach and engagement

B. Provide opportunities for student engagement to address community needs in the region

Goal V: Align university resources – human, fiscal, and physical with strategic priorities.

B. Ensure academic programs meet student and workforce expectations.

3. Adequate funding

This proposal is being sought to increase the degree level of the currently existing Bachelor of Science in Athletic Training program to a Master of Science in Athletic Training in response to the accrediting body's (CAATE) new requirement of Master's degree by 2022. The budget which supports the BS program will be reallocated to support this new degree level. See section L for details.

4. Institution's Commitment

Frostburg State University has offered an accredited Athletic Training program for 14 years and the faculty, administrators, and staff remain committed to providing support for students enrolled within this new program. All support provided for the current BS in Athletic Training program including faculty, staff, operating budget and technical support will be reallocated to support this new degree level. The BSAT program will be discontinued upon approval and implementation of this proposed program. This proposal has also received all necessary internal governance approvals.

B. Critical and compelling regional or Statewide need as identified in the State Plan

1. Demonstrate demand and need for the program

In order to meet present and future needs of the region and state, there is a need for a Master's degree in Athletic Training Program within the Western Maryland region based on the following:

a) The need for the advancement and evolution of knowledge.

The accrediting organization, CAATE, has mandated the advancement of Athletic Training professional education to the master's level. This will require advanced knowledge and skills of students preparing to become a Certified Athletic Trainer. Beginning in 2022, the required professional degree for Athletic Trainers will be a Master's degree. FSU fulfills a unique role as the only comprehensive institution west of the Baltimore-Washington corridor which offers an Athletic Training program and as such the proposed MSAT program will be important for FSU's ability to meet the need for Athletic Trainers in the region as well as the degree level requirements of CAATE.

b. Societal needs, including expanding educational opportunities and choices for minority and educationally disadvantaged students at institutions of higher education.

During fall 2017, Frostburg State University served 43.7% undergraduate minority students and 13.4% graduate minority students (FSU, Office of Assessment and Institutional Research https://www.frostburg.edu/fsu/assets/File/Administration/pair/institutional-research/FastFact/FactSheetFSU2017.pdf). The new Master's in Athletic Training program will continue to serve this market and will attract minority students from within the region and state due to the limited number of similar programs, the affordability of Frostburg State University's tuition, and the convenience of an in-state, 2-year master's program option.

c. The need to strengthen and expand the capacity of historically black institutions to provide high quality and unique educational programs. N/A

2. **Evidence of perceived need consistent with the Maryland State Plan for Postsecondary Education**

The Maryland Ready: 2017-21 Maryland State Plan for Postsecondary Education outlines the need for access to affordable and quality postsecondary education for all Maryland residents. FSU is one of only three institutions, in Maryland, currently offering a program in Athletic Training. The requirement of the accrediting body to elevate the current BS degree in Athletic Training program to master's level is the impetus for this proposal. Approval for this MSAT program will allow FSU to comply with the new degree level requirement and therefore, assure continued access for Maryland residents to quality Athletic training preparation, particularly in the western most part of the state as this is the service region for FSU.

C. Quantifiable & reliable evidence and documentation of market supply & demand in the region and State.

1. Describe the potential industry or industries, employment opportunities and expected level of entry for graduates of the program

According to the National Athletic Trainer's Association's (NATA) membership database, the primary job settings for Athletic Trainers are colleges and universities (n=8,033), secondary schools (n=7,681), and clinics (n=5,957), as self-reported by NATA members. An important finding reported in this data was the overall presence of ATs with master's degrees in all of the various fields of employment. Of the 14 fields

reported, 11 indicated that more than 50% of those employed in the field were master's prepared. Within the setting of secondary schools, 55% of ATs held a master's degree in athletic training or a related field (National Athletic Trainers' Association Final Report, 2015).

Data analyzed and published from NATA, national athletic training jobs posting database from 2013-2014 examined whether there was current demand for master's level athletic trainers. The job postings were coded according to the type of position. For this analysis, occupational descriptions were collapsed into 10 categories. These categories and their frequencies are shown below:

NATA Jobs Posting Data base for 2013-2014

Job Category	Count	% of Total
Athletic Trainer	1,928	52%
Graduate assistant	706	19%
Professor	252	7%
Internship	269	7%
AT-Clinical	174	5%
Head AT	136	4%
Director of AT/exercise science	62	2%
Sales and Marketing	76	2%
Other	81	2%
Clinical coordinator	55	1%

Source: National Athletic Trainer's Association (NATA) Final Report. Article citation: Greenman II, G.D., Wilson, L.N., Smith, C.D., & Coryn, C.L.S. (2015). Investigation into the impact of a change in professional degree in athletic training: Final report. Kalamazoo, MI: Western Michigan University, Evaluation Center.

2. Present data and analysis projecting market demand and the availability of openings in a job market to be served by the new program

Nationally, there is a 22% projected job growth for athletic trainers from 2016-2026 (Bureau of Labor and Statistics), which is much faster than the average for all occupations (https://www.bls.gov/ooh/healthcare/athletic-trainers.htm#tab-6). The high demand for athletic trainers nationally will directly affect the region and the state. The table below outlines the projected need for and growth in athletic training occupations from 2016-2026 within the tristate region and surrounding areas served by FSU. BLS data was not available for the state of Maryland in relation to this occupation. Therefore, regional data has been presented.

Regional Athletic Training Occupation Projections from 2016-2026

State	Average Annual Openings	Projected Growth (%)
Maryland	Data not reported	Data not reported
Pennsylvania	120	19.7
West Virginia	10	22
District of Columbia	10	28.8
Ohio	90	17.3
Virginia	70	28.6

Data retrieved from: http://www.projectionscentral.com/Projections/LongTerm

3. Discuss and provide evidence of market surveys that clearly provide quantifiable and reliable data on the educational and training needs and the anticipated number of vacancies expected over the next 5 years.

   In addition to market data supplied by BLS, data from a survey conducted by FSU in 2011 provided strong evidence that supports student interest and demand in the field of athletic training. This survey asked FSU first-year students what major they were interested in pursuing. Since 2011, there has been a steady increase in the number of students indicating an interest in the Athletic Training major: 67 [2011], 70 [2012], 84 [2013], 92 [2014], 107 [2015] (FSU's Office of Assessment and Institutional Research). The new proposed graduate program anticipates this upward trend to continue as more students become aware of the employment opportunities in the athletic training profession.

4. Provide data showing the current and projected supply of prospective graduates.

   Currently, there are three AT programs offered in the state of Maryland. FSU and Towson currently offer Bachelor's programs which will be required to elevate the degree level to Master's by 2022. Salisbury University has already made this transition. While Salisbury University serves the eastern shore region of Maryland, Frostburg State University serves the western Maryland region. The table below identifies the number of students who graduated from an undergraduate AT program from FSU, Salisbury University, and Towson University from 2010-2016. Towson is a National Collegiate Athletic Association (NCAA) Division-I institution, located in a much more urban area of the state. FSU is a NCAA Division-III institution with different demographics than Towson, so the graduation cohorts at Towson are larger in comparison. Salisbury University is similar to FSU in that it also is a NCAA Division-III institution. Athletic training cohorts are more comparable between FSU and Salisbury University.

   Maryland Higher Education Degree Trend Data from 2010-2016

Institution	Degree Level	CIP code	2010	2011	2012	2013	2014	2015	2016
Frostburg State University	BS	510913	5	11	7	10	13	5	10
Salisbury University	BS	510913	10	9	6	7	6	11	10
Towson University	BS	510913	10	20	13	15	17	11	21

Source: Maryland Higher Education Commission
(http://data.mhec.state.md.us/mac_Trend.asp#trend)
Note: Salisbury began a Master of Science in Athletic Training Program in 2015 but degree trend data was not available. However, 8 students were enrolled in the program in 2017

Athletic Training programs are generally designed for smaller cohorts of students due to the need for hands on training, clinical site placement availability, and the level of clinical education supervision required by the accrediting agency. As one of only three institutions in the state offering an AT program, the need for FSU to continue offering

this program is critical to the state's ability to meet the occupational demand moving forward, particularly in the western Maryland region.

D. Reasonableness of program duplication

As stated previously, all AT programs will be required to transition to a Master's program by 2022. As one of three currently existing AT programs in the state, the transition from a Bachelor's to a Master's program will assure students in the western Maryland region will continue to have access to an Athletic Training program as FSU is the only institution to offer this graduate program option in the western Maryland region.

E. Relevance to high-demand programs at Historically Black Institutions (HBIs)

This program should not have any impact on Historically Black Institutions since Athletic Training Education Programs are not currently being offered in any of the State's HBIs.

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

HBIs in the state do not currently offer this program, so this proposal does not present any risk to the relevance and identity of HBIs. The new proposed MSAT program would make a valuable contribution to the State of Maryland higher education programs by increasing access of this program for minority students.

G. Adequacy of curriculum design and delivery to related learning outcomes consistent with Regulation .10 of this chapter:

1. The Master of Science in Athletic Training (MSAT) program curriculum and admission criteria were developed by the AT faculty to align with the CAATE accreditation standards and learning outcomes, and FSU Graduate Learning Goals. In order to comply with accreditation standards, the Master's degree requires 65 credits of graduate level coursework spanning a two-year period, including two summer semesters. The faculty within the currently existing undergraduate Athletic Training Program will be reallocated to the graduate Athletic Training Program. The AT faculty, under the leadership of the AT Program Director and Clinical Coordinator, will oversee the implementation of this transition and the ongoing accreditation and assessment activities.

2. Educational Objectives and Learning Outcomes

The MSAT program goals and learning outcomes have been developed to align with the mission of the Athletic Training program, CAATE accreditation standards and FSU Graduate Learning Goals.

Athletic Training Education Program Mission
The mission of the Master of Science in Athletic Training Program (MSAT) is to provide the highest quality of professional preparation and clinical education to promote the development of future athletic trainers. In so doing, the Athletic Training program will provide an environment conducive to learning, strive for academic excellence, and foster a spirit of professionalism. This program is structured to meet the standards set forth by the Commission on Accreditation of Athletic Training Education (CAATE).

Athletic Training Education Program Goals:

1) To facilitate the learning of the knowledge, skills, and attitudes required to adeptly practice athletic training.
2) To provide opportunities for the student to become competent in the entire 5th edition of the CAATE Athletic Training Educational Competency Matrix:
   a. Evidence-Based Practice (EBP)
   b. Prevention and Health Promotion (PHP)
   c. Clinical Integrated Proficiencies (CIP)
   d. Clinical Examination and Diagnosis (CE)
   e. Acute Care of Injury and Illness (AC)
   f. Therapeutic Interventions (TI)
   g. Psychosocial Strategies and Referral (PS)
   h. Healthcare Administration (HA)
   i. Professional Development and Responsibility (PD)
3) To provide opportunities for the student to become competent in the five domains of Athletic Training as determined by the Board of Certification Role Delineation Study:
   a. Injury/Illness Prevention and Wellness Protection
   b. Clinical Evaluation and Diagnosis
   c. Immediate and Emergency Care
   d. Treatment and Rehabilitation
   e. Organizational and Professional Health and Well-being
4) To challenge the student to develop critical thinking, problem solving, and decision-making skills.
5) To assist the student in recognizing and appreciating how athletic training scholarship, evidence-based practice, and life-long learning supports the practice of athletic training.
6) To encourage student involvement in the profession via membership in university, state, district, and national athletic training organizations and related societies.
7) To encourage the development of professional and ethical behaviors expected of the athletic trainer as a health care professional.
8) To expose the student to a variety of clinical experiences that will prepare the student for future employment in sports medicine health care.
9) To help students understand the need to pursue future continuing educational opportunities after graduation through either graduate school or workshops and seminars.
10) To prepare the student for the Board of Certification National Athletic Training certification examination.

Student Learning Outcomes – Please refer to Appendix A for a crosswalk of SLO with CAATE Competencies and FSU Graduate Learning Goals and Assessments

- Integrate evidence-based practice standards when making clinical decisions and critically examine athletic training practice.
- Synthesize how athletic training scholarship, evidence-based practice, and life-long learning supports the practice of athletic training.
- Combine and synthesize necessary skills within a complex healthcare system, including risk management, insurance, healthcare and reimbursement documentation, and facility management.

- Develop strategies and programs to reduce the incidence of injuries, illnesses, and optimize patients' overall health and quality of life.
- Compose and integrate therapeutic intervention programs using clinical outcome measures and treatment goals to optimize the patients' overall health and quality of life.
- Compose and develop management strategies for patients with acute injuries and illnesses.
- Collect and synthesize patients' display of abnormal social, emotional, and mental behaviors, and then refer to other healthcare providers as necessary.
- Integrate state and national government regulation in order to demonstrate moral and ethical judgement while practicing Athletic Training.
- Theorize the importance of professional involvement, membership, and regulation among state, district, and national organizations
- Integrate professional and ethical behaviors expected of the Athletic Trainer as a health care professional.

3. Program Assessment

The FSU's Academic Program Review process provides departments an opportunity to improve the quality of program offerings. The program review process occurs every **seven** years for each distinct undergraduate and graduate program and is mandated by the Board of Regents.

Procedure - Academic Program Review - Programs undergoing review in any given year must submit the following three documents to the Assessment and Institutional Research Office (AIR) by June 1st:

a) **Program Review Self - Study** - Internal document written by program representatives.

b) **External Review Report** - Internal document written by a contracted external reviewer.

c) **Certificate** - Two-page document to be approved by Academic Affairs and submitted to the USM Board of Regents

d) **Program review and Student Learning Assessment** - The program review schedule serves as the foundation for assessment initiatives through its identification of priorities for the coming cycle. Halfway through the cycle (at the 3.5-year mark), the office of Assessment and Institutional Research collects information on status of assessment activities using a midterm review template.

Additionally, FSU will be required to seek accreditation via CAATE. See Specialized Accreditation information (#6) below.

4. Master of Science in Athletic Training Curriculum (See Appendix B for course descriptions)

Graduate Course	Graduate Course Title	Credits
Summer I Semester		**9**
ATTR 500	Foundations of Injury Management	3
ATTR 530	Athletic Training Administration	3

ATTR 645	Psychosocial Intervention	3
Fall I Semester		**14**
ATTR 515	Emergency Medical Techniques	3
ATTR 520	Rehabilitation Exercise in Athletic Training I (lab)	4
ATTR 505	Orthopedic Assessment I (Lower Body) (lab)	4
ATTR 600	Athletic Training Practicum I [Collegiate Athletics]	3
Spring I Semester		**14**
ATTR 510	Orthopedic Assessment II (Upper Body) (lab)	4
ATTR 615	Athletic Training Practicum II [High School]	3
ATTR 635	Therapeutic Modalities in Athletic Training (Lab)	4
ATTR 605	Research Methods	3
Summer II Semester		**3**
ATTR 630	Athletic Training Practicum III [orthopedic and non-orthopedic medicine]	3
Fall II Semester		**13**
ATTR 620	Rehabilitation Exercise in Athletic Training II (Lab)	4
ATTR 625	General Medical Conditions	3
ATTR 655	Athletic Training Practicum IV [Collegiate Athletics]	3
ATTR 660	Evidence Based Practice in Athletic Training	3
Spring II Semester		**12**
ATTR 640	Capstone in Athletic Training [online]	3
ATTR 700	Master's Athletic Training Research Paper/Project [online]	1-6
ATTR 695	Athletic Training Practicum V: Immersive Clinical Education Experience (300 hrs.)	5
	Total Graduate credits	**65**

Admission & Graduation Requirements

Admission Requirement	Graduation Requirement
• Successful completion of a BS degree in EXSS or related field from a regionally accredited institution with a 3.0 GPA or higher AND • The following required undergraduate courses or equivalent with a minimum of a "B" grade: o Biomechanics for Exercise & Sport Science o Physiology of Exercise o Advanced Strength Training o Evaluation & Prescription in Fitness o Nutrition o Anatomy & Physiology I o Anatomy & Physiology II • Completion of Graduate Application and MSAT Application documents • Interview • Two recommendations, preferably academic or professional • Physical Examination/Medical History • Hepatitis B vaccination record • Copy of required immunization records • Proof of criminal background check	• Completion of all graduate coursework with a minimum cumulative GPA of 3.0. • Completion of all courses with a grade of "B" or better in all core MS AT courses

5. **General Education Requirements -** Not applicable within the Master's degree program.

6. **Specialized Accreditation**
The proposed program will require outside accreditation from the Commission on Accreditation of Athletic Training Education (CAATE) accrediting agency. The proposed MSAT program must first be granted approval from the institution and the State before requesting accreditation approval. The program must submit a letter of intent to CAATE and then complete the program self-study within 90 days.

7. **Contracting with another institution – N/A**

8. **Assurance students receive information**
The proposed program will provide students with sufficient information regarding curriculum, cost, courses, degree requirements, financial aid, availability of student support services via a number of sources including but not limited to the Graduate Catalog, university and program website, student handbook and any additional recruitment and orientation materials. FSU also complies with the Higher Education Opportunity Act of 2008 (HEOA) related to the disclosure requirements for postsecondary education institutions. The accreditation agency CAATE also mandates specific program information must be posted on the program's web site, such as admission criteria, program overview, additional program expenses, and BOC pass rates.

Students admitted to the program will also be provided with an orientation to review all requirements and resources.

9. **Advertising, Recruiting, and Admitting** All program materials will clearly represent the proposed program and services available; such as handbooks, fliers, brochures and catalogs. The accreditation agency CAATE also mandates specific program information must be posted on the program's web site, such as admission criteria, program overview, additional program expenses, and BOC pass rates.

H. Adequacy of articulation – NA

I. Adequacy of faculty resources

1. Program Faculty

Athletic Training faculty and staff who currently teach within the current undergraduate AT program will be reallocated to the MSAT Program. Three of the faculty members have terminal degrees, while the others have master's degree preparation. All faculty members have years of experience teaching and practicing in the field of Athletic Training, Strength and Conditioning, and Physical Therapy, and have been involved in the development and redesign of program curriculum. Each faculty member has varied interests, outlooks and expertise so that the students have a variety of student learning experiences.

Athletic Training Faculty

Position	Name	Credentials	Academic Title	Employment Type	Courses Taught
Athletic Training Program Director	Jackie Durst	EdD, LAT, ATC	Assist. Prof	Full time tenure track	ATTR 600, 505,510, 530, 640, 700, 660
Coordinator of Clinical Education	Ramonica Scott	MS, LAT, ATC	Assist. Prof	Full time tenure track	EXSS 482, 591, ATTR , 605, 615, 630, 645, 655, 695, 520, 635,
Faculty	Melody Kentrus	DPT	Assist. Prof	This faculty member is a full-time tenure track faculty currently assigned to the Exercise Science program. She teaches one course in the AT program.	ATTR 620
Head Athletic Trainer	Karla Schoenly	MS, LAT, ATC	Instructor	Contractual adjunct for one course.	ATTR 515, ATTR 500
Assistant Athletic Trainer	Cassie Donahue	MS, LAT, ATC	Instructor	Contractual adjunct for one course	ATTR 625

2. Ongoing Pedagogy

The University offers free training sessions and professional development for all faculties in various areas of pedagogy via the Center for Teaching Excellence.

Additionally, faculty are trained to use the LMS (Canvas) via the Office of Information Technology as part of the onboarding process as well as are offered trainings throughout the year to provide updates and training for new technologies. To remain compliant with licensing regulations, all Athletic Training faculty must complete 50 continuing education units (CEUs) a year; 10 of those units must be evidence-based practice related. The Athletic Training Program budget allows for all Athletic Training faculty members to complete their required CEUs annually.

J. Adequacy of Library Resources

The institutional library resources meet the proposed program needs. The library resources available in the past for the undergraduate Athletic Training (AT) program have been determined to adequately meet accreditation standards. The current library resources will also be utilized to meet the needs of the MSAT program. Below is a statement from Randall Lowe, the Kinesiology and Recreation Department's library liaison:

Current Library Holdings Overview

Athletic Training students at FSU have full access to the university's library and its print and online resources. The library's online search engine OneSearch allows students to access the library's collections of article databases, the library catalog, and e-books. Current library resources include over 8,000 discipline-related print and electronic monographs, as well as access to more than 6,000 health-sciences related full text online journals through research databases, which provide adequate subject coverage to support the program.

Resources specific to athletic training students include full access to professional journals, such as the *Journal of Athletic Training* and the *Athletic Training Education Journal*, as well as 35 other sports medicine titles. In order to further meet graduate AT student needs, the FSU library provides full access to several databases relative to athletic training and the allied health care field, such as CINAHL, Health Source, LexisNexis Academic, MEDLINE/PubMed, Nursing & Allied Health Source, and Web of Science. Moreover, the Ort Library's interlibrary loan services extend access to the holdings of thousands of other libraries. Liberians are available to provide instruction and research support in using these resources.

K. Adequacy of physical facilities, infrastructure and instructional equipment

As previously described, the AT program is currently being offered at FSU as an undergraduate program, but due to accreditation standards must be elevated to graduate level. During the last accreditation site visit (by CAATE) two years ago, the examiners determined that the department facilities are more than adequate to support the undergraduate AT program. The proposed graduate program will be utilizing the same resources, supplies, and space as the current program.

The undergraduate athletic training program currently has lab space that is dedicated for the athletic training program. The lab is large enough for all AT students and is equipped with a SMART board with projector, and clinical supplies. The specific equipment used in the AT lab includes treatment and taping tables, skeleton models, CPR manikins, airway and intubation models, rectal thermometer models, emergency response equipment, taping and bracing equipment, clinical examination instruments, and

rehabilitation and modality equipment. The proposed MSAT program anticipates utilizing the same equipment and lab space for continued didactic teaching and interactive learning.

Affiliate clinical education sites are also a vital resource for the athletic training program. Currently, the undergraduate AT program relies on health care professionals on campus and within the surrounding community to provide valuable hands-on clinical education experiences for the AT students. The proposed MSAT program anticipates continued partnerships with FSU Athletics and other current affiliate sites.

L. Adequacy of financial resources with documentation (as outlined in COMAR 13B.02.03.14)

The below budget reflects the revenue and expenses generated from the MSAT direct entry two-year program and the revenue and expenses associated with the last two years of enrollment for students in the BS EXXS/MSAT program who matriculate into the Master's program after receiving their undergraduate degree. This reflects the revenue and expenses generated from the master's /graduate level coursework (65) credits each student will be taking as either a direct entry to the master's level or the 56 graduate credits taken by the BS EXXS/MSAT students who enter the MSAT program after receiving their bachelor's degree. All expenses and revenue associated with the BS EXXS/MSAT students who take 9 graduate credits as part of the undergraduate degree are reflected in the BS EXXS/MSAT program proposal submitted simultaneously with this proposal.

This budget also assumes that the Bachelor in Athletic Training faculty and expenses will be reallocated to the new MSAT budget beginning FY 2021 to accommodate this proposal to elevate the degree from a bachelor's degree to a Master's degree level.

Resource Categories	**Year 1**	**Year 2**	**Year3**	**Year 4**	**Year 5**
1. Reallocated Funds	18,310	172,947	177,854	182,907	188,112
2. Tuition/Fee Revenue	10,811	239,879	456,406	509,736	530,891
a. Number of F/T Students In-state	0	0	0	0	0
a. Number of F/T Students Out-of-state	0	0	0	0	0
b. Annual Tuition/Fee Rate In-state	0	0	0	0	0
b. Annual Tuition/Fee Rate Out-of-state	0	0	0	0	0
c. Total F/T Revenue (a x b)	0	0	0	0	0
d. Number of P/T Students In-State	2	23	35	38	41
d. Number of P/T Students Out-of-State	0	2	4	4	4
e. Credit Hour Rate In-State	459	473	487	502	517
e. Credit Hour Rate Out-of-State	591	609	627	646	665
f. Annual Credit Hours	18	399	739	804	815
g. Total P/T Revenue In & Out-of-State	8,525	188,408	359,597	402,804	420,866
(d x e x f)	0	0	0	0	0
3. Grants, Contracts & Other External Sources	0	0	0	0	0

4. Other Sources (fees)	2,286	51,471	96,809	106,932	110,025
TOTAL (Add 1 – 4)	31,407	464,297	731,069	799,575	829,028

Resource Narrative:

Note: Tuition and fees totals were derived by using the total annual credit hours generated by enrollment in relation to the MSAT and BS EXSS/ MSAT enrollment multiplied by the graduate credit hour tuition/fee rates. The total credit hours generated each year are indicated in line (f) of the above budget. Enrollment and tuition are shown as PT students as graduate students are charged by credit hour vs. provided with a semester tuition rate. Students who successfully complete the BS EXSS who are provisionally admitted to the MSAT program will matriculate to the MSAT program. It is anticipated that BS EXXS/MSAT enrollment will generate 10 students per year. See below enrollment tables.

1. **Reallocated Funds**: All funds include the current Bachelor in Athletic Training faculty and program budget that will be reallocated from the Bachelor's degree to the MSAT degree. See expenditures table below for breakdown of reallocated funds.
2. **Annual Tuition and Fee**: This revenue is being generated using the following assumption:

   10 student each year will matriculate from the BS EXXS/MSAT combined program to the MSAT program beginning the fall of 2021(FY 2022). The number of direct entry students to the MSAT program is expected to be small as we anticipate students will choose the BS EXXS/MSAT option during this time of transition to a new degree level and it will continue to be the most attractive option.

   Enrollment projections for BSEXXS/MSAT students matriculating to MSAT and MSAT direct entry.

			FY 2020	**FY 2021**	**FY 2022**	**FY 2023**	**FY 2024**
BSEXXS/MSAT matriculating to MSAT				10	10		
					10	10	
						10	10
							10
Total Enrollment in MSAT coming from BSEXXS/MSAT			**0**	**10**	**20**	**20**	**20**
			FY 2020	**FY 2021**	**FY 2022**	**FY 2023**	**FY 2024**
MSAT direct entry			2	2	2		
				3	3	3	
					4	4	4
						5	5
Total MSAT direct entry only			2	5	9	12	9
Total from BS EXXS/MSAT and MSAT direct entry			**2**	**15**	**29**	**32**	**29**

Tuition and fees totals were derived by using the total annual credit hours generated by enrollment in relation to the annual credit hours generated each year by the different pipelines multiplied by the graduate credit hour tuition/fee rates. The total credit hours generated each year are indicated in line (f) of the above budget. Enrollment and tuition are shown as PT students as graduate students are charged by credit hour vs. provided with a semester tuition rate.

Annual Credit Hour Projections for students from BSEXXS/MSAT matriculating to MSAT and direct entry MSAT students

Credits		FY 2020	FY2021	FY2022	FY2023	FY2024
Cohort 1 MSAT		18	62	50	0	0
Cohort 1 BSMSAT		0	310	250	0	0
Cohort 2 MSAT		0	27	93	75	0
Cohort 2 BSMSAT		0	0	310	250	0
Cohort 3 MSAT		0	0	36	124	100
Cohort 3 BSMSAT		0	0	0	310	250
Cohort 4 MSAT		0	0	0	45	155
Cohort 4 BSMSAT		0	0	0	0	310
Cohort 5 MSAT		0	0	0	0	0
Cohort 5 BSMAT		0	0	0	0	0
Total Credits per semester cohort combined		18	399	739	804	815

3. **Other Sources**: this figure reflects the fees associated with the credit hours generated. Fees for FY 2020 are anticipated to be $127 per credit with a $2 increase each year. (Fee per Credit Hour x Credit Hours per semester).

TABLE 2: EXPENDITURES

	FY 2021	FY2022	FY 2023	FY 2024	FY 2025
Expenditure Categories	**Year 1**	**Year 2**	**Year3**	**Year 4**	**Year 5**
1. Faculty (b + c below)	8,910	163,547	168,454	173,507	178,712
a. # FTE	1.2	3.6	3.6	3.6	3.6
b. Total Salary	6,600	121,566	125,213	128,969	132,838
c. Total Benefits	2,310	42,548	43,825	45,139	46,493
2. Admin. Staff (b + c below)	0	0	0	0	0
a. # FTE	0	0	0	0	0
b. Total Salary	0	0	0	0	0
c. Total Benefits	0	0	0	0	0
3. Support Staff (b + c below)	0	0	0	0	0
a. # FTE	0	0	0	0	0
b. Total Salary	0	0	0	0	0
c. Total Benefits	0	0	0	0	0
4. Equipment	1,000	1,000	1,000	1,000	1,000
5. Library	0	0	0	0	0
6. New or Renovated Space	0	0	0	0	0

7. Other Expenses (travel, instructional supplies, misc.)	8,400	8,400	8,400	8,400	8,400
TOTAL (Add 1 – 7)	18,310	172,947	177,854	182,907	188,112

Expenditures Narrative:

1. Faculty: Year 1 reflects need to teach 9 graduate credits only using 3 adjunct faculty. Subsequent years includes 1.2 FTE adjunct faculty, 2.0 FTE AT faculty and .4 EXSS faculty. Benefit multiplier used is .35. This is a reallocated resource as these faculty currently teach in the Bachelor's in Athletic Training program and will be reallocated to this new MSAT program.
2. Administrative Staff: N/A
3. Support Staff: N/A
4. Equipment: $1,000 for repair and replacement of equipment is budgeted and will be reallocated from the current bachelor's program which will be transitioning to the MSAT.
5. Library: Current library resources are in place to support this program. No new funding is required.
6. New or Renovated Space N/A
7. Other Expenses : $8,400 will be reallocated from the Bachelor's program for this transition to MSAT. This will cover expense associated with faculty travel, instructional supplies, and other miscellaneous expenses ($1,000)

M. Adequacy of provision for evaluation of program

On the institutional level, FSU's academic program review provides departments an opportunity to assess and improve the quality of program offerings. The program review processss occurs every seven years for eachh distinct undergraduate and graduate program and is mandated by USM's Board of Regents.

The program review schedule serves as the foundation for assessment initiatives throughh its identification of priorities for the coming cycle. Halfway through the cycle, the Office of Assessment, and Institutional Research (AIR) collects information on the status of assessment activities using a mid-term review template. Programs undergoing review in any given year must submit the Program Review Self-Study, External Review Report, and Certificate to AIR.

Additionally, all Athletic Training Education Programs are required to be accredited by the Commission on the Accreditation of Athletic Training Education (CAATE). The FSU Athletic Training Education Program (ATP) earned initial accreditation from the Commission on Accreditation of Allied Health Education Professions (CAAHEP) in September of 2004. The current accrediting agency, CAATE, assumed this role effective July 1, 2006. The current undergraduate Bachelor's in Athletic Training program is fully accredited by CAATE and completed a continuing accreditation site visit during both 2009 and 2014.

In January 2015, the CAATE granted FSU a ten-year extension on its accreditation based on its successful completion of a self-study and subsequent site visit. FSU will pursue accreditation of this new BS EXXS/MSAT program upon MHEC approval.

N. Consistency with the State's minority achievement goals

Frostburg State University is a public institution that is committed to a campus environment that values human diversity and respects individuals who represent diversity. Many of the students who have applied to the undergraduate Athletic Training Program have been minorities. The table below compares the number of minority students who have been admitted to the program to the overall admitted student cohort. Because this new program is designed for students who will be admitted at the graduate level, students must meet the rigor of the academic requirements to gain admission. FSU Athletic Training graduate students will have access to on-campus disability support services. Faculty may provide online sessions and Podcasts/video through Canvas, face-to-face meetings, and phone assistance as needed that is individualized for each student.

The current AT program has been successful in efforts to support minority students to gain access and admission to our undergraduate program as evidenced by the chart below, so there is no doubt that the same trend will be maintained for students who want to gain admission to the proposed MSAT program.

Athletic Training Program Minority Student Ratios

Cohort Year	Cohort Number	Number of Minorities	% Minority
2016	10	4	40%
2017	9	5	56%
2018	9	3	33%

Admission criteria for the proposed MS Athletic Training Program are clearly defined in Section G. Admission will be granted without regard to gender, race, religion, or national origin. Most admission criteria are objective and/or quantifiable in nature (having a 3.0 GPA or a "B" or higher in all prerequisite courses, etc.). Admission criteria that are more subjective or qualitative in nature will be assessed using a standardized rubric to ensure that the same standards are being utilized with each prospective student.

O. Relationship to low productivity programs identified by the Commission. N/A

P. Distance Education Program – N/A

Appendix A

Crosswalk of Program Learning Outcomes with CAATE Competencies, FSU Graduate Learning Goals and Curriculum

MSAT Program Learning Outcomes The AT MS program learning outcomes require that students:	**Frostburg State Graduate Learning Goals**	**Course Examples & CAATE Athletic Training Educational Competencies**	**Key Assessment for Overall Program**
Integrate evidence-based practice standards when making clinical decisions and critically examine athletic training practice. Synthesize how athletic training scholarship, evidence-based practice, and life-long learning supports the practice of athletic training.	Access and evaluate the literature of the discipline Advancement of knowledge	ATTR 605 ATTR 530 ATTR 640 ATTR 700 ATTR 660 CAATE Competencies: EBP, CIP, PD	BOC Practice Exams Senior Presentations BOC Exam Performance Scores
Integrate evidence-based practice standards when making clinical decisions and critically examine athletic training practice. Combine and synthesize necessary skills within a complex healthcare system, including risk management, insurance, healthcare and reimbursement documentation, and facility management. Develop strategies and programs to reduce the incidence of injuries, illnesses, and optimize patients' overall health and quality of life.	Write and speak about current issues Demonstrate knowledge in the discipline	ATTR 591 ATTR 510 ATTR 515 ATTR 520 ATTR 625 ATTR 620 ATTR 625 ATTR 530 ATTR 540 ATTR 615 ATTR 630 ATTR 655 ATTR 695 ATTR 640 CAATE Competencies: PHP, CIP, CE, AC, TI, PS, HA, PD	BOC Practice Exams Senior Presentations BOC Exam Performance Scores Clinical Education Competencies Graduate Exit Survey Alumni Survey Clinical Education Mid-term & Final Evaluations
Compose and integrate therapeutic intervention programs using clinical outcome measures and treatment goals to optimize the patients' overall health and quality of life. Integrate professional and ethical behaviors expected of the Athletic Trainer as a health care professional. Integrate state and national government regulation in order to demonstrate moral and ethical judgement while practicing Athletic Training. Synthesize how athletic training scholarship, evidence-based practice, and life-long learning supports the practice of athletic training.	Identify and understand critical issues Challenge and evaluate information as well as Synthesize and integrate new knowledge	ATTR 530 ATTR 615 ATTR 630 ATTR 655 ATTR 640 ATTR 700 ATTR 660 CAATE Competencies: EBP, CIP, PD	BOC Practice Exams BOC Exam Performance Scores Senior Presentations
Integrate professional and ethical behaviors expected of the Athletic Trainer as a health care professional. Theorize the importance of professional involvement, membership, and regulation among state, district, and national organizations.	Understand and exhibit professional behaviors Understand the values and ethics of the practicing profession	ATTR 530 ATTR 615 ATTR 630 ATTR 655 ATTR 695 CAATE Competencies: PHP, CE, PD	Clinical Education Mid-terms & Final Evaluation Clinical Education Competencies
Develop strategies and programs to reduce the incidence of injuries, illnesses, and optimize patients' overall health and quality of life. Compose and integrate therapeutic intervention programs using clinical outcome measures and treatment goals to optimize the patients' overall health and quality of life.	Possess the ability to apply knowledge and solve sophisticated problems	ATTR 530 ATTR 615 ATTR 630 ATTR 655 ATTR 660 ATTR 695 ATTR 605 ATTR 530 CAATE Competencies: EBP, PHP, CE, AC, TI, PS, HA, PD	Clinical Education Competencies Clinical Education Mid-terms & Final Evaluation Senior Presentations

Appendix B

GRADUATE ATHLETIC TRAINING PROGRAM COURSE DESCRIPTIONS

ATTR 500- Foundations of Injury Management (3 credits)
This course is designed to be a basic introduction into injury management within the field of Athletic Training. It is meant to give students their first exposure to this field. It is also intended to give students the knowledge necessary to give assistance to an injured student, athlete, and/or client. Emphasis is placed on musculoskeletal injuries that occur during exercise or athletic competition. Additionally, professional rescuer CPR and first aid will be covered. Lecture. Summer. Students admitted into the BS EXXS/MSAT or MSAT only

ATTR 505 – Orthopedic Assessment I: Lower Extremity (4 credits)
General and specific athletic injury assessment procedures are covered. Emphasis is placed on the lumbar spine, pelvis, and lower extremity including on field/clinic evaluation processes, SOAP Note documentation and gait and posture analysis. 3 hrs. lecture, 2 hrs. lab. Fall MSAT only

ATTR 510 - Orthopedic Assessment II: Upper Extremity (4 credits)
General and specific athletic injury assessment procedures are covered. Emphasis is placed on the cervical spine, head/face, and upper extremity including on field/clinic evaluation processes and SOAP Note documentation. 3 hrs. lecture, 2 hrs. lab. Spring MSAT only

ATTR 515 - Emergency Medical Techniques (3 credits)
Knowledge and skills in the evaluation, immediate management and treatment of medical emergencies of acute injuries and illnesses are covered. Also, the use of various equipment used in emergency medical management. Lecture. Fall MSAT only

ATTR 520 - Rehabilitation Exercise in Athletic Training I (4 credits)
Various aspects of the rehabilitation process for the injured patient. Goals, techniques, evaluation methods, and specific rehabilitation programs covered. 3 hrs. lecture, 2 hrs. lab. Fall MSAT only

ATTR 530 – Athletic Training Administration (3 credits)
Administration and management strategies in athletic training. Human resource management, financial management, facility design and planning, client management, and ethics and legal liability issues. Lecture. Summer Students admitted into the BS EXXS/MSAT or MSAT only

ATTR 600- Athletic Training Practicum I (3 credits)
Provides the student in Athletic Training extensive exposure to the field. Focuses on the theoretical base of the field as well as introductory injury prevention, management concepts, and prophylactic taping and bracing within the collegiate athletic setting. Students will also be assigned to clinical education rotations under the direct supervision of a Preceptor and will be required to complete 200 clinical education hours within the collegiate athletics setting (maximum hours = 250). Practicum. Fall MSAT only

ATTR 605 - Research Methods (3 credits)
Research design and methods oriented to prepare students for performing effective and responsible graduate level research in any discipline of choice. It is primarily oriented towards

beginning graduate students working on a M.S. degree in Athletic Training but will provide the tools necessary for students in other disciplines to perform and communicate research effectively. This course will introduce research topics and the data collection and application of statistical methods used in Athletic Training and related research. The emphasis is oriented towards physiology research, but nearly the entire course applies to other areas of health science, sports science, and athletic training. Lecture. Spring MSAT only

ATTR 615 - Athletic Training Practicum II (3 credits)
Participation within the daily management of the athletic training clinical environment. It is designed to help students develop athletic training clinical skills in a professional manner and dress and act appropriately as an allied health care professional. Students will also be assigned to clinical education rotations under the direct supervision of a Preceptor and will be required to complete 200 clinical education hours within the secondary school setting (maximum hours = 250). Practicum. Spring MSAT only

ATTR 620 - Rehabilitation Exercise in Athletic Training II (4 credits)
Advanced study in the science and application of safe rehabilitative exercise techniques for both the general population as well the physically active. Hands on manual based techniques for patients will be the primary emphasis. Prerequisite: ATTR 520 [Rehabilitation Exercise in Athletic Training I]; 3 hrs. lecture, 2 hrs. lab. Fall MSAT only.

ATTR 625 - General Medical Conditions (3 credits)
Pathology and clinical information of various general medical conditions commonly seen in the physically active. Also includes information on pharmacological issues in Athletic Training. Lecture. Fall MSAT only

ATTR 630 - Athletic Training Practicum III (3 credits)
Continued in-depth study of both the theoretical and practical clinical aspects of athletic training. The student will learn to utilize many of the previously learned Athletic Training skills and knowledge's by integrating these into their clinical education and clinical experience. Students will also be assigned to clinical education rotations under the direct supervision of a Preceptor and will be required to complete 200 clinical education hours within orthopedic and non-orthopedic medical settings (maximum hours = 250). Practicum. Summer MSAT only

ATTR 635 - Therapeutic Modalities in Athletic Training (4 credits)
Study of both the theoretical basis and practical usage of various therapeutic modalities. Designed for individuals who routinely treat sports-related injuries. 3 hrs. lecture, 2 hrs. lab. Spring MSAT only

ATTR 640 - Seminar in Athletic Training (3 credits)
Designed to be the continued in-depth study of both the theoretical and clinical application of Athletic Training competencies and proficiencies. It is intended to be a course for the student to refine and master competencies and proficiencies learned previously in other courses. Clinical Integrated Proficiencies will be utilized so that students can make the connection from the classroom to the clinic. The course is also intended to review pertinent information to become better prepared to take the BOC certification examination. Lecture. Spring online MSAT only

ATTR 645- Psychosocial Intervention (3 credits)
Provides a theoretically sound basis for the integration of psychosocial aspects related to athletic training. Lecture. Summer Students admitted into the BS EXXS/MSAT or MSAT only

ATTR 655 - Athletic Training Practicum IV (3 credits)
The continued in-depth study of both the theoretical and practical clinical aspects of athletic training. The student will learn to utilize many of the previously learned Athletic Training skills and knowledge's by integrating these into their clinical education and clinical experience. Students will also be assigned to clinical education rotations under the direct supervision of a Preceptor and will be required to complete 200 clinical education hours within the collegiate setting. (maximum hours = 250). Practicum. Fall MSAT only

ATTR 660 – Evidence-Based Practice in Athletic Training (3 credits)
This course will examine scientific experimentation vs. anecdotal case description in Athletic Training. Student learns to systematically find, appraise, and use the most current and valid research findings as the basis for clinical decisions. Lecture. Fall MSAT only

ATTR 695 - Athletic Training Practicum V: Immersive Clinical Education Experience (5 credits)
Gives students the opportunity to utilize their classroom knowledge in a practical setting. This course will provide students with the opportunity to obtain direct experience involving specific Athletic Training issues. The location of the experience will be decided by the student (on or off-campus) under the direction of a Preceptor. Students must complete at least 300 clinical education hours at their designated clinical site. Emphasis is placed on the evaluation skills as defined by the clinical proficiencies delineated and published by the CAATE. (maximum hours = 350). Practicum. Spring MSAT only

ATTR 700 – Master's Athletic Training Research Paper/Project (1-6 credits)
Prepares student to conceptualize and conduct independent research. In this course, students will execute a project designed to expand the students' knowledge of athletic training by working with a mentor (students' choice). The student will devise a research topic related to a domain in athletic training and conduct a research study/project. Students will present the mentor with a research paper that is to be submitted at a state, district, or national conference for a poster or oral presentation. Thesis/Project. Spring online MSAT only

UNIVERSITY SYSTEM of MARYLAND

BOARD OF REGENTS

SUMMARY OF ITEM FOR ACTION, INFORMATION, OR DISCUSSION

TOPIC: Towson University: Master of Education in Gifted and Creative Education

COMMITTEE: Education Policy and Student Life

DATE OF COMMITTEE MEETING: Tuesday, January 15, 2019

SUMMARY: Towson University proposes to offer a Master of Education in Gifted and Creative Education to meet the needs of Maryland teachers for excellent and affordable classes focused on helping to develop the talents of bright children. Not currently offered at any other USM institution, Towson's Master of Education in Gifted and Creative Education would place a special emphasis on developing the talents, creativity, and problem-solving skills of traditionally unrepresented groups. Disparities in access to gifted programming exist—per National Center for Education Statistics (NCES) data for Maryland, about 16% of children overall are identified as gifted, but only 7% of black students are. Similarly, 44% of Howard County children are identified as gifted, while fewer than 3% of those educated in Baltimore City are. All 76 Howard County public schools offer gifted programming, while only 28 of 177 Baltimore City public schools do so.

Towson's program would aid current teachers of gifted and creative children, parents of gifted children, and school districts in assisting children from all grade levels, backgrounds, and subject areas to develop their creative potential and better express their creativity across a broad array of subjects in a nearly infinite variety of ways. Upon completion of the program, graduates with a current Maryland teaching certificate will receive a notation on their transcripts indicating they meet the requirements for a Gifted and Talented Education Specialist endorsement on their pre-existing Maryland teaching certificate.

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 Education Policy and Student Life Committee recommend that the Board of Regents approve the proposal from Towson University to offer the Master of Education in Gifted and Creative Education.

COMMITTEE ACTION:		DATE: January 15, 2019
BOARD ACTION:		DATE:
SUBMITTED BY: Joann A. Boughman	301-445-1992	jboughman@usmd.edu

November 14, 2018

Robert L. Caret, PhD.
Chancellor
University System of Maryland
3300 Metzerott Road
Adelphi, MD 20783-1690

David A. Vanko, Ph.D.
Interim Provost and
Executive Vice-President for
Academic Affairs

Office of the Provost

Towson University
8000 York Road
Towson, MD 21252-0001

t. 410 704-2125
f. 410 704 3129

Dear Chancellor Caret:

Please find enclosed a proposal to offer a new program at Towson University, the **Master of Education in Gifted and Creative Education.**

Due to the requirements of Maryland's "Every Student Succeeds Plan", which requires the annual assessment of gifted children, and the demand for teachers trained in working with gifted students, Towson University proposes a **Master of Education in Gifted and Creative Education**. The program will provide Maryland teachers with the knowledge to develop gifted children's talents, especially those historically underrepresented in gifted education programs.

We respectfully request the Board's consideration of this proposal.

Sincerely,

DAVanko

David A. Vanko, Ph.D.
Interim Provost and Executive Vice President
for Academic Affairs

DAV/maw

cc: Dr. Antoinette Coleman, Associate Vice Chancellor for Academic Affairs, USM
Dr. Janet DeLany, Dean of Graduate Studies
Dr. Westley Forsythe, Director, Accreditation and Compliance Services
Dr. Laurie Mullen, Dean, College of Education
Dr. Laila Richman, Assistant Dean, College of Education

UNIVERSITY SYSTEM OF MARYLAND INSTITUTION PROPOSAL FOR

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

TOWSON UNIVERSITY
Institution Submitting Proposal

Gifted and Creative Education
Title of Proposed Program

Master of Education	**Fall 2019**
Award to be Offered	Projected Implementation Date
0811-00	**13.1004**
Proposed HEGIS Code	Proposed CIP Code
Early Childhood Education	**Dr. Laila Richman**
Department in which program will be located	Department Contact
410-704-3892	**LRICHMAN@towson.edu**
Contact Phone Number	Contact E-Mail Address
	11/26/2018
Signature of President or Designee	Date

3

Executive Summary

Towson University proposes an M.Ed. program in gifted and creative education with a special focus on critical- and creative-problem solving and thinking skills, which would also earn students who already possess a valid Maryland teaching credential who successfully complete the program a statement on their transcript that he or she has completed a Maryland-approved program that fulfills the requirements for a Gifted & Talented Education Specialist endorsement on that pre-existing Maryland teaching certificate. This would be a program that would be housed in the Department of Early Childhood Education but use resources from across the College of Education and other colleges and departments at Towson University. This program, which is not offered by another University System of Maryland or state-funded institution, is envisioned as helping to meet the needs of Maryland teachers for excellent and affordable classes focused on developing the talents of bright children, especially those in groups historically underrepresented in gifted education programs, whose talents are often misunderstood. The “excellence gap” is especially troubling, as fewer black and Hispanic children score at “advanced” levels on achievement tests as compared to their white and Asian peers—this excellence gap is caused, in part, by the lack of gifted and creative coursework available to Maryland teachers. As Maryland’s new Every Student Succeeds Plan requires tracking annual yearly progress of gifted children for the first time, the interest in gifted education should grow. This program would be especially attractive to educators as all of the core coursework could be completed either on campus or, were there interest from school districts, as part of closed cohorts. A special emphasis of the program of study would be the developing talents, creativity, and problem-solving skills of all children and their families, including those from traditionally underrepresented groups.

A. Centrality to institutional mission statement and planning priorities

In 1866, Towson University was established by the Maryland General Assembly for the training and certification of teachers in the State's public schools. Since that time, Towson University has served that role with pride and honor, with over a quarter of Maryland's teaching force holding a degree or credential or both from the university. Towson University's College of Education (CoE) prides itself on its responsiveness to Maryland's children, parents, teachers, administrators, and school districts, and works to provide classes, certificates, and degree programs that provide all of those constituencies with programming that is responsive to their needs, relevant to the best practices in the field, and rigorous in its content. In keeping with this tradition of service to the children, families, and teachers of Maryland, the Towson University CoE is thus pleased to propose an M.Ed. in gifted and creative Education (GACE), offerings that are not available from other public institutions within the state.

COMAR 13A.04.07 regulations establish the minimum standards for gifted and talented programs that each school district is required to offer. The GACE programs would prepare practitioners with the knowledge, understandings, and expertise to provide the services required by COMAR 13A.12.03.12, with a special emphasis on working with the increasingly diverse student populations being served by Maryland schools and building creative thinking. The gifted and creative education program would be housed in the Early Childhood Education Department (ECED), but would make use of faculty from across Towson University.

Teachers must meet the needs of all learners, including the gifted and talented, and to nurture their creativity. None of the University System of Maryland institutions,

however, offer an M.Ed. in gifted and creative education. Indeed, gifted education was identified as a growth area and an area of need in Maryland higher education (Hanover Report, 2016—a copy of the Hanover Report is attached hereto as Appendix B and incorporated herein by this reference). This lack of graduate coursework in gifted and creative education limits the access of teachers in Maryland schools to those practices, strategies, and methods that have been demonstrated as being most effective in serving gifted and talented learners, in building creative and critical thinking skills, and in working with families from all backgrounds to support their children. Many teachers are unfamiliar with the characteristics and needs of diverse gifted learners (children of color, English learners, and students from low-SES households), which severely limits the identification of these children as gifted and in turn reduces their access to programming that develops their talents. No program in Maryland has a special focus on developing the creativity and problem-solving abilities of *all* children.

The proposed programs would help teachers assist children from all grade levels, all backgrounds, and all subject areas develop their creative potential and to better express this across a broad array of subjects in a nearly infinite variety of ways. The GACE program would begin with five courses covering classroom essentials (an introductory course, one focusing on gifted children's social and emotional needs, one that explores how best to differentiate the curriculum for advanced learners), and augment these with two additional courses (models and strategies and creativity and problem solving) as well as an internship experience. All other courses required for the M.Ed. would comprise existing courses currently offered by Towson University, either within a single department of the CoE or from courses within the CoE combined with those from other departments within Towson University. This approach would provide prospective students with the background and skills needed to best serve Maryland's

highly able children, as well as the flexibility to tailor an educational experience that most closely aligns with their professional needs and interests, all while making efficient use of resources. As most teachers work with specific age groups of children (i.e., early childhood, elementary, middle grades, and secondary), candidates for the M.Ed. could elect to take classes in the department most aligned to their needs or (in the case of secondary and middle school teachers), in the disciplinary departments covered by their teaching certificate (i.e., biology, chemistry, English, etc.).

The proposed GACE programs fit well within Towson University's and the CoE's historic and current missions. Towson University's summary mission statement emphasizes its role in:

> Fostering intellectual inquiry and critical thinking [to] prepare graduates who will serve as effective, ethical leaders and engaged citizens. Through a foundation in the liberal arts, an emphasis on rigorous academic standards, and the creation of small learning environments, we are committed to providing a collaborative, interdisciplinary and inter-professional atmosphere, excellence in teaching, leadership development, civic engagement, and applied and sponsored research opportunities at the undergraduate and graduate levels. Our graduates leave Towson University with the vision, creativity and adaptability to craft solutions that enrich the culture, society, economy, and environment of Maryland, the region, and beyond.

This mission aligns with the CoE's role as:

> Maryland's preeminent teacher education institution as well as a national model for professional preparation, Towson University has a distinguished history in the preparation of classroom teachers and education specialists. The College of Education offers a comprehensive slate of high quality, performance-based, professional education programs for the initial and advanced preparation of teachers and education specialists. The majority of graduates from the college enter schools as teachers and specialists.

Together, the expertise and leadership of Towson University, the CoE, and their faculty leave us uniquely suited to provide quality programming for the teachers serving Maryland's children.

B. Critical and compelling regional or Statewide need as identified in the State Plan

Per MSDE's *Maryland Every Student Succeeds Act (ESSA) Consolidated State Plan*, "gifted and talented students" have been added to those groups whose performance is monitored and tracked for improvement. Until this document was published in September of 2017, the performance of gifted and talented students had not been tracked, and thus was not a primary focus of many teachers and administrators. As school districts will now be monitored and expected to demonstrate improvement of gifted and talented students from year to year, we anticipate there being increased demand to meet this critical and compelling statewide need for teachers with special training in serving this population.

Disparities in access to gifted programming exist, per National Center for Education Statistics data for Maryland, about 16% of children overall are identified as gifted, but only 7% of Black students are labeled as such. Similarly, 44% of children enrolled in the Howard County Public School System (HCPSS) are identified as gifted, while fewer than 3% of those educated in Baltimore City Public Schools are. All 76 HCPSS schools offer gifted programming, while only 28 of 177 Baltimore City Public Schools do so. Towson University envisions its GACE program, with its emphasis on ways of identifying and serving gifted and talented children from diverse backgrounds, will help to reduce these disparities and to improve the educational outcomes of all children.

The title of the proposed program, Gifted and Creative Education, clarifies the broad focus of the program and a greater concern for contemporary issues of diversity and inclusiveness. The emphasis on using a variety of research-based instructional strategies that have been demonstrated as effective with diverse gifted and creative learners of the programs reflects the mission statements of Towson University, the College of Education at Towson University, and Goal 1 of the Maryland State Plan for Higher Education, Diversity. The Maryland State Plan for Higher Education notes, as Strategy 1, that we shall, “Continue to improve college readiness among K-12 students, particularly high school students” (p. 27) and, as part of Strategy 6, “Improve the student experience by providing better options and services that are designed to facilitate prompt completion of degree requirements” (p. 27). The interdisciplinary, discipline-focused, and collaborative approach of the proposed MEd program in Gifted and Creative Education responds to this charge given in the Maryland State Plan for Higher Education. Moreover, the critical thinking skills which will be developed in the program’s graduate classes and internship will provide students with the tools to successfully negotiate questions of diversity and difference within the context of developing talents and skills.

C. Quantifiable and reliable evidence and documentation of market supply and demand in the region and State

There are currently an estimated 3.5 million teachers in the United States. According to the Teach.com website, the national demand for teachers will grow by 18 percent by 2024. Teacher shortages are already effecting schools in Maryland, the District of Columbia, and Virginia. Over the next 10 years, The National Bureau of Labor Statistics predicts over 1.9 million new teachers will be hired. The Hanover Report suggests that gifted education specialist positions will increase due to:

- Additional school-aged children in America’s schools;

- High turnover, as an increasing number of current teachers reach retirement age;
- The inability of many teachers to receive training in gifted education because of a lack of programs; and
- The perceived importance of reporting gifted children's progress as a result of recent changes to ESSA.

According to the P-12 Longitudinal Data System, Towson University is the public state institution that prepares the highest number of teachers each year, and we also serve many in-service teachers through our closed cohort programs as well as our offerings at Towson and the Universities at Shady Grove site. Recent graduates are working in every one of the state's 24 school districts.

At the moment, few options exist for teachers interested in serving gifted and creative children, and no options exist that are offered by University System of Maryland institutions. This serves to make additional preparation prohibitively expensive for many teachers and school districts.

Fall Enrollment in Similar Programs					
Institution	2012	2013	2014	2015	2016
Johns Hopkins	7	6	2	1	1
Notre Dame	18	24	22	28	31
McDaniel College (approved 2018)	0	0	0	0	0

Source: MHEC Trends in Enrollment Data by Program

D. Reasonableness of program duplication

To meet more effectively the needs expressed by our local school districts and the requirements of increasingly rigorous national data reporting standards, the proposed

program builds on the strengths of the faculty and existing coursework in the Towson University CoE. A unique aspect of the proposed program that differentiates it from others in the state and directly addresses the evolving role of teachers who work with gifted and creative children, will be the ability of graduates to obtain a M/Ed. with specialized content related to the grade levels which they serve. The 30-credit M.Ed. degree will contain a required core of 18 credits which consists of the courses required for MSDE gifted specialist endorsement, while the remaining 12 credits can be satisfied with a range of elective courses, including options for the completion of Post Baccalaureate Certificates.

Degrees Awarded in Similar Programs					
Institution	Year 1	Year 2	Year 3	Year 4	Year 5
Institution	2012	2013	2014	2015	2016
Johns Hopkins	21	7	9	6	2
Notre Dame	0	2	3	3	4
McDaniel College (approved 2018)	0	0	0	0	0

Source: MHEC Trends in Degrees and Certificates by Program

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

The proposed GACE programs would not overlap or compete with any offered by Maryland's HBIs, and thus not affect the Maryland HBIs' identity.

F. Relevance to high-demand programs at Historically Black Institutions (HBIs)

The proposed GACE programs would not overlap or compete with any offered by Maryland's HBIs, as no HBIs offer a program of this kind.

G. Adequacy of curriculum design and delivery to related learning outcomes

Towson University's CoE has designed a curriculum that will provide an overview of ways to best serve gifted, talented, and creative children while also supplying the specific skills and understandings necessary to provide supports and challenges to children in the classroom. At the center of this curriculum are six courses designed to provide a rigorous and rich background to the field. These courses include the following: Introduction to Gifted Education & Talent Development; Developing and Implementing Curriculum for the Gifted; Models and Strategies for Teaching the Gifted, Talented, and Creative; Social & Emotional Development of Gifted and Creative Children; Creativity & Problem Solving; and Internship. Complete descriptions of these courses are included in Appendix A, and incorporated herein by this reference.

Teachers, of course, are certificated to work with children in specific and limited age spans. For example, teachers with early childhood certification work with children from birth through the third grade, those with elementary certification teach children enrolled in first through sixth grade, those with middle school certification teach grades four through nine in a specific subject area (e.g., mathematics) and those with secondary certification teach children enrolled in seventh through twelfth grade in a specific subject

area. While principles of gifted and creative education will span the PreK through 12th grades, the practitioners who will earn this degree will most frequently work with children enrolled in specific grades.

For this reason we wish candidates for the Gifted and Creative Education (GACE) M.Ed. to take their four electives in one of the specific departments at the College of Education (CoE) or two electives from a CoE department and two electives from a specific academic program from the College of Liberal Arts (CLA), the College of Fine Arts & Communication (CFA), or the Fisher College of Science & Mathematics (FSM). The decision of which classes to take would be made in consultation with and approved by the student's advisor. This would permit GACE students to take advantage of the rich offerings already offered at Towson and to let them focus on those areas that would best benefit them in the classroom.

Table 1. Core Courses for Gifted and Creative Education M.Ed.

Course Number	*Title*	*No. of Credits*
ECED 6xx	Introduction to Gifted Education and Talent Development	3 credits
ECED 6xx	Developing and Implementing Curriculum for the Gifted, Talented, and Creative	3 credits
ECED 6xx	Models and Strategies for Teaching the Gifted, Talented, and Creative	3 credits
ECED 6xx	Social & Emotional Development of Gifted and Creative Children	3 credits
ECED 6xx	Creativity & Problem Solving	3 credits
ECED 6xx	Internship	3 credits

These core courses would be augmented by four others from a single department at Towson University's CoE, selected with the student's advisor so that they best meet the needs of the student's professional practice. As each student has unique needs, and may or may not have already earned an M.Ed., it is difficult to say with certainty how these electives would look. Below are several typical approaches that make use of course required by individual departments for their programs:

Table 2. Early Childhood Education (a total of 12 credits selected from below courses)

Course Number	*Title*	*No. of Credits*
ECED 607	Learner Diversity and Inclusion in Early Childhood Education	3 credits
ECED 609	Growth and Development of Young Children	3 credits
ECED 610	Learning Environments: Curriculum & Technology	3 credits
ECED 619	Assessment, Observation and Evaluation in Early Childhood Education	3 credits
ECED 665	Curriculum Development in Early Childhood Education	3 credits
ECED 680	Celebrating the Arts with Young Children: Integrating the Arts in Curriculum for Young Children	6 credits

Table 3. Elementary Education

Course Number	*Title*	*No. of Credits*
EDUC 605	Informing Educational Practice to Affect Change	3 credits
EDUC 647	Advanced Processes of Teaching and Learning	3 credits
EDUC 660	Matters of Diversity, Equity, and Empowerment in Learning Communities	3 credits
EDUC 665	Curriculum Theory and Development	3 credits

Table 4. Reading Education (the following 4 courses)

Course Number	*Title*	*No. of Credits*
REED 650	Social, Cultural, and Curricular Contexts for Second Language Learning	3 credits
REED 651	Introduction to Assessment for Second Language Learners	3 credits
REED 652	Introduction to Linguistics for Teachers of Language and Literacy	3 credits
REED 665	Teaching Reading & Writing in the Content Areas PreK-12	3 credits

Table 5. Secondary & Middle School Education (the following four courses)

Course Number	*Title*	*No. of Credits*
EDUC 601	Concepts and Issues in Education	3 credits
EDUC 605	Informing Educational Practice to Affect Change	3 credits
SCED 741	Curriculum Development in the Secondary School	3 credits
SCED 647	Advanced Processes of Teaching and Learning	3 credits

Table 6. Educational Technology & Literacy (one course sequence would be selected)

Course Number	*Title*	*No. of Credits*
ISTC 541	Foundations in Instructional Technology	3 credits
ISTC 655	Multimedia Design & Development	3 credits
ISTC 717	Distance Education Theory & Practice	3 credits

ISTC 731	Advanced Technology Integration	3 credits
	OR	
ISTC 541*	Foundations in Instructional Technology	3 credits
ISTC 667	Instructional Development	3 credits
ISTC 674	Special Topics in Instructional Technologies	3 credits
ISTC 731	Theory and Practice for Integrating Digital Resources into Learning and Teaching	3 credits

*Completing the second sequence would also result in a post-baccalaureate certificate (PBD) in educational technology

Admission Requirements

Admission to the GACE M.Ed. will require the following:

- A baccalaureate degree from an accredited college or university;
- A minimum undergraduate GPA of 3.00 is required for full admission and 2.75 for conditional admission to the program. All GPA calculations are based on the last 60 units of undergraduate and post-baccalaureate study;
- A current résumé to as well as all post-secondary transcripts.
- Experience/background in the field with children and families;
- Two professional narrative letters of recommendation;
- An admission essay discussing the applicant's experiences working with children and families, and rationale for earning a master's degree related to professional goals and career aspirations.

In addition to the foregoing, applicants will be required to produce one or more of the following:

- An undergraduate degree or graduate course work in education, child development, psychology, family studies or a related field OR
- Teacher certification OR
- A minimum of three years of professional experience in a classroom or related setting serving children from birth to age 18 OR
- Undergraduate courses in the following areas: educational psychology or psychology of learning, child growth and development, curriculum and methods in education

Exceptional candidates who do not meet the specific experience/background criteria above may be considered for admission if they intend to work in settings with children from birth through age 18. In these instances, an interview with the program director is required.

Learning Outcomes

The descriptions of the courses reflect a clear focus upon contemporary issues facing educators working with gifted and creative children that include issues of diversity and difference, whether through the encounter of difference in race or language, the movement of populations, the negotiation of new communities and learning environments, differences in language, or difference in human cultural practices surrounding schooling and learning—to name just a few examples. Standards-based performance tasks have been developed for each core course so that the competencies that comprise each standard are addressed by both formative and summative assessments within the specific course.

Consistent 1 to 5 scoring rubrics have been developed for every competency within each standard. These scoring rubrics will be used every time a course is offered, and results related to each student's performance will be relayed to both the individual

student, the program director, the department assessment committee, and the department chair. This permits the program to provide specific standards-based feedback to students while they are enrolled in the course, and provides the department with information necessary to make curricular and instructional modifications to meet identified areas of student and program need.

ECED faculty will be involved in identifying ways to improve the program based upon assessment data collected. Specifically, faculty members shall:

1. Gather, compile, and submit data in table form at the conclusion of each core course summarizing student performance on those competencies that are assessed in each course;
2. Departmental members will organize and analyze data for each standard across the program;
3. Faculty members will review this data on a regular basis;
4. Proficiency data generated by the core assessments will be triangulated with instructor perceptions and grades as well as student and program completer assessments;
5. The department will analyze the scope and sequence of each course in light of the assessment data, with special attention paid to curriculum, instructional strategies, and assessments; and
6. Course content shall be modified as a result of these analyses.

H. Adequacy of articulation

N/A

I. Adequacy of faculty resources

The Towson University College of Education (CoE) has faculty members with special expertise in gifted and talented education and creativity and problem solving, especially as conceptualized to create inclusive programming in the schools. Many Maryland school districts would welcome an excellent and affordable program that would permit their teachers to gain either gifted and talented specialist certification, or an MEd in Gifted and Creative Education, or both. To that end, the Towson University CoE has envisioned creating a program that would meet the needs of teachers to build talented children's cognitive and creative skills. Two full-time, tenure-track faculty members in Towson University's CoE have extensive backgrounds in gifted, talented, and creative education, both at the PreK-12 level and in higher education.

Dr. Stephen T. Schroth is Professor & Graduate Programs Director at the CoE at Towson University, where he directs the MEd and MEd Plus programs in Early Childhood Education. Dr. Schroth holds a PhD in Educational Psychology/Gifted Education from the University of Virginia, where he worked as a research assistant for the National Research Center on the Gifted and Talented (NRC/GT). Dr. Schroth has written extensively on gifted education, with three articles being awarded the MENSA Education & Research Foundation Award for Excellence in Research, which recognizes studies of particular interest to gifted, talented, and creative learners. He has served as the chair of both the Arts Network and the Conceptual Foundations Network of the National Association for Gifted Children (NAGC), and as the Visual Arts Coordinator of the Torrance International Legacy Awards. His research interests include parenting gifted children; quality curriculum for gifted, talented, and creative children; and about preparing teachers to work with diverse gifted children.

Dr. Kimberly McCormick holds a PhD in Learning and Developmental Sciences with a Specialization in Educational Psychology and a Minor in Counseling from Indiana University and an MS in Educational Psychology with an emphasis in gifted and talented education from Ball State University. Dr. McCormick also holds a gifted endorsement from the Indiana Department of Education.

Complete the following table:

Faculty Resources					
	FTE	Highest Degree Earned/Field of Study	Rank	Status (Full-time or Part-time)	Courses Teaching
Existing Faculty					
Stephen T. Schroth, PhD	1	PhD, Educational Psychology/Gifted Education	Professor & Graduate Programs Director	Full-time	GACE 601; GACE 602; GACE 603; GACE 710
Kimberly McCormick, PhD	1	PhD, Learning & Developmental Sciences	Assistant Professor	Full-time	GACE 601; GACE 604; GACE 605; GACE 710
Janese Daniels, PhD	1	PhD, Human Development Education	Associate Professor	Full-time	GACE 601; GACE 605
Ocie Watson-Thompson	1	EdD, Curriculum & Instruction	Professor	Full-time	GACE 602; GACE 603

Faculty Resources					
	FTE	Highest Degree Earned/Field of Study	Rank	Status (Full-time or Part-time)	Courses Teaching
Lea Ann Christianson	1	PhD, Curriculum & Instruction	Associate Professor	Full-time	ECED 665
Mubina Kirmani	1	EdD, Education	Professor	Full-time	ECED 607
Judith Guerrero	1	PhD, Curriculum & Instruction	Associate Professor	Full-time	ECED 665
Sara Hooks	1	EdD, Special Education	Assistant Professor	Full-time	GACE 603

(Note: Faculty resources must address minimum requirements detailed in COMAR 13B.02.03.11 and 13B.02.03.20 (1) at least 50% of the total semester credit hours within the program shall be taught by full-time faculty; and 2) at least 1/3 of the courses offered in an off-campus program shall be taught by full-time faculty of the parent institution.)

J. Adequacy of library resources

Albert S. Cook Library on the Towson campus supports student scholarship across Towson University by providing a wide array of resources, services, and learning opportunities that are available to students both on and off campus. Cook Library serves as an information hub with more than 300 computer workstations available to connect users to library catalogs, electronic databases, electronic books, online journals and the Internet. The library has three electronic classrooms with wireless Internet, and cloud printers and photocopy machines are located throughout the building as well. Graduate students have access to a graduate reading room on the second floor, as well as individual quiet study areas and group study spaces are available across the library as well. Special space within Cook Library is dedicated to quiet study and there are study cubicles located throughout the building for individual study as well as rooms specially designed for group work.

Cook Library's online catalog and electronic resources are accessible to Towson University students anytime, anywhere through the library's web page: http://libraries.towson.edu. The library's collection contains over 600,000 books, as well as almost 250,000 electronic books that can be accessed by students from any location. Towson University students also have access to more than 150 electronic databases and about 20,000 electronic and print journals. Cook Library's collection is especially rich in areas related to teacher education, educational psychology, curriculum & instruction, gifted and creative education, and most matters related to PreK-12 schools, as befits its role as the State of Maryland's flagship teacher education institution. In addition to the rich resources available at Cook Library, Towson students can utilize other area library collections. They may request books from the University System of Maryland and Affiliated Institutions (USMAI) libraries, and they have access to many private college and university libraries in the Baltimore area. Materials needed for academic research may also be obtained from around the world via interlibrary loan and graduate students have access to document delivery as well. The Towson University CoE has and will continue to submit requests to Cook Library for books and other resources that support scholarly inquiry into gifted and creative education.

K. Adequacy of physical facilities, infrastructure and instructional equipment

The College of Education has been located in Hawkins Hall since its opening in 1977. Recently, the CoE has expanded into the adjacent and connected Psychology Building, which gives it extensively more space for both classrooms and offices. During the summer of 2017, Hawkins Hall was extensively renovated, with new ceilings, lighting, HVAC, flooring, and sprinklers being installed throughout the building. Additionally, the technology in all classrooms was upgraded, two new workspaces were introduced, that

permit students, faculty, and classes to work with technology in collaborative and innovative ways. As such, the facilities of Hawkins Hall are sufficient for the purposes of this program.

L. Adequacy of financial resources with documentation

As a member of the University System of Maryland (USM), Towson University receives funding from both state funding and other revenue streams. For the 2017-2018 academic year, for example, Towson University has received state-assisted revenues of over $307,372,708, a sum which represents nearly 61% of Towson University's total budget of $505,513,573. The Gifted and Creative Education Program will operate within this budget, and will generate additional funding. As a result, the Gifted and Creative Education program will not need additional resources from the Provost of the University nor the Dean of the College.

M. Adequacy of provisions for evaluation of program

The proposed program will be evaluated on an annual basis by the CoE as well as by Towson University. It will also be evaluated every seven years at the state level by University System of Maryland (USM) and the Maryland State Department of Education MSDE. The program will also undergo review every seven years by the Council for the Accreditation of Educator Preparation (CAEP), the national accreditor for education programs.

The evaluation process for the GACE program will proceed as follows: In November each year, the program will submit the Yearly Assessment System Update & Data Analysis Report (YASU/DAR) to the CoE for review. The YASU/DAR is a report on the assessment results, analysis of those results, progress toward program goals, and any new goals and/or changes for the upcoming year. The CoE assessment team reviews

the reports and sends feedback to the department. The YASU/DAR is then forwarded on to the Towson University Office of Assessment for university-level review.

In January, the Office of Assessment hosts “Assessment Day” where all programs present data and analysis on their program learning outcomes. Faculty from across Towson University participate in this peer review process and utilize a rubric developed by the University Assessment Council’s Subcommittee on Institutional Effectiveness to evaluate program reports. Results are then synthesized and recommendations are submitted to the University Assessment Council for approval. This data is used for continuous program improvement as part of the Middle States Accreditation process.

The University System of Maryland (USM) requires a program review by external reviewers for all academic degree programs every seven years. The 7-year program review process is extensive and consists of an internal self-study of each program within the context of the discipline as a whole and the department in which it resides. Each review must include feedback from an external reviewer and a comprehensive plan for improvement

N. Consistency with the State’s minority student achievement goals

Maryland’s minority student achievement goals are set forth in COMAR 13B.02.03.05 and the State Plan for Post-Secondary Education. The Maryland State Plan for Post-Secondary Education notes the changing demographics of the State’s school age population, and what this will mean for both PreK-12 schools and institutions of higher education.

The Gifted and Creative Education Program proposed will support these goals and objectives. As Maryland’s flagship teacher education institution, Towson University has long been charged with improving the instructional practices teachers use in Maryland’s

classrooms. Both of these documents examine the excellence gap that exists in Maryland, with fewer students who are black and Hispanic, from low-SES homes, or English learners scoring at advanced levels on state and national achievement tests. This gap is exacerbated by the paucity of opportunities such teachers have to obtain training on how best to serve diverse gifted learners. Specifically, the Gifted and Creative Education Program will:

1. Better recognize the characteristics and needs of gifted and creative children and to understand how those of diverse gifted and creative learners differ from those of the traditional populations served by such programs;
2. Design and implement curriculum that is rigorous and discipline-based, so that all children are able to interact with material that is challenging, accurate, and stimulating;
3. Use instructional strategies, including project-based learning, differentiation, guided investigations, acceleration, discussion, and others that have a strong research base that demonstrates their effectiveness with gifted learners;
4. Assess student learning so that gifted children's progress can be accurately tracked and to use this data to plan instruction;
5. Teach and support gifted and creative learners' critical and creative thinking skills, recognizing that all children are creative but that they often need to have different skills and needs that teachers can support and nurture;
6. Demonstrate that gifted and creative children's social and emotional needs include addressing heightened awareness, anxiety, perfectionism, stress, issues with peer relationships, and concerns with identity and fit and provide teachers with the tools and strategies to address these; and

7. Support teachers and administrators who seek to establish and support gifted and creative programming and programs in the schools they serve in ways that will support both excellence and equity.

For these reasons, the proposed Gifted and Creative Education Program will support and enhance the State's minority student achievement goals are set forth in COMAR 13B.02.03.05 and the State Plan for Post-Secondary Education.

O. Relationship to low productivity programs identified by the Commission

N/A.

P. If proposing a distance education program, please provide evidence of the Principles of Good Practice

N/A.

Q. Program Resources and Expenditures Tables

Towson University has received state-assisted revenues of over $307,372,708, a sum which represents nearly 61% of Towson University's total budget of $505,513,573. The Gifted and Creative Education Program will operate within this budget, and will generate additional funding based on the projected enrolled students completing six credits per annum. As a result, the Gifted and Creative Education program will not need additional resources from either the Office of the Provost or the Dean of the College.

Instructions: Double clicking on the tables below allows you to input data as you would in an excel spreadsheet. The calculations will be completed automatically. Simply click on the page elsewhere to embed the spreadsheet in the Word document again.

a. Annual Full-time Revenue of New Students	**0**	**0**	**0**	**0**	**0**
Number of Full-time Students	0	0	0	0	0
Annual Tuition Rate	$0	$0	$0	$0	$0
Subtotal Tuition	$0	$0	$0	$0	$0
Annual Fees	$0	$0	$0	$0	$0
Subtotal Fees	$0	$0	$0	$0	$0
Total Full-time Revenue of New Students	$0	$0	$0	$0	$0
b. Annual Part-time Revenue	0	0	0	0	
Number of Part-Time Students	10	20	30	30	30
Credit Hour Tuition Rate	$398	$398	$398	$398	$398
Annual Fees Per Credit Hour	$130	$130	$130	$130	$130
Annual Credit Hours Per Student	6	6	6	6	6
Subtotal Tuition	$23,880	$47,760	$71,640	$71,640	$71,640
Subtotal Fees	$7,800	$15,600	$23,400	$23,400	$23,400
Total Part Time Revenue	$31,680	$63,360	$95,040	$95,040	$95,040
3. Grants, Contracts & Other Sources[3]	**$0**	**$0**	**$0**	**$0**	**$0**
4. Other Sources	**$0**	**$0**	**$0**	**$0**	**$0**
TOTAL (Add 1 - 4)	$31,680	$63,360	$95,040	$95,040	$95,040

[1] Whenever reallocated funds are included among the resources available to new programs, the following information must be provided in a footnote: origin(s) of reallocated funds, impact of the reallocation on the existing academic program(s), and manner in which the reallocation is consistent with the institution's strategic plan.

[2] This figure should be a realistic percentage of tuition and fees which will be used to support the new program. Factors such as indirect costs linked to new students and the impact of enrolling continuing students in the new program should be considered when determining the percentage.

[3] Whenever external funds are included among the resources, the following information must be provided in a footnote: source of the funding and alternative methods of funding the program after the cessation of external funding.

Expenditures are based upon the anticipated need for a 0.3 fte of a faculty salary for the first year, rising to 0.9 in the fifth.

TABLE 2: EXPENDITURES

Fill in blue shaded areas only.

Expenditure Categories	(Year 1)	(Year 2)	(Year 3)	(Year 4)	(Year 5)
1. Total Faculty Expenses	$21,280	$42,560	$63,840	$63,840	$63,840
(b + c below)	**$0**	**$0**	**$0**	**$0**	**$0**
a. #FTE	**0.3**	**0.6**	**0.9**	**0.9**	**0.9**
b. Total Salary	**16,000**	**32,000**	**48,000**	**48,000**	**48,000**
c. Total Benefits	5,280	10,560	15,840	15,840	15,840
2. Total Administrative Staff Expenses	0	0	0	0	0
(b + c below)	**0**	**0**	**0**	**0**	**0**
a. #FTE	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**
b. Total Salary	**0**	**0**	**0**	**0**	**0**
c. Total Benefits	0	0	0	0	0
3. Total Support Staff Expenses	0	0	0	0	0
(b + c below)	0	0	0	0	0
a. #FTE	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**
b. Total Salary	**0**	**0**	**0**	**0**	**0**
c. Total Benefits	0	0	0	0	0
4. Equipment	**0**	**0**	**0**	**0**	**0**
5. Library	**2,500**	**500**	**500**	**500**	**500**
6. New or Renovated Space	**0**	**0**	**0**	**0**	**0**
7. Other Expenses	**9,000**	**1,500**	**1,500**	**1,500**	**1,500**
TOTAL (1-7)	$32,780	$44,560	$65,840	$65,840	$65,840

Appendix A
GACE Course Descriptions

ECED 6xx—Introduction to Gifted Education and Talent Development (3 credits). Overview of the fundamental background knowledge necessary for making decisions about the identification and education of gifted, talented, and creative students and ways of interacting with families to ensure that children receive adequate challenge and support both in and out of the classroom. Topics explored will include definitions of giftedness and creativity, the history of the field, characteristics of gifted and creative learners, identification of children for inclusion in gifted and creative education programs, service delivery models, curricular considerations, ways of developing creativity and problem solving skills, the social and emotional needs of gifted and creative students, and consideration of special populations of gifted and creative students (e.g., children of color, students from low-SES backgrounds, English learners, immigrants, twice exceptional learners).

ECED 6xx—Developing and Implementing Curriculum for the Gifted, Talented, and Creative (3 credits). This course examines basic guidelines for creating appropriate curriculum for gifted, talented, and creative children. This will be done through an exploration of the major curriculum models in the field (e.g., Multiple Menu Model, Integrated Curriculum, CLEAR Curriculum, Depth and Complexity, Differentiation, Parallel Curriculum; Guided Investigations; Creative Problem Solving). Students will be guided in the creation of a knowledge menu for a particular discipline and accompanying units of instruction based on these that can be applied to classrooms, so that children from all backgrounds, including the gifted and creative, will receive instruction that is rigorous and discipline-based while also focused upon their particular skills and needs.

ECED 6xx—Models and Strategies for Teaching the Gifted, Talented, and Creative (3 credits). An exploration of the general models for delivering instruction to gifted and creative students (e.g., Schoolwide Enrichment Model, Autonomous Learner Model, Multiple Talent Model, Purdue Three-Stage Model, Levels of Service Approach) as well as introducing and adapting a variety of instructional strategies for teaching gifted and students (e.g., Socratic Method, curriculum compacting, acceleration, problem-based learning, complex instruction, creative problem solving, questioning strategies). Approaches that are effective in a variety of settings (i.e., pull-out, inclusion, special classes) will be emphasized.

ECED 6xx—Social & Emotional Development of Gifted and Creative Children (3 credits). Designed for teachers, administrators, parents, and others who work with high ability learners. Investigates similarities and differences between the development of gifted and creative learners and other students, exploring the implications of these comparisons and focusing on strategies to assist gifted and creative learners in school and home environments. Special attention shall be paid to challenges faced by children of color,

students from low-SES backgrounds, English learners, immigrants, twice-exceptional learners, males and females, and the like.

ECED 6xx—Creativity & Problem Solving (3 credits). Explores theories of creativity through study of creative people, the creative process, and creative products. Focuses on definitions of creativity, assessment of creativity, research on creativity and its applications to education, environments conducive to the development of creativity, and heuristics designed to encourage creativity. Special attention shall be paid to ways children's creativity can be encouraged and developed in the classroom and at home and how manifestations of creativity may vary among certain populations (e.g., children of color, students from low-SES backgrounds, English learners, immigrants, twice exceptional learners).

ECED 7xx—Internship (3 credits). A special assignment designed to present an experience relating theory and practice in gifted and talented education programs. Prerequisites: Graduate student standing and consent of the Gifted and Creative Education graduate program director. This internship will provide a unique experience in an educational setting consistent with the student's professional objectives and program focus.

UNIVERSITY SYSTEM of MARYLAND

BOARD OF REGENTS

SUMMARY OF ITEM FOR ACTION, INFORMATION, OR DISCUSSION

TOPIC: University of Maryland, Baltimore: Ph.D. in Health Professions Education

COMMITTEE: Education Policy and Student Life

DATE OF COMMITTEE MEETING: Tuesday, January 15, 2019

SUMMARY: The Ph.D. in Health Professions Education is intended to meet the needs of aspiring and current faculty who are master's- or doctoral-trained healthcare professionals. As such, the degree program will target: (a) students and faculty from each of the six professional schools at UMB (Medical, Nursing, Pharmacy, Social Work, Law, Dental), as well as master's and doctoral students enrolled in the Graduate School, (b) the in-state and out-of-state adult workforce who are involved in the myriad of professions listed above, and (c) healthcare professionals. The inclusion of these targeted audiences will ensure an interdisciplinary approach for all enrolled students.

The Health Professions doctoral degree has a set curriculum, requiring students to complete 60-credit hours of coursework over three years. The curriculum combines rigorous academic preparation with research and practical application of skills. Students will spend approximately two semesters dedicated to independent study and research guided by a mentor, culminating in scholarly publications and a dissertation. Students will engage with leading practitioners through partnerships with UMB faculty, public and private organizations, educational associations, hospitals, clinics, and cooperatives working to advance the science of teaching and learning.

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 Education Policy and Student Life Committee recommend that the Board of Regents approve the proposal from the University of Maryland, Baltimore to offer the Ph.D. in Health Professions Education.

COMMITTEE ACTION:		DATE: January 15, 2019
BOARD ACTION:		DATE:
SUBMITTED BY: Joann A. Boughman	301-445-1992	jboughman@usmd.edu

UNIVERSITY of MARYLAND

BRUCE E. JARRELL, MD, FACS
Executive Vice President and Provost
Dean, Graduate School

Academic Affairs/Graduate School

220 North Arch Street, 14th floor
Baltimore, MD 21201
410 706 2304

bjarrell@umaryland.edu
www.umaryland.edu

December 10, 2018

Robert L. Caret, PhD
Chancellor
University System of Maryland
3300 Metzerott Road
Adelphi, MD 20783

Dear Chancellor Caret:

Please find enclosed, a proposal from the University of Maryland Graduate School seeking authorization to offer a PhD in Health Profession Education program.

This program will prepare health care professionals to lead and to education the next generation of caregivers and will contribute meeting the State's expanding need for a skilled workforce.

If you need further information, please feel free to contact me.

Sincerely,

Bruce E Jarrell

Bruce E. Jarrell, MD, FACS
Executive Vice President and Provost
Dean, Graduate School

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, Baltimore
Institution Submitting Proposal

PhD in Health Professions Education
Title of Proposed Program

Doctoral Degree	**Fall 2019**
Award to be Offered	Projected Implementation Date
	13.1327
Proposed HEGIS Code	Proposed CIP Code
University of Maryland Graduate School	**Dr. Erin Golembewski** **Senior Associate Dean**
Department in which program will be located	Department Contact
(410) 706-8323	**egole001@umaryland.edu**
Contact Phone Number	Contact E-Mail Address
Bruce E Jarrell	**December 10, 2018**

Table of Contents

A. Centrality to institutional mission statement and planning priorities

Program description and centrality to the institutional mission statement

Ernest Boyer noted scholar described the work of the academic in the following statement “The work of a professoriate might be thought as having four separate yet overlapping functions. There is the scholarship of discovery; the scholarship of integration: the scholarship of application and the scholarship of teaching.”

Few healthcare professionals and faculty are formally prepared to engage in scholarship much less in the basics of inter-professional education, curricular design, assessment, program evaluation, and institutional leadership. Health professionals are prepared academically to take care of patients and clients often within their perspective discipline. This model has created a disease-centric medical system and workforce. To create a health workforce that is prepared to implement population health care delivery, we must prepare students to practice team-based care. Health Professions education is critical to the task of meeting the healthcare needs of communities. The need for faculty prepared to educate and train the next generation of learners has increased globally. Dr. Ara Tekian, Professor and Director of the International Affairs in the Department of Medical Education and Associate Dean for the Office of International Education for the University of Illinois College of Medicine at Chicago has compiled a list of 24 doctoral programs identified worldwide that offer a Ph.D. in health professions education. Ten of these programs exist in the US; most are located in private institutions. The University of Maryland Baltimore as the state of Maryland founding campus for graduate professional education is uniquely prepared to meet the growing need for health Profession educators and offer this degree to advance the scholarship of graduate health profession teaching and learning.

The Ph.D. in health professions education will consist of seventeen courses with a total of 60 credits. The instruction will occur predominantly online utilizing distance learning technologies in addition to a mandatory on-site residency to be taken in tandem with the beginning of the program and conclusion. The mandatory in-person (residency) will require students to attend four consecutive days of face-to-face lectures, training, discussions, and presentations at UMB’s campus in Baltimore, MD. The in-person interactions will assist in facilitating the peer learning, research, reflection and group discussion that is essential to creating an interdisciplinary team of faculty and scholars.

UMB will leverage extensive graduate education, human services expertise from across the campus. Faculty and students will build on existing health professional competencies gained through professional education, examine the historical and current foundations of learning theory, and engage in the practical application of emerging science of teaching and learning and advance scholarship. Students will examine current pedagogical theories and challenges faced by health professions programs, and institutions to advance their skills and knowledge under the expert guidance of accomplished faculty from UMB. Completion of the Ph.D. in Health Professions Education will:

1. Ph.D. graduates will demonstrate high quality and effective teaching methods.
2. Ph.D. graduates will demonstrate proficiency in curricula design, delivery and assessment at the course and program level.
3. Ph.D. graduates will work effectively in cross-disciplinary teams.
4. Ph.D. graduates will advance education theoretical research and models, generate and disseminate scholarship of teaching and learning.

5. Ph.D. graduates will demonstrate the ability to integrate educational research techniques to improve and demonstrate educational program and institutional effectiveness and sustainability.
6. Ph.D. graduates will demonstrate academic and executive administration and leadership qualities needed to lead the program, institutions, agencies, and organizations in the health and medical professions.
7. Ph.D. graduates will participate in community engagement to improve educational quality.

The Ph.D. in Health Professions Education relates to UMB's mission: "To improve the human condition and serve the public good of Maryland and society-at-large through education, research, clinical care, and service" by providing faculty and students with the necessary tools to further develop interprofessional health profession curricular design, implementation and assessment skills necessary to adequately prepare and improve the health of our diverse society. The degree program directly relates to UMB's vision to "be a beacon to the world as an environment for learning and discovery that is rich in diversity and inclusion."

Centrality to the strategic plan

The proposed degree supports UMB's strategic goals through the fulfillment of the following strategic themes:

- The UMB theme of **Student Success** challenges academic units to "design contemporary teaching and learning environments that are accessible and affordable to prepare students to be exemplary professionals and leaders in society" (University of Maryland, Baltimore, n.d.). The degree is designed for completion within three academic years, and its online format increases its accessibility to students. The university has recognized the vital role the Graduate School plays in creating accessible education for individuals already engaged in their professions.
- The theme, **Inclusive Excellence**, encourages the campus to "foster an environment that recognizes and values each member of the UMB community, enabling members to function at their highest potential to achieve their personal and professional goals" (University of Maryland, Baltimore, n.d.). This degree not only provides scholar-practitioners with the strategies to effectively engage with various inter-disciplinary health profession members, but it also equips students with teaching and learning skills that can be utilized within any health professional education environment and prepares them for the faculty leader role.
- **Efficiency, Effectiveness and Assessment**, UMB aims to incentivize efficiency, effectiveness, and evaluation to make more responsible and impactful use of UMB's resources. By working collaboratively across schools, we identified existing coursework to support the degree assuring the scholarship of teaching and learning is approached from an interdisciplinary perspective for both faculty and students without unnecessary redundancy.

B. Critical and compelling regional or statewide need as identified in the State Plan

Alignment with the Maryland State Plan

There is compelling regional and statewide need for nursing and health profession faculty that directly contributes to the creation of a competent health workforce. The Maryland State Plan for Postsecondary Education 2017-2022 outlines several goals for institutions of higher education. This degree addresses each area.

Goal 1: Success: The Health Professions Education Ph.D. is designed to prepare scholar-practitioners who will promote and implement practices and policies that will ensure student success. This degree aims to explore, inform and advance best practices in teaching, learning and assessment of graduate health professionals.

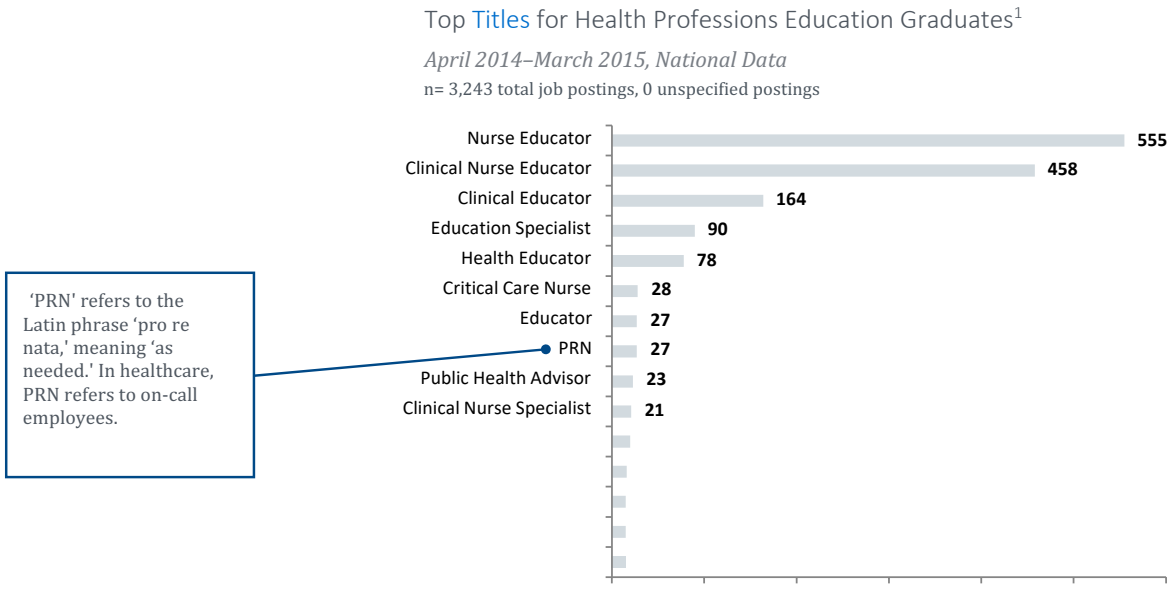
Goal 2: Access, Affordability, and Completion by offering an affordable, doctoral degree designed to be completed within three years with part-time options. This design and academic commitment will encourage program completion resulting in a qualified faculty and a competent workforce. The degree will appeal to students, graduates and faculty enrolled in other academic programs at UMB, as well as working clinical professionals.

Goal 3: Innovation- is in direct alignment with this degree which aims to provide health professionals with the skills to interact with students and interdisciplinary faculty in a culturally responsive manner applying the neuroscience of teaching and learning to curricular design and assessment. By training health professional faculty together, we intend to address and explore interprofessional issues through this program, we will foster the advancement of inter-professional education and clinical practice at the state and national level.

Alignment with National Trends

The leadership of the University of Maryland Baltimore approached the Educational Advisory Board seeking information on workforce demand for doctoral programs in healthcare professions education in 2017. The forum reviewed job titles, skills, employers and locations nationwide and provided a report in early 2017. National Employer Demand for Health Professions Education Rose eight percent since 2013 according to a study done by the Education Advisory Board's partner Burning Glass labor/Insight. Employers posted over 1000 jobs nationally for health Professions educators "nurse educator', clinical nurse educator and clinical educator were the top three. The top titles indicate significant employer demand for nurses and other clinical health professionals with a recent demand for doctoral degree attainment.

Changes within the healthcare delivery system have led to a demand for different types of education in all health professions, resulting in a recognition that educators who teach in health professions programs need to be prepared to meet the challenge of diverse learners. According to (Daley and Cervero 2018) faculty, preparation should include dual preparation as both a clinician and educator along with preparation in research and leadership in health Profession education.



6

Job Outlook

Professional associations for each of the Health Professions on campus were contacted, and recurring themes regarding faculty shortage concerns were evident. The National League of Nursing has studied faculty workforce issues extensively and notes that each year since 2009 an increasing number of qualified students are turned away due to faculty shortages. Furthermore, the Labor Bureau of Labor and Statistics of Employment Projections, states that for 2012-2022, 35 percent more faculty members will be needed to meet expected demand for nursing alone. Also, 10,200 current nursing faculty members are expected to retire, mostly by 2022, creating a need for 34,200 new nursing instructors.

Graduates of the proposed degree will be prepared to apply the skills that they have acquired through the degree to employment in the private sector, as well as local, state and government positions in healthcare, and education.

Information from indeed.com was gathered to understand better the positions sought by employers. A keyword search was utilized rendering thousands of positions that required skills related to nursing and health professions faculty.

Health Professional Education search revealed	7,236	
Nursing Faculty		7,321
Social Work Faculty		1,910
Physician Assistant Faculty	1,520	
Pharmacy Faculty		1,087
Dental Faculty	484	
Healthcare Education Specialist		28,246
Healthcare Dean positions		303

C. Quantifiable and reliable evidence and documentation of market supply and demand in the region and state

The significant growth of physician assistant (PA) programs continues to create challenges for programs and educational institutions in identifying, recruiting, and retaining qualified faculty. Based on national data collected annually by the Physician Assistant Education Association physician assistant program directors continue to rank the lack of available applicants as a significant barrier to filling open positions. The importance of having sufficient and stable numbers of qualified PA faculty is critical to the successful education of future physician assistants as well as to the quality and reputation of the PA profession. In 2016 the University of Maryland Eastern Shore Physician Assistant program lost their accreditation, a central reason for the loss was the lack of qualified clinical faculty to teach and lead the program. Physician Assistant faculty are in high demand, yet few are academically prepared for the teaching, scholarship or service expected of the professoriate.

According to the Maryland Higher Education Commission 2017 report the nursing shortage projected in Maryland directly correlates to the faculty shortage. UMB has established the Maryland Nursing Workforce center led by Rebecca Wiseman Ph.D. funded through a Nurse Support II grant. The center will focus on three areas faculty, pipeline and practice. Faculty data will focus on statistics related to the number of faculty positions

available projected faculty needs and areas of most faculty vacancies, educational attainment, and backgrounds. The most recent data submitted to MHEC in 2017 is expressed in tabular form below showing an imminent faculty shortage and a decline in Ph.D. prepared nurses.

NEW FACULTY	2012	2013	2014	2015	2016
MSN Incl MS entry	545 -104	619 -66	628 -81	629 -70	526 -44
PhD	14	22	8	14	10
DNP	36	34	27	49	45
Total Doctoral	50	56	35	63	55
New Potential Faculty Prepared w/ graduate degrees	595	675	663	692	581 MHEC,2017

The Bureau for labor and statistics anticipates the need for Pharmacists to grow by 6%, social work to grow by 16% through 2026 and the need for Dentists is expected to grow by 19%. Each year qualified applicants are turned away due to lack of faculty in these disciplines.

Curricular Components and Employer Demand

In preparation for the creation of this degree, UMB contacted the Education Advisory Board (EAB), a provider of research, enterprise technology, and data-enabled services for education institutions, to conduct a market viability examination. Though the use of qualitative interviews with peer institutions, EAB provided UMB with a report in 2017. The qualitative analysis revealed the majority of students would like to be part-time and working professionals and that online programming allow flexibility and convenience for students, especially, working professionals, who will be the intended audience of this degree.

Ten institutions were profiled, collectively they offer online or in-person programs, depending on the target audience for the program. Online programs offer interdisciplinary courses in health care and leadership to attract large numbers of students. Seton Hall University's program currently enrolls more than 80 students in its online health professions education program. Of those students, 80 percent hold leadership positions in health care, mostly from nursing backgrounds.

EAB also provided additional evidence to support the inclusion of an in-person component in the degree. EAB provided the following, "administrators report the success of courses which cause students to self-reflect and challenge long-held beliefs and opinions. These 'a-ha' moments may occur in online courses, but more often happen in face-to-face group settings."

Likelihood to apply among current UMB faculty and students
The UMB Deans were polled to gauge need and interest in this degree within their specialty and schools. Unanimously they agreed that there would be significant interest in this degree from existing faculty, graduates, clinical instructional faculty and students.

D. Reasonableness of program duplication

There are only ten Health Professions Education Ph.D. programs in the country, no other Ph.D. in health professions education is offered in the University of Maryland System or state.

Johns Hopkins offers a Masters in Medical Education that potentially could serve as a pathway into the Ph.D. program.

McDaniel College's PBC is targeted towards current K-12 teachers and directly addresses inequities in educational access, curriculum, and pedagogy. Enrollment is currently only available through school district partnership.

Similarly, Notre Dame of Maryland University offers a Master of Arts in Leadership in Teaching: Culturally Proficient Leadership which is designed to prepare K-12 educators for meeting the needs of linguistically and culturally diverse students.

Unlike the programs designed specifically for K-12 educators, UMB's proposed Ph.D. degree in health professions education is designed for current and future faculty of health professionals; including nursing, medicine, pharmacy, physician assistant, social work and dentistry. This Ph.D. will focus on the scholarship of teaching and learning of health professionals, this is a unique area of study in health Professions education and is not currently available on campus as the current Ph.D. in nursing and DNP are focused on clinical practice.

To our knowledge, there are no additional Maryland institutions offering programs similar to the Ph.D. in Health Professions education.

E. Relevance to high-demand programs at Historically Black Institutions (HBIs)

Currently, there are no academic programs offered through Bowie State University, Coppin State University, Morgan State University, and the University of Maryland Eastern Shore that resemble the proposed Ph.D. in Health Professions Education. Based on the current offerings of the Maryland HBIs, we do not expect any impact on the implementation or maintenance of high-demand programs at HBIs.

F. Relevance to the identity of Historically Black Institutions (HBIs)
HBIs do have a unique history and identity of educating racial minorities. HBIs are

dedicated to educating graduates who can interact with other racial and ethnic groups upon graduation. Predominately White institutions also must educate students to interact with diverse individuals upon graduation. With this in mind, we do not believe that offering this program impacts the mission of HBIs.

G. Adequacy of curriculum design and delivery to related learning outcomes

UMB is committed to providing the best teaching and learning possible and excellence in all of its courses. Every effort is made to ensure that coherence, cohesiveness, and academic rigor between programs offered in traditional instructional formats and those offered online are equivalent. Courses are designed to result in learning outcomes appropriate to the rigor and breadth of the course and all courses *assess* student achievement of defined learning outcomes through regular and formal assessment planning.

The learning outcomes for each course are the foundation of the course; the learning activities, assessments, and content of the course are in alignment with the outcomes and provide a clear pathway for mastery of the outcomes. A multidisciplinary health professions faculty council recommended the proposed curriculum and faculty to teach in the program. To design the new degree a curricular crosswalk analysis of the current Health Professions Education Ph.D. programs was performed followed by a backward design exercise to create the Ph.D. curriculum, after identifying the most likely candidates and their clinical professional pre-requisite knowledge and experience.

This program aims to create an inter-professional learning opportunity for current and future faculty to explore learning theories, effective practices in curricular design and assessment and examine attitudes and perceptions of self and other health professions. Historical foundations of pedagogy, andragogy, and strategies to effectively engage with various learning groups; strategies for interdisciplinary communication; and the practical application of skills will be explored. Students will demonstrate their ability to develop and execute educational research, culminating in a dissertation or substantial project and pursue publication that examines an issue in health professions education.

A total of 60 credits are required, including a minimum of 12 dissertation credits

Advancement to Candidacy, dissertation proposal defense, and other milestones are addressed in Appendix D.

Proposed Plan of Study (suggested sequence)

Course Title	Course Description
87 Theoretical Foundations of Teaching and Learning in Nursing **and** Health Professions (3 credits)	This course will provide a foundation in theory and application of essential knowledge for teaching students, consumers and continuing education in a variety of settings. The course content begins with an introduction to teaching and learning and the history of medical education and traditional education. Content will focus on answering the following questions: what is learning; what do learners need to learn; how is learning organized; and who are the learners.

NURS 791 Instructional Strategies and Assessment of Learning in Nursing and Health Professions (3 credits)	This course prepares the student to select and implement instructional strategies and media that are appropriate to the learning style of the learner, the content to be taught, the behavioral objectives of the learning material, and the processes of learning. The course includes both didactic and experiential experiences and provides a strong linkage to techniques for evaluating the impact of various instructional strategies on learning. Attention is given to basic measurement principles of reliability and validity, test construction, assessing skill acquisition and competence, and interpreting results from measures.
MHS 615 Introduction to Statistics for Healthcare Providers (3 credits)	We live in a time exploding with data. Everything from individual wearable technology to community and national profiles, yet few students are prepared with the quantitative skills to analyze and evaluate that data and draw conclusions. This course will present basic statistical methods to a broad range of medical or public health problems. The course will emphasize the use of these methods and the interpretation of results using bio-medical and health sciences applications; healing clinicians move beyond the data to decisions
MHS 680 – New Course The Health Professions Guide to Critical Appraisal and Evidence-Based Practice (3 credits)	Clinical appraisal skills are now as much a part of the clinician's toolbox as the ability to diagnose conditions and prescribe treatments. Critical appraisal skills allow clinicians to prioritize evidence that can improve outcomes. It is critical that inter-professional team members all demonstrate this skill and that faculty are adept at teaching this skill as it is now routinely tested in medical, dental, pharmacy and nursing examination.
MHS 607: Writing for Scholarly Journals (3 Credits)	This course will provide students with a comprehensive overview of the process of writing for scholarly journals. Students will read and analyze articles from a variety of journals, focusing on both the form and content of research articles, case studies, meta-analyses, theoretical articles, and book reviews.
HPE 805 Impact Institute (2 credits)	The Impact Institute is an opportunity for students to engage in face-to-face teaching and learning and develop a deeper understanding of the concepts and skills learned over the four online courses. Additionally, this institute will provide the reflection and intergroup dialogue that is integral to leadership development. Students will present their proposed research project and the potential for impact on their profession. 4-day residency requirement

NURS 794 _ Introduction to the Faculty Role (3 credits)	This elective, online course is designed to offer nursing graduate students opportunities to consider various aspects of the nursing faculty role within the contexts of academic institutions and nursing programs in which faculty function. Role preparation, faculty job market, various avenues for entry, and the teaching, research/scholarship, and service aspects of the role are addressed. Various external influences such as accreditation, faculty shortage, and national initiatives will be explored.
Course Title	Course Description
NRSG 793 Introduction to Teaching with Technology (3 credits)	This course will provide a foundation for creating and teaching in online learning environments. The focus areas are pedagogy, infrastructure, design, and teaching online. Topics important for online learning will include re-conceptualizing courses from the traditional classroom to online environments, designing, teaching, and managing online and hybrid learning environments, interacting with learner's online, assessing student learning, and evaluating courses**.**
NURS 792 Practicum in Teaching (3 credits)	Theoretical knowledge acquired in concepts and strategies courses will be synthesized through seminars and a practicum in an educational setting. Seminars will focus on issues related to the teaching of nursing and health professional. The practicum is a precepted experience with a master teacher selected by the faculty facilitator. Individual aspects and deliverables of the practicum experience will be negotiated between the student, preceptor, and faculty facilitator in a learning contract.
SOWK 826 Introduction to Qualitative Research (3 credits)	This doctoral course is designed to introduce students to the history, principles, and practice of qualitative research. The course will cover the theoretical and multidisciplinary origins of the methods as well as the application of qualitative methods germane to health professional practice, programs, and policy. This course is an experiential course embedded with the core qualitative methods of observation, interviews and document analysis (including ethnography, narrative analysis text or discourse analysis, visual analysis, case study, grounded theory, oral/life history, focus groups, phenomenology, and action research.
SOWK 807 Quantitative Data Analysis (3 credits)	The primary aim of this course is to provide students with a foundation in multivariate data analytic

	techniques, including advanced linear regression, logistic regression, and analysis of variance. This course is designed as an applied statistics course, meaning that we will move beyond abstract theoretical discussions and focus on the applications of statistical theory and knowledge to real-world data. The course assumes a baseline understanding of introductory statistics and multiple regression.
NRSG 796 Introduction to Teaching Nursing in the Clinical Setting (3 credits)	The purpose of this online elective course is to introduce registered nurses to ways of being safe, efficient, and effective clinical educators. Learning the key role of the clinical educator is achieved through learning and applying concepts to the clinical setting. Content will focus on the foundations of clinical education and the role and responsibilities of the clinical educator. Models that inform clinical learning and practice are examined. Methods and strategies of organizing the clinical learning experience to enhance the desired outcomes are identified. Various methods of student assessment are examined, and a feedback loop to inform and protect the student-patient-faculty triad will be identified. Discussions and case studies will provide opportunities to apply content.
HPE 840 Research Methods in Educational Research (3 credits)	Students will search, critique, compare and contrast the highest quality educational research using an approach consistent with best practices in educational research design and implementation. At the conclusion of this course, the student will be assigned a committee chair, will be allowed to select two qualified committee members. They will submit their proposed research and methods for consideration to progress to the third year. Students must complete an oral presentation and formal examination to progress.
HPE 850 Advanced Teaching Practicum (3 credits)	In consultation with a master teacher selected by the faculty facilitator, the 3rd year Ph.D. candidate will mentor a second year NURS 792 student. Individual aspects and deliverables of the practicum experience will be negotiated between the student, preceptor, and faculty facilitator in a learning contract.
HPE 875 Leadership in Higher Education New Course (3 credits)	This course is designed to create a community of scholar-practitioners working together to explore a variety of constructs, principles, and models of leadership and to apply that learning to current, and future leadership experiences and opportunities. The course encourages a scholar-practitioner analysis of these experiences/opportunities with focused application to academic and professional goals of Ph.D. students. Students are expected to draw on learning from prior life experiences, and new learning acquired

	in this course to complete the course activities and produce products that focus on context-based problems in urban educational organizations (or others) and demonstrate evidenced-based leadership strategies for leveraging change.
HPE 851 Doctoral Dissertation Research Seminar (6 credits)	Candidates will work with committee members to advance research and progress of project, dissertation and prepare for publication throughout the semester online and attend a 4-day residency requirement.
HPE 860 *Advanced Assessment-Evaluating Educational Programs* (3 credits)	This course provides advanced concepts regarding the assessment, design, and implementation of evaluations of educational programs. Topics focus on all aspects of assessment design and implementation of educational evaluations, including considering the clinical context, audience, and purposes for evaluations, developing an evaluation plan, preparing the evaluation design, designing evaluation instruments and measures, collecting, analyzing, and reporting evaluation data, and adhering to professional ethical principles. Students will be expected to apply research methods, conduct data analysis using Microsoft Excel, SPSS, or other statistical software to complete some assignments. There will be written assignments and a final project that requires each student to design an evaluation proposal on an educational topic of personal and professional interest.
HPE 899 (6 credits)	Candidates will have completed HPE 851 proposal, literature review, methods, data analysis at this juncture and will continue to work with committee members to advance research and progress of project, dissertation and prepare for publication. Dissertation Boot camp, Defense and publication.

Implementation and Management

The proposed Ph.D. in Health Professions Education will be coordinated and administered through the Graduate School at UMB. The Director of the Center for Teaching and Learning will serve as the program mentor and director at UMB, will work collaboratively with faculty to determine appropriate and valid assessment of doctoral candidates and review and approve all committee members The Ph.D. will adopt UMB's Graduate School academic, administrative, and financial structure recently added for the growing number of online degree and certificate programs. For the graduate school courses offered at UMB, faculty curriculum designers and those teaching the course will be reimbursed directly by the Graduate School as agreed to in MOUs between the Graduate School and individual School Deans. Students must adhere to all Graduate School policies (see appendix).

Doctoral Program Standards

Students must meet all Doctoral Program requirements for satisfactory academic performance and progress as well as UMGBS requirements. Students are advised to be familiar with all handbooks, requirements, and standards of their Doctoral Program.

- Doctoral Programs may have requirements that are in addition to the UMBGS standards listed above. Examples of additional Graduate Program requirements are laboratory rotations, journal clubs, presentation of papers/abstracts, and publication(s).
- Doctoral Programs may have more stringent standards than the UMBGS. Examples of more stringent standards are higher than 3.0 minimum GPA required by the UMBGS, advancement to candidacy within four years instead of five, and program completion within seven instead of nine years.

The student is expected to meet the most stringent standard for each requirement, whether it is a standard of the UMGBS or the Doctoral Program. Failure to meet any of the UMGBS and Doctoral Program standards of academic performance and progress subjects a student to automatic academic probation and the possibility of dismissal.

UMB will be responsible for the administrative needs of all students enrolled in the Ph.D. in Health Professions Education in accordance with UMB policies and procedures: ensuring that all course offerings, are entered in the UMB student registration system; ensuring that all Ph.D. course offerings appear correctly on student transcripts and student records; and ensuring payment of tuition at the applicable per-credit tuition rate. Accordingly, students enrolled in the Ph.D. shall pay tuition and fees; receive grades and academic credit; and shall be subject to the rules, policies, practices, and regulations (pertinent to students) of UMB when enrolled in any of UMB's courses. The appropriate faculty have been identified, and additional guest lectures will be identified at a later time.

Discuss how general education requirements will be met, if applicable.
Not applicable.
Identify any specialized accreditation or graduate certification requirements
Not applicable.

If contracting with another institution, provide a copy of the contract
Not applicable

H. Adequacy of articulation
Not applicable.

I. Adequacy of faculty resources

The Ph.D. in Health Professions Education builds on the success of the Institute for Educators led by Louise Jenkins Ph.D., Since its inception in 2004, nearly 800 graduate and post-graduate students have taken academic courses in the Institute for Educators' Maryland Higher Education Commission approved Teaching in Nursing and Health Professions Certificate. This 12-credit, post-graduate certificate prepares nurses and other health professionals with graduate degrees for teaching roles and is incorporated into the Health Professions Education Ph.D.

Faculty Member Name	Terminal Degree	Full-Time or Part-Time	Courses Taught
Susan L. Bindon DNP, RN-BC, CNE Assistant Professor	DNP	Full-time	NURS 787 Theoretical Foundations of Teaching and Learning in Nursing and Health Professions 3 credits Elective NRSG-Introduction to Teaching Nursing in the Clinical Setting
Louise Jenkins Ph.D., RN, FAHA, ANEF, Professor and Director, Institute for Educators	Ph.D.	Full-time	NURS 791 Instructional Strategies and Assessment of Learning in Nursing and Health Professions 3 credits Elective NURSG 794 Introduction to the Faculty Role
Carol O'Neil, Ph.D., RN, CNE, Associate Professor	PhD	Full-time	NRSG 793 Introduction to Teaching with Technology NURS 792 Practicum in Teaching
Larry Magder	PhD	Full-time	MHS 615 Introduction to Statistics for Healthcare Providers
Larisa Odessky	PharmD	Full-time	MHS 680 New Course The Health Professionals Guide to Critical Appraisal and Evidence-Based Practice (3 credits)

Isabel May Ph.D. Director of the UMB Writing Center	Ph.D.	Full-time	MHS 607: Writing for Scholarly Journals (3 Credits)
*TBA Program Director and the Director of the Center for Teaching and Learning	Ph.D.	Full-time	HPE 805- Impact Institute (2 credits) *HPE 840* Research Methods in Educational Research (3 credits) HPE 850-Advanced Teaching Practicum HPE 873 Elective-Advanced Assessment Evaluating Educational Programs
Roger Ward EdD, JD Flavius Lilly Ph.D.	EDd/Ph.D.	Full-time	HPE 875 Elective-Leadership in Higher Education
Corey Shdaimah Ph.D., L.L.M	Ph.D.	Full-time	SOWK 826 Introduction to Qualitative Research
Charlotte Bright Ph.D. MSW Associate Professor	Ph.D.	Full-time	SOWK 807 Data Analysis II
Ph.D. Committee and Chair			HPE 851 Research Seminar HPE 880 Dissertation Defense

J. Adequacy of library resources

The University of Maryland, Baltimore's Health Sciences and Humans Services Library (HS/HSL) collection contain more than 30,000 electronic journals, 162 current print journals, approximately 170,000 books, and 6,000 electronic books. Students can access the electronic resources offered on the library website by logging in with their University ID number. The library serves as the regional medical library for ten southeastern states as part of the National Library of Medicines National Network of Libraries of Medicine. In addition to the library services and collections, the building also houses computing services. Faculty librarians are dedicated to providing direct service to students. They use subject expertise to develop online resources and provide in-person consultations.

The HS/HSL is one of the largest health sciences libraries in the United States with a track-record of user-centered innovative services and programs. The library consists of 57 employees including 27 faculty librarians. The attractive and vibrant facility, which

opened in 1998, serves as a hub for collaboration and learning with resources, programs, and tools that promote discovery, creativity, and innovation. With wireless connectivity throughout the building, the HS/HSL has 45 group study rooms, three computer classrooms, an Innovation Space which includes 3D printers; a presentation and practice studio, art gallery, and multiple technology-enhanced meeting spaces. Through the HS/HSL's website (www.hshsl.umaryland.edu,) the UMB community has access to a full range of resources and services.

The HS/HSL supports the University's students, faculty, and staff members in the schools of dentistry, law, medicine, nursing, pharmacy, and social work; the Graduate School; the University of Maryland Medical Center; and other affiliated institutions. Research Connection, the library's suite of research services, is available for all programs on campus and includes individual research consultations, a systematic review service, research impact assessment, reference assistance, and more. For over 30 years, the HS/HSL has provided liaison services, in which faculty librarians are assigned to work with specific user communities. Faculty librarians have many years of instructional experience in the classroom, in the community, and the online environment. In FY16, faculty librarians reached 4,131 faculty, staff and students through online and in-person instructional sessions offered through the curriculum and in library-sponsored workshops.

In FY16, the HS/HSL licensed 116 databases, 4,524 journals, 18,018 e-books, and maintained a print collection of 360,104 volumes. One hundred percent of the current journal subscriptions are available electronically. Through its interlibrary loan and document delivery service, library staff can acquire articles and other resources not available through the library's collections. These are secured through local, regional, and national networks including the University System of Maryland and Affiliated Institutions, the National Library of Medicine's DOCLINE service, and OCLC, among others.

The HS/HSL is also home to the National Network of Libraries of Medicine/Southeastern Atlantic Region (NNLM/SEA), whose mission is to advance the progress of medicine and improve the public health by providing all U.S. health professionals with equal access to biomedical information and improve the public's access to information to enable them to make informed decisions about their health. With only eight regions in the U.S. designated as regional medical libraries under contract to the National Library of Medicine at the National Institutes of Health, the Southeastern/Atlantic Region serves ten southeastern states, Puerto Rico, the U.S. Virgin Islands, and the District of Columbia. The HS/HSL has held this competitive and prestigious designation for over 30 years.

K. Adequacy of physical facilities, infrastructure, and instructional equipment

UMB's 71-acre research and technology complex encompasses 67 buildings in West Baltimore near the Inner Harbor. The faculty has offices provided within their respective departments, and the Graduate School has identified office space to house the program director and instructional technology personnel. UMB has adequate facilities, infrastructure, and equipment to support any distance learning needs of the Ph.D. Program. Students will have full access to the computing facilities at UMB. Students will be provided with UMB e-mail and library accounts and will have complete journal searching ability via PubMed. UMB possesses computing facilities that include a networked computing environment for support of a broad range of information

technology functions, including basic research, clinical research, patient information, and general office management.

L. Adequacy of financial resources with documentation

No new general funds will be required for implementation of the proposed Ph.D. The degree will be coordinated and administered fully through the Graduate School including identifying a program director who is directly affiliated with the Graduate School. Tuition will be administered through the Graduate School, and student tuition payment is in addition to that required of any individual professional school at UMB. As shown in the Budget Table provided in Appendix B this certificate is expected to be self-supported.

M. Adequacy of provisions for evaluation of the program

Students will have the opportunity to evaluate courses and faculty through a standard evaluation of every course. Formal assessment planning is already in place throughout UMB Schools, including the Graduate School. Our approach includes ensuring that student learning is in alignment with course learning outcomes, alignment of mission at institutional and program levels, alignment of the mission with learning outcomes, then program outcomes with the curriculum, flowing down to course outcomes and the assignments. Assessment activities emphasize analysis of results and feedback loops for continuous improvement. The additional evaluation includes tracking of student retention, grade distributions, and cost-effectiveness, with regular academic program reviews considering these factors.

The program will participate in the Graduate School Program Review process detailed below:

The Council of Graduate Schools[1] notes that graduate program review has five general purposes: quality assurance, quality improvement, accountability, identification of strategies for improvement, and provide the institution with information for prioritization of resources. Reviews share specific key characteristics:

1. Program review is evaluative, not just descriptive. It requires academic judgments about the quality of the program and the adequacy of its resources. It goes beyond the assessment of minimum standards to subjective evaluations of quality by peers and recognized experts in the discipline or field.
2. Review of graduate programs is forward-looking; it is directed toward improvement of the program, not merely assessment of its current status. It makes specific recommendations for future changes, as part of the long-range plans of the institution, the department, and other coordinating units.
3. Programs being reviewed are scrutinized on the bases of academic strengths and weaknesses, not on their ability to produce funds for the institution or generate development for the state. Finances and organizational issues are relevant, but only as they affect the quality of the academic program.
4. Program review is an objective process. It asks graduate programs to engage in self-studies that assess, as objectively as possible, their programs. It brings in

[1] Assessment and Review of Graduate Programs: A Policy Statement. 2005. Washington, DC: Council of Graduate Schools.

faculty from other institutions to review the self-studies and to make their evaluations.

5. Graduate program review is an independent process, distinct from any other review. Data collection and parts of the self-study may often serve some review purposes. However, to be effective, graduate program review must be a unique, identifiable process that stands on its own, draws its own set of conclusions, and directs its recommendations to the only individuals with the power to improve graduate programs: the faculty and administrators of the institution.
6. Program review results in action. Based on the reviewers' comments and recommendations, as well as the program faculty's response to the review report, the institution develops and agrees on a plan to implement the desired changes according to a specific timetable.

Incorporating these characteristics, successful graduate program review answers the following questions:

Is the program advancing the state of the discipline?
Is its teaching and training of students effective?
Does the program meet the institution's goals?
How do experts in the field assess it?

At UMB Graduate Program Review includes an internal self-study and an on-site review by an external site team.

N. Consistency with the State's minority student achievement goals

A key feature of UMB's mission and strategic planning involves respecting, valuing and achieving diversity. The Strategic Plan states: diversity represents a core value, which is defined as being "committed to a culture that is enriched by diversity, in the broadest sense, in its thoughts, actions, and leadership" (University of Maryland, Baltimore, n.d.). The State also has a goal of expanding educational opportunities for minority and educationally disadvantaged students.

The proposed Ph.D. aims to address both UMB's and the State's cultural diversity goals. First, the delivery of the majority of the courses in the program through the use of distance learning technology will enhance student access, as it expands access and success for learners from diverse communities. Essentially, distance learning is quickly becoming the educational opportunity for students who may not or would not be able to participate in a traditional in-person college education. For rural and isolated communities, distance learning can be the vehicle that conquers geography and space between teachers and students. The emergence of so-called "virtual universities" has had more success in attracting diverse populations compared to traditional colleges. Ibarra (1999) asserts that historically underrepresented groups are highly attracted to internet-based degrees that embrace the core values of social change and community engagement.

The second manner in which the new Ph.D. addresses diversity goals is that distance learning not only achieves "access," but can also help ensure "success," as the technology of distance learning meets the needs of various learners and allows for differentiated instruction. Essentially, with the proper use of its varied technology, distance learning can address the needs of all populations, creating an environment where students can thrive. In contrast with many universities that have a predominance of a particular and preferred learning environment grounded in outmoded ideas about

one-size fits all educational pipelines, the varied types of interactions common in distance education embrace a shift from passive to active learning and from competition to collaboration. Furthermore, different learning styles and cultures can be accommodated more easily because useful collaborative learning values diversity (Palloff & Pratt, 2005).

Additionally, UMB realizes that it must not only embrace and celebrate diversity but also provide opportunities for students to develop faculty who can design curricula to promote cultural competence and intercultural leadership. The Ph.D. uses an interdisciplinary approach to positively influence the climate for diversity, which includes consideration of external (i.e., governmental/political forces and sociohistorical forces) and internal (i.e., historical legacy of inclusion or exclusion, compositional diversity, psychological climate, behavioral dimension, organizational/structural diversity) factors deemed necessary to understand and shape campus environments (Hurtado, Milem, Clayton-Pedersen, & Allen, 1999; Milem, Chang, & Antonio, 2005).

O. Relationship to low productivity programs identified by the Commission

The proposed new Ph.D. program is not directly related to an identified low productivity program identified by the Maryland Higher Education Commission.

P. Distance education principles of good practice

<u>The context of Online Education at UMB</u>

As the State's public health, law, and human services university, the mission of UMB is to excel at professional and graduate education, research, patient care, and public service, and to educate leaders in health care delivery, biomedical science, global health, social work, and the law. Also, UMB emphasizes interdisciplinary education in an atmosphere that explicitly values civility, diversity, collaboration, and accountability. UMB expects to achieve its mission in educational excellence and to be competitive; the Graduate School has designed and offered online degree programs that respond to the following changes occurring in higher education (Picciano, Seaman, & Allen, 2010):

- Education Pipeline. The education pipeline is now seeing inputs at every level with a highly diverse prospective student pool. Prospective students are typically working adults who demand part-time and non-residential educational opportunities. Results of the educational experience are becoming ever more outcomes-based.
- Changing Demographics. Data indicate a shift from the traditional-aged student (i.e., 18-22-year old, full-time resident) to older students studying part-time.
- Technology Shift. Online delivery is far outpacing traditional forms of delivery. From 2002 to 2008, online enrollments grew at an annual compound rate of 19% vs. 1.5% for all of higher education. By the fall of 2008, 25% (4.6 million) of all students took at least one online course. There is a growing acceptance that online education is as good as or better than traditional face-to-face delivery models. It is estimated that by 2020, half of all learning may be online.
- The growth of Mobile Technologies. Mobile technologies and miniaturization are changing the computing environment and the educational delivery paradigm.

Technologies like netbooks, e-Readers, iPhones, and iPads have the potential to revolutionize the delivery space and to provide anywhere, anytime learning.

- Web 2.0 Revolution. Other technologies that are already figuring widely into the future of education are part of the Web 2.0 revolution. The use of a variety of technologies is disaggregating the educational experience into 'the cloud.' Many of the technologies for the future, like blogs, wikis, podcasts, video, social networking, and social media, virtual worlds, mobile learning, and Personal Learning environments, will have profound effects on the future learning landscape.

Essentially, online education represents a strategy that can address the restrictions of college courses that are delivered onsite. Online learning seeks to expand knowledge beyond the walls of the campus and can reach millions of new learners who could never put their lives on hold to complete a certificate or degree mainly delivered or solely on a college campus. Online programs also can respond to individual student learning needs and styles in ways that cannot be duplicated in the face-to-face classroom. Significant determinants of successful online programs include 1) course design that incorporates best practices, 2) quality faculty who can engage students in the material, and 3) responsible academic oversight. All three of these determinants are present in this proposal.

Ensuring Effective Instruction

Based on Quality Matters standards, at UMB we have deployed a rubric that outlines best practices for distance education - this rubric helps faculty and instructional designers develop the courses, assess the readiness of the course and ensure that the online courses are instructional and pedagogically sound. The best practices are grounded in research, a proven synthesis of strategies, activities, design techniques, and organizational items that have proven successful in higher education. The specific domains of this checklist are as follows:

- Course overview and introduction to the students
- Course organization and design
- Learning outcomes, objectives, learning activity, and assessment alignment
- Instructional materials
- Learner communication, interaction, engagement and collaboration
- Assessment and evaluation (measurement)
- Course Technology
- Learner support

The Learning Management Platform UMB utilizes and provides IT support for is the Blackboard Learning Management System for online course delivery. Blackboard has Collaborate conferencing software that will be used for our synchronous live activities, i.e., orientation, face-to-face class sessions, and recurring webinars. Additionally, the Distance Learning Team has available to them the use of a video recorder to record lectures, webcams, and an interactive smart board. We will also use video and Camtasia software for screen lecture capture.

Instructional Design Team

The following individuals from the Instructional Design team have been assigned to direct the distance education strategy for the four additional PBC programs:

Mary Jo Bondy DHEd, PA-C | Assistant Dean, Academic Programs
Dr. Bondy administratively oversees three academic programs and the office for Academic Innovation and Distance Education (AIDE). Dr. Bondy also serves as the UMB representative to the University of Maryland System Academic Transformation Advisory Council. As a practicing clinician and accomplished health educator, Dr. Bondy is passionate about elevating health in underserved populations. Dr. Bondy is a recognized master teacher, education leader, and innovator. She has expertise in online education policy, curricular design, and program assessment.
Kevin Engler, MA | Instructional and Curriculum Designer
Mr. Engler holds a Masters of Arts degree in Instructional Design. Mr. Engler provides instructional design, audio-visual support, and faculty training in the use of instructional technologies. He is responsible for the overall pedagogy, planning, and designing of course content and assessments for distance education courses in the program. Mr. Engler is knowledgeable in adult learning theory, distance education pedagogical techniques, course development planning, and process management. Mr. Engler is trained and certified in the Quality Matters methodology and the ADDIE approach to course design. He has experience and background in writing instructional objectives that utilize Bloom's Taxonomy.
Erin Hagar, MA/MFA | Instructional and Curriculum Designer
Ms. Hagar taught Spanish at the college level and has worked in instructional and curriculum design for colleges and universities since 2000. She previously worked at Montgomery Community College and Johns Hopkins University, helping faculty incorporate new pedagogical practices and technologies into their face-to-face and online courses. Her areas of expertise include faculty development and training, online course design using the Quality Matters standards, and authentic activities and assessments. She is responsible for the overall pedagogy, planning, and designing of course content and assessments for distance education courses in the program.
Sharon Gillooly MA | Senior Media Production Specialist
Ms. Gillooly leads media production for the AIDE team. Her primary focus is to produce videos that support academic instruction. After a long career in documentary television, she completed a Master's Certificate in Online Instructional Development from Florida State University where her work focused on instructional design and emerging technologies. Ms. Gillooly is especially interested in the use of media to enhance learning.
Collectively, the distance learning team will provide the following services to ensure that best pedagogical practices are used to train and support the most effective presentation of course content:

- Written instructions accompanied by training videos will be developed to teach the faculty how to use the learning management system.
- A manual for the faculty regarding principles of good practice and the pedagogy of distance education.
- Provide timely support to the faculty in the use of the technology and troubleshoot any problems that might arise during instruction.
- Work with faculty to design and develop courses, monitor the delivery of the course, and assess and revise the course for future offerings.

Course development and curricular oversight will be accomplished in partnership with a program director, teaching faculty, and the instructional design team, who will ensure course materials follow best practices in online education and adult learning theory. Collectively, they will produce the following materials:

- Course-level outcomes and module level objectives
- Course storyboards that will serve as planning documents for new courses that outline objectives, discussion prompt and learning activities, and resources (e.g., articles, websites, online videos)
- Assignments and assessments that measure student performance and clear instructions for completing them
- Grading Rubrics
- Course syllabus

Supporting Students in Distance Education

All of the courses for the Ph.D. in Health Professions Education will have an online component, and two will be in person. We realize that the key to the success of the online courses is dependent on a) students knowing upfront the assumptions, requirements, and responsibilities of taking an online course, 2) the ability of students to have the background, knowledge, and technical skills to undertake an online program; and 3) their having access to academic and technical support services to support their online activities. Accordingly, we will provide the following services to support the students in accessing distance learning technology:

- Communicate to students the nature of online learning, including their requirements, roles and responsibilities, and access to support services. We have also prepared a short questionnaire for students that will help them decide whether online learning is right for them. All of our advertising, recruiting, and admissions materials shall clearly and accurately represent the program and the services available.
- Ensure that enrolled students shall have reasonable and adequate access to the range of student services to support their learning.
- Ensure that accepted students will have the background, knowledge, and technical skills needed to undertake the program.
- Make available the library's services to students so that they can have access to research databases, the online catalog of books and media, chat with or e-mail a Librarian, electronic interlibrary loan, and more.

Evaluation and Assessment of Online Courses

We will adhere to a quality improvement model for assuring the continuous quality of the online courses. The process will involve the following steps:

1. Assessment of course readiness as measured by our quality indicators of best practices (including assessment of faculty readiness)
2. Monitoring of course delivery as assessed by the instructional designers with the use of our "course evaluation rubric."
3. Obtain feedback from the faculty, students and instructional designers.
4. Analysis of feedback as performed by the Distance Learning Committee.
5. Institute course revisions based on comments by the Distance Learning Committee.

Finally, to ensure the sustainability of the distance learning program, the Academic Affairs Office at UMB affirms the following:

- UMB Policies for faculty evaluation includes appropriate consideration of teaching and scholarly activities related to programs offered through distance learning.
- Commitment to ongoing support, both financial and technical, and to a continuation of the program for a period sufficient to enable students to complete a certificate.

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Appendix A. Sample One- Plan of Study

Year	Semester	Course	Credit
1	Fall	NURS 787	3
1	Fall	NURS 791	3
1	Spring	MHS 615	3
1	Spring	MHS 680	3
1	Summer	MHS 607:	3
1	Summer	HPE 805 (on-campus requirement)	3
			Total 18

Year	Semester	Course	Credit
2	Fall	NURS 794	3
2	Fall	NURS 793	3
2	Spring	NURS 792	3
2	Spring	HPE 840	3
2	Summer	SOWK 807	3
2	Summer	HPE 860	3
			Total 18

Students who satisfactorily complete 36 credits of coursework from year 1 and 2 who do not wish or are unable to gain approval of research proposal may graduate with MS.

*Committee Assigned, Formal Evaluation for consideration for Progression

Year	Semester	Course	Credit
3	Fall	SOWK 826	3
3	Fall	HPE 850	3
3	Spring	HPE 851	6
3	Spring	HPE 840	3
3	Summer	HPE 880 (on-campus requirement)	6
3	Summer	HPE 875	3
			Total 24

Appendix B: Budget

Expenditure Categories	**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Year 5**
Faculty					
Faculty Program Director	$ 20,000.00	$ 20,000.00	$ 25,000.00	$ 30,000.00	$ 30,000.00
Instructional Faculty	$ 30,000.00	$ 60,000.00	$ 90,000.00	$ 100,000.00	$ 100,000.00
Total Benefits					
Administrative	**$ 53,000.00**	53,000	53,000	53,000	53,000
FTE	1.0	1.0	1.0	1.0	1.0
Total Benefits					
Equipment	$ -	$ -	$ -	$ -	$ -
Library	$ -	$ -	$ -	$ -	$ -
New or Renovated Space	$ -	$ -	$ -	$ -	$ -
Curriculum Development and Maintenance	$ 22,000.00	$ 25,000.00	$ 25,000.00	$ 25,000.00	$ 25,000.00
Other Expenses Professional Development	$ 10,000.00	$ 12,000.00	$ 22,000.00	$ 22,000.00	$ 22,000.00
Contingency Funding	$ -	$ -	$ -	$ -	$ -
TOTAL					
Resource Categories					
Reallocated Funds	$ -	$ -	$ -	$ -	$ -
Total Tuition/Fees Revenue	61,020	125,712	216,000	216,000	216,000
Number of F/T Students					
Annual Tuition/Fee Rate	$ -	$ -	$ -	$ -	$ -
Number of P/T Students	6	12	18	18	18
Credit Hour Rate	$ 565.00	$ 582.00	$ 600.00	$ 618.00	$ 636.00
Annual Credit Hour per P/T Student	18	18	18	18	18
Grants, Contracts & Other External Sources	$ 100,000	$ -	$ -	$ -	$ -

Appendix C

Graduate School Policies
Purpose: Satisfactory academic performance and progress within the University of Maryland Baltimore's doctor of philosophy (Ph.D.) programs is a shared responsibility...

of the University of Maryland Baltimore Graduate School (UMBGS), the Doctoral Programs, and graduate students. This policy specifies the elements of satisfactory academic performance and progress for students in UMBGS Ph.D. programs.

UMBGS Standards

- After admission to a doctoral program, each student must continue a course of study and must register fall and spring semesters unless on an approved leave of Absence. Failure to comply with the requirement to register every semester will be taken as evidence that the student has terminated his or her program and admission status in the Graduate School.
- Students accepted provisionally will have provisional admission status removed only after all provisions have been satisfied and the student has fulfilled all other UMBGS and Doctoral Program requirements for non-provisional admission. This determination will be made by the Graduate Program Director and the UMBGS Academic Coordinator.
- Graduate students must maintain a minimum, cumulative grade point average (GPA) of 3.0 on a 4.0 scale.
- UMBGS does not impose a uniform protocol for preliminary, qualifying, or comprehensive examinations. Admission to candidacy occurs after fulfilling Doctoral Program requirements.
- Students must establish and maintain a professional relationship with a faculty research advisor. The advisor must hold Regular membership in the Graduate Faculty with the appropriate knowledge and expertise to serve as research advisor.
- Students must demonstrate the ability to conduct independent research by developing, presenting, and defending an original dissertation on a topic approved by the Doctoral Program. Evidence of completion of this requirement is a submission of the committee approved dissertation to the Graduate School.
- UMBGS requires that students take and pass a doctoral examination of the dissertation comprised of an open presentation and a formal examination. The formal examination can only be attempted twice. A failure on the second attempt means the Ph.D. degree is forfeited.
- Students must be admitted to candidacy within five academic years of the first term of enrollment in the Doctoral Program and at least two full sequential semesters or sessions (spring, summer, or fall) before graduation. All degree requirements, including the final examination of the dissertation, must be completed within four years of admission to candidacy and no more than nine years after admission into the Doctoral Program.
- Students are expected to meet the highest standards of academic integrity. Plagiarism, fabrication, falsification, cheating, and other acts of academic

dishonesty, or abetting the academic dishonesty of another will result in sanctions and may lead to academic dismissal.

Appendix D

Health Profession Education MS/ Ph.D. Mentors, Milestones and Progressions
The University of Maryland Baltimore intends to increase the number of health professionals who are prepared to perform rigorous graduate level teaching and learning research on campus. The creation of the new Center for Teaching and Learning will create a central location on campus for MS/ Ph.D. candidates to work with mentors and together to advance the scholarship of teaching and learning. The Ph.D. program candidates will be initially mentored by health profession faculty and by the Director of the UMB Teaching and Learning Center. Upon completion of the first-year coursework, a research interest proposal will be submitted. This document will include elements of the following:

Ph.D. proposals should be approximately 1,000 words in length.

Title: A short, indicative title Introduction:

Give a brief introduction to the document and your proposed study
Rationale for the research project: This might include an outline of the question/debate/phenomenon of interest, and the context(s) and a situation in which you think the research will take place.

Issues and initial research question: What is the research problem or issues you intend to investigate?
Indicate what you think this is the best methodology for your proposed study. If you are planning to do empirical work, so please give some indication of what your methods might be - for example quantitative (surveys, statistics, etc.); qualitative (interviews, observations, diaries, etc.) or mixed methods.

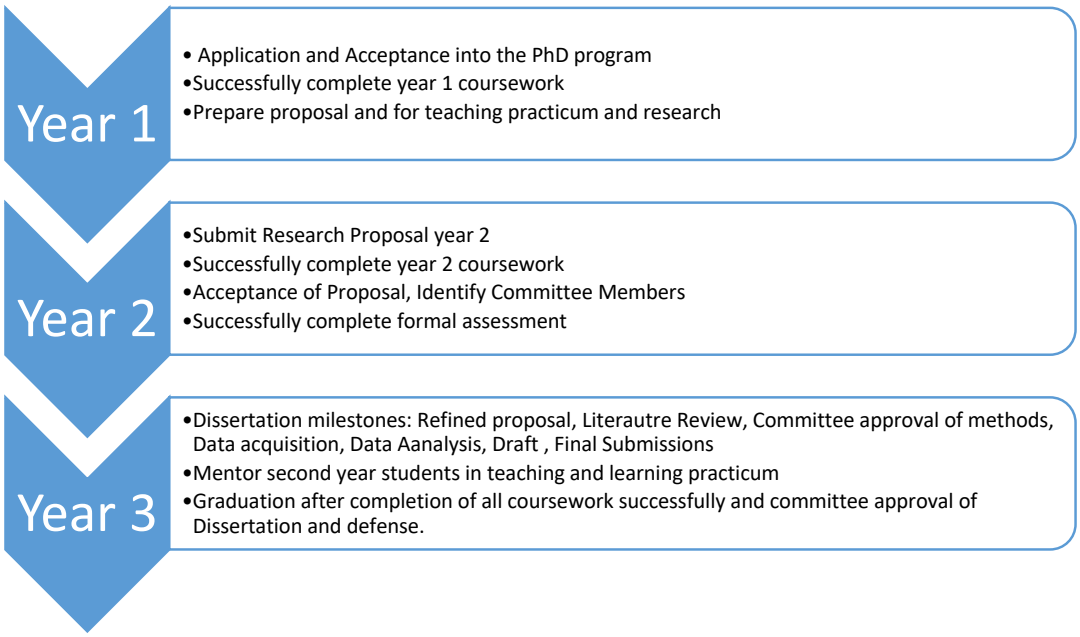
Expected outcomes and impact: how do you think the research might add to existing knowledge; what might it enable organizations or interested parties to do differently?

Timetable: What is your initial estimation of the timetable of the dissertation? When will each of the key stages start and finish (refining proposal; literature review; developing research methods; fieldwork; analysis; writing the draft; final submission). There are likely to overlaps between the stages.

References: This does not have to be comprehensive, but you are illustrating the range of sources you might use in your research.

3 potential committee members including a sponsor who is an expert in the interest of your research to serve as the principal mentor for the dissertation phase.
Students who are unable to gain approval for their research proposal at the conclusion of the second year 36 credits will be advised to earn the MS degree in Health Profession education.

Progressions Diagram



UNIVERSITY SYSTEM of MARYLAND

BOARD OF REGENTS

SUMMARY OF ITEM FOR ACTION, INFORMATION, OR DISCUSSION

TOPIC: University of Maryland, College Park: Bachelor of Arts in Philosophy, Politics and Economics

COMMITTEE: Education Policy and Student Life

DATE OF COMMITTEE MEETING: Tuesday, January 15, 2019

SUMMARY: The University of Maryland, College Park proposes to offer a Bachelor of Arts degree program in Philosophy, Politics, and Economics (PPE). The questions that PPE poses are distinct from those that are addressed in economics, political science, and public policy -- they are fundamentally normative questions (e.g., concerning justice), traditionally in the domain of moral and political philosophy. However, PPE as a discipline approaches these moral and ethical questions through the tools and methods of economics and political science, a strategy quite distinct from a traditional major in philosophy. PPE as an undergraduate Arts & Sciences major is already well-established at several major universities across the world and is emerging as a separate field of scholarly inquiry.

The PPE program is intended to provide another avenue for students who have an interest in economics or in government and politics, two of the largest majors at UMD, but also in the moral and ethical questions that arise out of them. The existing, more traditional philosophy program has about 90 majors, and UMD anticipates comparable enrollment in the PPE major. The curriculum will consist of courses already offered in several departments, along with a suite of three "anchor" courses specifically offered by the Department of Philosophy. Students majoring in PPE will be well-suited for careers in law, government, business, and non-profits/NGOs.

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 Education Policy and Student Life Committee recommend that the Board of Regents approve the proposal from University of Maryland, College Park to offer the Bachelor of Arts in Philosophy, Politics and Economics.

COMMITTEE ACTION:		DATE: January 15, 2019
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

December 5, 2018

Chancellor Robert L. Caret
University System of Maryland
3300 Metzerott Road
Adelphi, MD 20783

Dear Chancellor Caret:

I am writing to request approval for a new Bachelor of Arts program in Philosophy, Politics, and Economics. 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, 2018. 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
Bonnie Thornton Dill, Dean, College of Arts and Humanities

UNIVERSITY SYSTEM OF MARYLAND INSTITUTION PROPOSAL FOR

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

University of Maryland, College Park
Institution Submitting Proposal

Philosophy, Politics, and Economics
Title of Proposed Program

Bachelor of Arts	**Fall 2019**
Award to be Offered	Projected Implementation Date
	38.0104
Proposed HEGIS Code	Proposed CIP Code
Department of Philosophy	Samuel Kerstein
Department in which program will be located	Department Contact
301-405-3119	kersetein@umd.edu
Contact Phone Number	Contact E-Mail Address
Signature of President or Designee	Date

11-27-2018

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

Description.
The proposed Bachelor of Arts in Philosophy, Politics, and Economics (PPE) is an interdisciplinary undergraduate program to be offered within the department of Philosophy. This major will further several educational objectives from the University of Maryland's Mission Statement and Strategic Plan. Foremost of these is the goal to "expand students' opportunities to develop skills and habits of mind to tackle the world's toughest challenges." The questions that PPE poses are distinct from those that are addressed in economics, political science, and public policy -- they are fundamentally normative questions (e.g., concerning justice), traditionally in the domain of moral and political philosophy. However, PPE as a discipline approaches these moral and ethical questions through the tools and methods of economics and political science, a strategy quite distinct from a traditional major in philosophy.

PPE as an undergraduate Arts & Sciences major is already well-established at several major universities across the world. Though originally started at Oxford University in 1920, several top U.S. universities now have PPE programs, including the Universities of Arizona, Duke, Michigan, North Carolina, Notre Dame, Pennsylvania, Pittsburgh, Rutgers, Tulane, and Virginia. Beyond undergraduate education, PPE is becoming established as a separate field of scholarly inquiry. The PPE Society held its first annual meeting in March of 2017 in New Orleans, LA. The journal Politics, Philosophy, & Economics ran its first issue in 2002.

Relation to Strategic Goals. The proposed PPE major will further several undergraduate education objectives from the University of Maryland's Mission Statement and Strategic Plan. It will truly be an interdisciplinary program, combining different fields of study across the social sciences and humanities in a novel way. It will thus promote the University's goal (2016 Strategic Plan Update, 25) of adding new, interdisciplinary fields for undergraduates to major in. Not only will students, as required by the major, receive training in Philosophy, Government and Politics, Public Policy, and Economics courses, but the novel PPE courses they will be required to take combine these subject areas in a single-class format. The *Individual and Group Decision-Making* course, for instance, not only teaches students the tools of rational choice theory but also encourages philosophical reflection on the uses and limits of these tools, as well as examines different applications of these tools to unique problems in philosophy and politics. The *Social Philosophy and Political Economy* course examines different ways of organizing social and political institutions through historical, economic, and ethical lenses. Examining these questions through different perspectives is deeply important: institutions that are just might be horribly inefficient, and institutions that are economically efficient might be deeply unjust. Choosing between different institutions that allow people to live together requires examining them from many different perspectives, not just one.

Funding. The Philosophy department, along with other participating units, has the needed resources to deliver this new major. Much of the curriculum is derived from existing coursework. Three new "anchor" courses will be the foundation of the major, and the department has the needed infrastructure, advising support, and physical facilities to deliver them.

Institutional Commitment. The University is committed to supporting new interdisciplinary majors in area of the university that have the capacity to deliver high quality instruction with little added cost. UMD's undergraduate majors in Economics and in Government and Politics are two of the University's largest majors (about 900 and 700 majors, respectively). The PPE program is intended to provide another avenue for students who have an interest in those disciplines but also in the moral and ethical questions that arise out of them. The existing, more traditional, Philosophy program has about 90 majors and we anticipate an enrollment in the PPE major to be comparable.

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

Need. As the state of Maryland's flagship university and given its close approximation to Washington, DC, we believe that students at the University of Maryland should be able to develop the skills to think rigorously about pressing social and political questions. This is the central goal of the PPE major: to teach students how to think about difficult and multi-faceted questions by drawing on insights from several different disciplines and a diverse array of tools and methods.

State Plan. One of the three central goals of the Maryland State Plan for Postsecondary Education is to "foster innovation in all aspects of higher education to improve access and student success". We believe the PPE major does through combines existing courses and disciplines in a manner that offers a unique educational opportunity for undergraduate students. This program will address the strategies of creating long-term graduate education opportunities as well as encouraging a culture of risk-tasking and experimentation through a novel combination of course offerings.

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

Students majoring in PPE will be well suited for careers in law, government, business, and non-profits/NGOs. According to the Occupational Outlook Handbook by the Bureau of Labor Statistics[1], demand for such careers tends to grow at least as fast as average, oftentimes faster than average. Looking at legal occupations in particular, demand for paralegals and legal assistants is projected to increase 15% over the next ten years, which is much faster than average; demand for lawyers is projected to increase 8% over the next ten years, which is average; and demand for arbitrators, mediators, and conciliations is projected to increase 10% over the next ten years, which is faster than average. Turning to business, demand for administrative services managers is projected to increase 10% over the next ten years, which is faster than average; and demand for management analysts is project to increase 14% over the next ten years, which is faster than average.

D. Reasonableness of Program Duplication

There is one similar program in the state: a Philosophy, Politics, and Economics major at Mount St. Mary's University. Though there are many similarities between the proposed program and the one at Mount St. Mary's University, the nature of the institutions is so substantially different that the

[1] https://www.bls.gov/ooh/

programs are not likely to be duplicative. In terms of the broader DMV area, American University also has a PPE major, with a very similar structure to the one proposed here. More generally, we believe that students in the DMV area should be afforded the opportunity to study philosophy, politics, and economics in an interdisciplinary manner at a public, rather than private, university.

George Mason University allows for a concentration in PPE. For instance, one could major in philosophy with a PPE concentration, major in government with a PPE concentration, and so forth. This model is substantively different than that proposed here, which has three "anchor" courses to bring the three disciplines together.

E . Relevance to Historically Black Institutions (HBIs)

No Historically Black Institutions offer programs in Philosophy, Politics, and Economics.

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 at a public university in the state.

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

Curricular Development. The Philosophy, Politics, and Economics major brings together insights and methods from several different disciplines to help students think rigorously and creatively about pressing social and political questions. The major not only combines classes from distinct disciplines (Philosophy, Government and Politics, Public Policy, and Economics), it features courses specifically designed to integrate material from them. The skills developed in the major will be useful for careers in law, government, business, or any field that requires rigorous reasoning with a diverse set of insights, tools, and methods.

The curriculum is based on a set of six Disciplinary Foundations courses (18 credits) in Philosophy, Economics, Government and Politics, and Public Policy, three "core" PPE courses (9 credits), and four elective courses (12 credits) to be selected from an initial list that may expand over time, depending on students' interests. Students must also complete the University's General Education requirements, but there is sufficient room in the student's schedule to possibly double major or participate in many of the University's academic minors as a supplement to their curriculum.

Faculty Oversight. The PPE program will be led by a faculty director from the department of Philosophy, appointed by the department chair in consultation with the Steering Committee and Philosophy faculty. The PPE major was developed by six faculty in the department of Philosophy: Harjit Bhogal, Brian Kogelmann, Dan Moller, Christopher Morris, Eric Pacuit, and Rachel Singpurwalla. These individuals will continue to advise the Director of PPE once the major is launched. A Steering Committee will provide advice and guidance for the program. It will be constituted by: the Chair of Philosophy; the Director of PPE; the Director of Undergraduate Studies in Philosophy; a tenure track faculty member from the Department of Economics; and a tenure track faculty member from the

Department of Government and Politics. The Steering Committee will advise the PPE program on matters including but not limited to: the appointment of a Director of PPE; new electives; the structure and content of core courses; hiring of new tenure track or professional track faculty; undergraduate advising; and new modes of interdepartmental collaboration.

Educational Objectives and Learning Outcomes. The PPE program aims to: (1) equip students with methods from the disciplines of philosophy, political science, and economics; (2) encourage students to apply these methods to a diverse array of topics and questions across disciplinary boundaries, especially to normative topics and questions; (3) combine these methods in productive ways to carry out thoughtful, original research; (4) equip students with the ability to write clearly and concisely, read and distil information carefully, and construct arguments in an organized and convincing manner; and (5) inspire a love for learning from a diverse array of scholarly disciplines.

By the end of the program of study, students will be able to:

(1) apply basic methods from philosophy, political science, and economics to their reasoning about difficult social and political questions;

(2) write and think clearly and in an organized fashion about difficult social and political questions; and

(3) engage in original research to present convincing arguments for their views on difficult social and political questions.

A rubric for assessing these learning outcomes can be found in Appendix C.

Institutional assessment and documentation of learning outcomes. Undergraduate programs complete annual assessments, with each learning outcome evaluated at least once in a four-year cycle. Programs report findings each fall in summary form following a template structure and are informed by a "best practices" guide and a rubric. Assessment summary reports for each college are collected by the College Coordinator, who works to promote high standards through support and guidance to programs and with continuous improvement practices.

Course requirements.

<u>Disciplinary Foundations (All required) (18 credits)</u>

PHIL140: Contemporary Moral Issues
PHIL245: Political and Social Philosophy I
ECON200: Principles of Microeconomics
ECON201: Principles of Macroeconomics
GVPT170: American Politics
PLCY100: Foundations of Public Policy

<u>Core Sequence (All required) (9 credits)</u>

PHPE400: Individual and Group Decision-Making
PHPE401: Social Philosophy and Political Economy

PHPE402: Senior Capstone Seminar in Philosophy, Politics, and Economics

Electives (Four required) (12 credits)

AASP301: Applied Policy Analysis and the Black Community
AASP314: The Civil Rights Movement
AASP499A: Special Topics in Public Policy and the Black Community
COMM458: Seminar in Political Communication
COMM469: The Discourse of Social Movements
ECON311: American Economic History Before the Civil War
ECON312: American Economics After the Civil War
GVPT409I: The Politics of Human Rights
GVPT439A: Comparative Constitutional Law
HIST415: Ideas and Politics in Europe Since 1900
HIST450: American Capitalism, 1600-1900
HIST451: American Capitalism, 1900-present
PHIL341: Ethical Theory
PHIL347: Philosophy of Law
PHIL440: Contemporary Ethical Theory
PHIL445: Contemporary Political Philosophy
PHIL446: Law, Morality, and War
WMST 400: Theories of Feminism

See Appendix B for course descriptions.

General Education. Students will complete their humanities and social science general education requirements by way of fulfilling major requirements. All others will be completed from a long list of elective courses throughout the university. Students who transfer to UMD with an Associates 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. N/A

Other Institutions or Organizations. The department will not contract with another institution or non-collegiate organization for this program.

Student Support. Students enrolled in this program will have access to all the resources necessary in order to succeed in the program and make the most of the learning opportunity. Students entering the university as either first-time college students or transfer students will learn about the program through their orientation program. Students entering the major as internal transfers will meet with an advisor in the program when they declare the major. Two full-time advisors will be dedicated to the major.

Marketing and Admissions Information. The program will be clearly and accurately described in the university website and be marketed at university recruiting events.

H. Adequacy of Articulation

Many of the disciplinary foundation courses, including PHIL140, ECON200, ECON201, and GVPT170, are widely offered at Maryland community colleges. UMD provides a Transfer Course Database to allow students to find whether their courses will transfer to UMD: https://app.transfercredit.umd.edu/.

I. Adequacy of Faculty Resources

Program faculty. Appendix A contains the list of Philosophy department faculty who are most engaged in the development of this major. The full list of tenured and tenure-track faculty in the Philosophy department can be found on the department's web site at http://www.philosophy.umd.edu/people/faculty .

Faculty training. 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.

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

No new facilities or instructional resources are required to deliver this program.

L. Adequacy of Financial Resources

See Tables 1 and 2.

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

Consistent with UMD's strategic plan for diversity, the program will work with Office of Undergraduate to use "innovative, high-contact recruitment models, including those that employ alumni of color and international alumni, to attract a diverse student body from all areas of the state, the nation, and the world."[2] The program will develop the kind of reasoning skills helpful when thinking carefully about deep social ills and possible solutions. Consequently, students from different populations who care about social injustice issues will be attracted to program's coursework and activities. The program will also work with campus offices to support student success, retention, and graduation initiatives.

O. Relationship to Low Productivity Programs Identified by the Commission

N/A

P. Adequacy of Distance Education Programs

N/A

[2] University of Maryland. (September 16, 2010). *Transforming Maryland: Expectations for Excellence in Diversity and Inclusion.* (P. 19). Retrieved November 21, 2018, from: http://www.provost.umd.edu/Documents/Strategic_Plan_for_Diversity.pdf.

Tables 1 and 2: Resources and Expenditures

Table 1: Resources	**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Year 5**
1.Reallocated Funds	$188,533	$232,063	$238,575	$245,282	$252,191
2. Tuition/Fee Revenue (c+g below)	$0	$0	$0	$0	$0
a. #FT Students	20	40	80	100	100
b. Annual Tuition/Fee Rate	$13,575	$13,982	$14,402	$14,834	$15,279
c. Annual FT Revenue (a x b)	$0	$0	$0	$0	$0
d. # PT Students	5	10	10	10	10
e. Credit Hour Rate	$565	$582	$600	$618	$636
f. Annual Credit Hours	$20	$20	$20	$20	$20
g. Total Part Time Revenue (d x e x f)	$ -	$ -	$ -	$ -	$ -
3. Grants, Contracts, & Other External Sources	$ -	$ -	$ -	$ -	$ -
4. Other Sources	$ -	$ -	$ -	$ -	$ -
TOTAL (Add 1 - 4)	**$188,533**	**$232,063**	**$238,575**	**$245,282**	**$252,191**

Reallocated resources are redirection of faculty time to deliver the three anchor courses directly associated with the major, as well as a small amount of administrative and teaching assistant support. A combination of support from the department, the college, and the university's general budget will cover the cost of delivery. The university does not anticipate any enrollment growth directly associated with this major, rather enrollments will come from the general university undergraduate population. Thus new tuition revenue is assumed.

Table 2: Expenditures	**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Year 5**
1. Faculty (b+c below)	$56,525	$58,221	$59,967	$61,766	$63,619
a. #FTE	0.5	0.5	0.5	0.5	0.5
b. Total Salary	$42,500	$43,775	$45,088	$46,441	$47,834
c. Total Benefits	$14,025	$14,446	$14,879	$15,325	$15,785
2. Admin. Staff (b+c below)	$46,550	$47,947	$49,385	$50,866	$52,392
a. #FTE	0.5	0.5	0.5	0.5	0.5
b. Total Salary	$35,000	$36,050	$37,132	$38,245	$39,393
c. Total Benefits	$11,550	$11,897	$12,253	$12,621	$13,000
3. Total Support Staff (b+c below)	$33,250	$34,248	$35,275	$36,333	$37,423
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	$8,250	$8,498	$8,752	$9,015	$9,285
4. Graduate Assistants (b+c)	$37,208	$76,648	$78,948	$81,316	$83,756
a. #FTE	1.0	2.0	2.0	2.0	2.0
b. Stipend	$20,000	$41,200	$42,436	$43,709	$45,020
c. Tuition Remission	$17,208	$35,448	$36,512	$37,607	$38,736
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	$5,000	$5,000	$5,000	$5,000	$5,000
TOTAL (Add 1 - 8)	**$188,533**	**$232,063**	**$238,575**	**$245,282**	**$252,191**

Expenditures are based on faculty FTE required to deliver the three new anchor courses for the major. The rest of the curriculum is based on existing courses. A salary inflation rate of 3% is assumed after year 1.

Athendix A: Faculty in the Philosophy Department

A complete listing of the faculty in the department of Philosophy can be found at http://www.philosophy.umd.edu/people/faculty . All tenure-track faculty within the department of Philosophy hold the credentials of Ph.D. or equivalent

This shorter list contains the faculty who are primarily responsible for the curriculum of the PPE program:

- Harjit Bhogal, Assistant Professor, Ph. D., New York University
- Brian Kogelmann, Assistant Professor, Ph.D., University of Arizona
- Dan Moller, Associate Professor, Ph.D., Princeton University
- Christopher Morris, Professor, Ph.D., University of Toronto
- Eric Pacuit, Assistant Professor, Ph.D., City University of New York
- Rachel Singpurwalla, Associate Professor, Ph.D., University of Colorado, Boulder

Appendix B: Course Descriptions

Discipline Foundations Courses (18 credits)

PHIL 140 Contemporary Moral Issues (3) The uses of philosophical analysis in thinking clearly about such widely debated moral issues as abortion, euthanasia, homosexuality, pornography, reverse discrimination, the death penalty, business ethics, sexual equality, and economic justice.

PHIL 245 Political and Social Philosophy I (3) A critical examination of such classical political theories as those of Plato, Hobbes, Locke, Rousseau, Mill, Marx, and such contemporary theories as those of Hayek, Rawls, and recent Marxist thinkers.

GVPT 170 American Government (3) A comprehensive study of national government in the United States.

PLCY100 Foundations of Public Policy (3) A survey course, focusing on public policy institutions and analytical issues as well as on overview of key public policy problems. Students will be introduced to public policy as a discipline, with a brief overview of the actors and institutions involved in the process, and familiarize themselves with the kinds of problems typically requiring public action. The course will examine these problems from a multijurisdictional and multisectoral perspective. Specific policy areas examined include education policy, health policy, economic and budgetary policy, criminal justice policy, environmental policy, and national and homeland security policy. The course should permit students to have broad foundational exposure to the field that will give them a solid base for more advanced courses.

ECON 200 Principles of Microeconomics (3) Prerequisite: MATH110; or must have math eligibility of MATH111 or higher. Credit only granted for: ECON200, AREC240, or AREC250. Additional information: It is recommended that students complete ECON200 before taking ECON201. Introduces economic models used to analyze economic behavior by individuals and firms and consequent market outcomes. Applies conceptual analysis to several policy issues and surveys a variety of specific topics within the broad scope of microeconomics.

ECON 201 Principles of Macroeconomics (3) Prerequisite: MATH110; or must have math eligibility of MATH111 or higher. Recommended: ECON200. Credit only granted for: ECON201 or ECON205. An introduction to how market economies behave at the aggregate level. The determination of national income/output and the problems of unemployment inflation, will be examined, along with monetary and fiscal policy.

PHPE Core Courses (9 credits)

The three anchor courses, PHPE 400, PHPE will be new to this program; they will be approved through the university's standard course approval process prior to delivery.

PHPE 400 Individual and Group Decision Making (3) This course introduces students to the basic concepts and techniques used in philosophical and economic analyses of individual and group decision making. Students will study the main foundational issues that arise when studying mathematical models of individual and group decision making, and explore key applications of these mathematical models in philosophy, politics and economics.

PHPE 401 Social Philosophy and Political Economy (3) This course examines capitalism and socialism as differing modes of economic production through several different theoretical lenses. We begin by examining capitalism and socialism as they developed historically, by looking primarily at the work of Adam Smith and Karl Marx. Then, we turn our attention to one of the most important debates in 20th century economics: to what extent rational economic calculation is possible in a socialist commonwealth. Here we examine the work of important 20th century economists such as Ludwig von Mises, Oscar Lange, and Abba Lerner among others.

PHPE 402 Senior Capstone Seminar in Philosophy, Politics and Economics (3) Culminating seminar series for the major.

Electives (12 credits)

Course descriptions for the initial list of elective courses that could contribute to the major can be found in list of approved courses in the UMD Undergraduate Catalog (https://academiccatalog.umd.edu/undergraduate/approved-courses/).

Appendix C: Learning Outcome Assessment Rubric

Criterion for review of student work	Descriptions of levels of student performance			
	Exceeds Standards	**Meets Standards**	**Approaches Standards**	**Below Standards**
Employing methods from philosophy, politics, and economics to address normative issue	Methods from the three different disciplines present in the analysis, and all applications of these methods are correct.	Methods from the three different disciplines present in the analysis, though some applications of these methods are tenuous.	Methods from the three different disciplines present in the analysis, but application of some methods is seriously misguided.	Student fails to apply methods from all three disciplines in the analysis.
Ability to write and think clearly	Student has clear thesis statement and supports the thesis with compelling arguments.	Student has clear thesis statement, attempts to support thesis with arguments, but these arguments are not compelling.	Thesis statement is not clear, the arguments are not very compelling.	No thesis statement or coherent arguments are presented.
Ability to conduct original research	Student identifies a novel research question and musters compelling analysis in attempt to answer this question.	Student identifies a novel research question and musters analysis in attempt to answer this question that is not necessarily compelling.	Student identifies a research question that is not necessarily novel; the analysis is not necessarily compelling.	No coherent research question present; no compelling analysis offered.

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 Embedded Systems and Internet of Things

COMMITTEE: Education Policy and Student Life

DATE OF COMMITTEE MEETING: Tuesday, January 15, 2019

SUMMARY: The Electrical and Computer Engineering department at the University of Maryland, College Park proposes to offer a Bachelor of Science degree program in Embedded Systems and the Internet of Things at the Universities at Shady Grove. The proposed curriculum is a synthesis of core concepts in electrical engineering, computer engineering, software engineering, information technology, and telecommunications. The contents are outside the scope of any of these traditional disciplines, making it unique and customized for the anticipated needs of this emerging technology. The curriculum was developed by faculty of ECE department in consultation with industrial partners in the hardware (Texas Instruments) and software/data analytics (Microsoft) spaces. This program will train future engineers who are cognizant of the latest trends in circuits and hardware-oriented software that are capable of immediate contribution to the private and public sector institutions in which they will work. Students who have completed two years in any engineering program at a Maryland community college will be eligible for admission. The proposed curriculum will offer courses at the 300 and 400-levels that will allow students to complete their baccalaureate degree in two years. Teaching laboratories in the Biomedical Sciences and Engineering building at the Universities at Shady Grove are being instrumented to support the required courses in robotics, test and fabrication, controls systems, electromechanical circuits, and unmanned air systems.

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 Education Policy and Student Life Committee recommend that the Board of Regents approve the proposal from University of Maryland, College Park to offer the Bachelor of Science in Embedded Systems and Internet of Things.

COMMITTEE ACTION:		DATE: January 15, 2019
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

December 5, 2018

Chancellor Robert L. Caret
University System of Maryland
3300 Metzerott Road
Adelphi, MD 20783

Dear Chancellor Caret:

I am writing to request approval for a new Bachelor of Science program in Embedded Systems and Internet of Things. 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, 2018. 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
X	Within Existing Resources, or
	Requiring New Resources

University of Maryland, College Park
Institution Submitting Proposal

Embedded Systems and Internet of Things
Title of Proposed Program

Bachelor of Science	**Fall 2020**
Award to be Offered	Projected Implementation Date
	14.0999
Proposed HEGIS Code	Proposed CIP Code
Department of Electrical and Computer Engineering	Romel Gomez
Department in which program will be located	Department Contact
301-405-7755	rdgomez@umd.edu
Contact Phone Number	Contact E-Mail Address
[signature]	11-27-2018
Signature of President or Designee	Date

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

Description. As a society, we are currently within an era of the "Internet of People": Facebook, YouTube, Instagram and Twitter, along with myriad other social networking sites are ubiquitous and omnipresent. These social media platforms have revolutionized how people communicate and interact with each other, and their impact is felt in nearly all facets of human enterprise, including commerce, entertainment, health and politics. Yet despite its current importance, the Internet of People will soon give way to the "Internet of Things". In a few years, our human senses to "see, hear, touch, smell and taste" and our ability to rearrange our environment will be supplemented with inanimate sensors and actuators that collect information, communicate with one another. These devices will be rigidly managed by a control algorithm that will analyze voluminous data and perform appropriate actions to achieve a mission.

At the foundation of an Internet of Things (IoT) infrastructure are the microelectronic circuits that perform data acquisition, signal processing and communications within the device. These are performed by integrated circuits and microcontrollers that are incorporated within the device, commonly referred to as "embedded systems". On the other end are the data analytics and control systems that process the information and implement applications. In between lies the computing platforms, protocols and gateways that seamlessly connect these devices, and process the data into actionable information while providing security that all is trustworthy and safe.

With the rapid pace of growth in new products and applications, there is a pressing need in industry and government for engineers with special skills in hardware and software design and who are well-versed with both analog and digital electronics and information systems. The Bachelor of Science in Embedded Systems and the Internet of Things will provide students with a solid foundation in key emerging technologies of IoT, the ability to integrate devices into complete IoT systems, and an understanding of how IoT fits within the wider context of information and communications technology, including data analytics and cloud computing. It is expected that graduates will be in high demand in such occupational areas as computer developers, computer systems analysts, network architects and administrators, information security analysts, information systems analysts and computer programmers.

Relation to Strategic Goals. The proposed major in Embedded Systems and the Internet of Things (BSES) 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."

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 Electrical and Computer Engineering 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. A report by McKinsey[1] , Inc. in 2017 has projected that the number of connected 'things' will grow from 10 billion today to 30 billion devices by 2020, or about 3 billion new devices per year. It further cites an estimate that the global impact of IoT can be as high as $6.2 trillion by 2025, or roughly 23% of the US GDP projected by the Congressional Budget Office. Graduates of this program will be suitable for the high demand occupational areas as computer developers, computer systems analysts, network architects and administrators, information security analysts, information systems analyst and computer programmers.

The proposed Bachelor of Science in Embedded Systems and Internet of things will train future engineers who are cognizant of the latest trends in circuits and hardware-oriented software that are capable of immediate contribution to the private and public sector institutions in which they will work. It is intended to be the first of its kind in the U.S. from a major research university. This program will draw students from community colleges and will admit students who have completed their sophomore-level courses in any engineering or allied area, and who satisfy the admission requirements of the A. James Clark School of Engineering. Students graduating from the program can successfully compete for jobs in the information technology, cyber-security, software engineers and analysts, in addition to the specialized jobs in Internet of Things.

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."[2] 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.

[1] https://www.mckinsey.com/industries/semiconductors/our-insights/the-internet-of-things-sizing-up-the-opportunity) Disruptive technologies: Advances that will transform life, business, and the global economy.
[2] 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.

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

The field of IoT is projected by some experts (Forbes, Dec. 2017) to have a global market value of $457B by 2020 with a Compound Annual Growth Rate of 28, and the need for trained workforce to fuel this growth is essential. The proposed curriculum is a synthesis of some of the core concepts in electrical engineering, computer engineering, computer science, information technology and telecommunications.

From the USBLS Occupational Outlook Handbook (https://www.bls.gov/ooh/computer-and-information-technology/home.htm), computer and information technology occupations is projected to grow 13 percent from 2016 to 2026 in the US, faster than the average for all occupations. These occupations are projected to add about 557,100 new jobs. Demand for these workers will stem from greater emphasis on cloud computing, the collection and storage of big data, and information security. For the State of Maryland (http://www.dllr.state.md.us/lmi/iandoproj/maryland.shtml), the combined job demand for software systems and applications developers is expected to be around 40,000 in 2024, up by more than 34% from 2014. Similarly, on a very short time frame, the job search site http://www.indeed.com, there are 570 job listings under the category of internet of things in the zip code 20850 (Universities at Shady Grove.)

D. Reasonableness of Program Duplication

Several universities within the state of Maryland offer programs in electrical engineering, given the high demand for graduates in this area. A program that is focused on embedded systems – developing deep expertise in both analog and digital circuits along with the required software skills, would be unique to the region.

E . Relevance to Historically Black Institutions (HBIs)

Of the four historically black institutions in Maryland, the two that offer bachelor's programs in electrical engineering are the University of Maryland, Eastern Shore and Morgan State University. Overall engineering enrollment at UMES has been stable at close to 300 students, drawing largely from Prince Georges County. Morgan State University's undergraduate program has seen steady growth since 2011, consistent with national trends, and is now at about 550 students and is comparable in size to UMCP's program in electrical engineering. This new option at the Universities at Shady Grove is expected to serve an expanding demand, particularly in central Maryland, and given the expected size we do not expect that it will impact existing EE programs.

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 ECE department in consultation with industrial partners in the hardware (Texas Instruments) and software/data analytics (Microsoft) spaces. The contents are outside the scope of any of the two traditional disciplines of electrical engineering and computer engineering, making it unique and customized for the anticipated needs of this emerging technology.

All of the undergraduate programs within the A. James Clark School of Engineering are "limited enrollment programs", due to high demand and finite capacity. Students who meet the School's LEP Admissions requirements and who have completed the required basic math/sciences courses and lower level General Education requirements are eligible for the program. The first two years prior to admissions into the program, students can complete these requirements through an associate's degree in Engineering or other STEM Program (e.g. A.S. or A.A.) from a Maryland public community college. Once students are admitted to the program, they will be able to complete their baccalaureate degree in two years.

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 Embedded Systems major. Students will take four or five courses per semester, covering 11 foundational courses, two capstone design lab courses, six advanced technical electives, and Professional Writing. In addition to course work, students will have the opportunity to be engaged in undergraduate research led by faculty mentors. In their junior years, they will receive training that satisfies the following foundational course objectives.

Students will be able to have knowledge and skills in:

1. Computer coding and software development, including C and Javascript programming languages;
2. Foundations of analog circuits and digital logic;
3. Introduction to microelectronics;
4. Introduction to computer networks;
5. Introduction to computer organization;
6. Foundations of discrete mathematics;
7. Introduction to Internet of Things;
8. Introduction to computing algorithms in Python programming language.

In their senior year, students will have the option of taking elective courses with concentrations in devices, communication and protocols, cyber security, data analytics and computing. They will also be required to complete a two-semester capstone design course dedicated to the design and building of a functional IoT system in real world applications in manufacturing, healthcare, transportation, security and commerce applications.

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

Educational Objectives and Learning Outcomes. Within 3 to 5 years from graduation, a graduate of BS in Embedded Systems and Internet of Things will have engaged in life-long learning and will have attained any of the following program educational objectives (the language used here is consistent with requirements for ABET accreditation):

PEO #1. Gainful employment and advancement to a leadership position in a reputable industry or government institution.
PEO #2. Successful innovator and/or entrepreneur in embedded systems, information technology or related space.

Student Learning Outcomes (SLO a-i)
The program must enable students to attain, by the time of graduation:

(a) An ability to apply knowledge of computing and mathematics appropriate to the program's student outcomes and to the discipline;
(b) An ability to analyze a problem, and identify and define the computing requirements appropriate to its solution;
(c) An ability to design, implement, and evaluate a computer-based system, process, component, or program to meet desired needs;
(d) An ability to function effectively on teams to accomplish a common goal;
(e) An understanding of professional, ethical, legal, security and social issues and responsibilities;
(f) An ability to communicate effectively with a range of audiences;
(g) An ability to analyze the local and global impact of computing on individuals, organizations, and society;
(h) Recognition of the need for and an ability to engage in continuing professional development;
(i) An ability to use current techniques, skills, and tools necessary for computing practice.

Institutional assessment and documentation of learning outcomes. Undergraduate programs complete annual assessments, with each learning outcome evaluated at least once in a four-year cycle. Programs report findings each fall in summary form following a template structure and are informed by a "best practices" guide and a rubric. Assessment summary reports for each college are collected by the College Coordinator, who works to promote high standards through support and guidance to programs and with continuous improvement practices.

Assessments of the courses in this program are based on well-defined rubrics that form the basis for course improvement within our curriculum. Every course has an associated rubric for each performance indicator. Some student outcomes are directly related to the aforementioned SLO (a-i) student learning outcomes, while others are generated by faculty Course Disciplinary Committees. Most of these are technical and focus on the key concepts needed that will enable students to engage in the field long after they graduate. The collection of assessment data follows the ABET process which the ECE department has implemented from as of 2001 ABET self-study. At the end of the semester,

every faculty member is encouraged to fill out assessment sheets in which they assign a number (1-4) for each student corresponding to his/her level of achievement - 1 (undeveloped) to 4 (mastery).

Course requirements.

FIRST & SECOND YEAR

Prior to being admitted to the Embedded System major, students should have completed the Engineering LEP gateway courses, basic math/science courses, and lower-level General Education requirements.

Course	Title	Cr
MATH 140	Calculus I	4
MATH 141	Calculus II	4
ENGL 101	Academic Writing	3
CHEM 135	General Chemistry for Engineers	3
PHYS 161	General Physics: Mechanics and Particle Dynamics	3
PHYS 260	General Physics: Vibration, Waves, Heat, Electricity and Magnetism	3
PHYS 261	General Physics: Vibrations, Waves, Heat, Electricity and Magnetism (Laboratory)	1
ENES 100	Introduction to Engineering Design	3
MATH 246	Differential Equations	3
MATH 240	Linear Algebra	4
GenEd Courses	General Education Requirements	29
	Total Credits	**60**

JUNIOR & SENIOR YEARS AT SHADY GROVE

Junior Year 1st Semester

Course	Title	Cr
ENEE 302	Analog Circuits	4
ENEE 344	Introduction to Digital Circuits	4
ENEE 354	Discrete Mathematics and Applications	3
ENEE 340	Programming Concepts for Engineers (C/C++)	2
ENEE 341	Introduction to Internet of Things	3
	Total Semester Credits	**16**

Junior Year 2nd Semester

Course	Title	Cr
ENEE 304	Microelectronics and Sensors	3
ENEE 352	Introduction to Networks and Protocols	3
ENEE 353	Computer Organization	3

ENEE 355	Algorithms in Python	3
ENGL 393	Technical Writing	3
	Total Semester Credits	**15**

Senior Year 1st Semester

Course	Title	Cr
ENEE 408x	Capstone Design Lab I	3
ENEE454	Embedded Systems	3
ENEE4xx	Senior Level Electives (based on track)	9
	Total Semester Credits	**15**

Senior Year 2nd Semester

Course	Title	Cr
ENEE408x	Capstone Design Lab II	3
ENEE443	Hardware/Software Security for Embedded Systems	3
ENEE4xx	Senior Level Electives (based on track)	9
	Total Semester Credits	**15**
TOTAL DEGREE CREDITS		**121**

PROGRAM TRACKS

Students in the Embedded Systems major will be required to choose one of three program tracks available in the major. Each track will have its specific senior level course required course(s) and electives.

Hardware Track (18 credits)

Status	Course	Title	Cr
Required	ENEE 444	Operating Systems for Embedded Systems	3
Required	ENEE 455	Advanced FPGA System Design Using Verilog	3
Elective	ENEE 453	Web Based Application Development	3
Elective	ENEE 451	Network Security	3
Elective	ENEE 345	Probability and Statistical Inference	3
Elective	ENEE 459Q	Machine Learning Tools	3
Elective	ENEE 459D	Database	3

Computational/Data Management Track (18 credits)

Status	Course	Title	Cr
Required	ENEE 444	Operating Systems for Embedded Systems	3
Required	ENEE 453	Web Based Application Development	3

Required	ENEE 345	Probability and Statistical Inference	3
Required	ENEE 459Q	Machine Learning Tools	3
Required	ENEE 452	Advanced Software for Embedded Systems-Connected Systems	3
Elective	ENEE 455	Advanced FPGA System Design Using Verilog	3
Elective	ENEE 451	Network Security	3

Network Security Track (18 credits)

Status	Course	Title	Cr
Required	ENEE 453	Web Based Application Development	3
Required	ENEE 345	Probability and Statistical Inference	3
Required	ENEE 459Q	Machine Learning Tools	3
Required	ENEE 452	Advanced Software for Embedded Systems-Connected Systems	3
Elective	ENEE 455	Advanced FPGA System Design Using Verilog	3
Elective	ENEE 451	Network Security	3
Elective	ENEE 444	Operating Systems for Embedded Systems	

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 Associates 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. It is expected that the School will seek to include this program within its ABET accreditation, once approved.

Other Institutions or Organizations. The department will not contract with another institution or non-collegiate organization for this program.

Student Support. Shady Grove students will receive academic advising and support from the academic adviser at Shady Grove who will report to the Director, Office of Undergraduate Studies in Electrical and Computer Engineering at UMCP. This advising includes the usual scheduling of classes, evaluation of progress towards the degree, and identification of resources, as well as separate meetings with a cohort, as needed. In addition, the ECE department will maintain an office at Shady Grove during the times when classes are in session. An ECE faculty member will be designated as the Associate Chair of the Shady Grove Program. The Associate Chair will spend a one to two days per week at the Shady Grove facility to address the concerns of students, faculty and instructors. In addition, we will hire a lab

technician to maintain the labs at Shady Grove and part-time IT specialist. These personnel will report to the corresponding group leaders in the ECE department at UMD. The ECE undergraduate office will conduct mid-semester surveys or roundtable discussions for student feedback. Students evaluate courses and faculty through the on-line course evaluation system for UMD courses.

Marketing and Admissions Information. The ECE office of external relations in collaboration with the undergraduate office will produce marketing materials and will conduct recruitment events at various times in the year.

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. The Clark School's requirements for transfer students are articulated with Montgomery College's Associate of Science in Engineering. In 2009, the Maryland Higher Education Commission approved a statewide articulation in electrical engineering that creates a smooth pathway between the state's associate and baccalaureate degrees in electrical engineering and we anticipate that this articulation will satisfy the new degree program as well.

I. Adequacy of Faculty Resources

Program faculty. Appendix A contains a full list of ECE department faculty.

Faculty training. 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.

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

Required classroom facilities are spaces for four lecture classes/semester of 50-75 students each, and space for hosting a microelectronics lab, an FPGA lab/embedded microcontroller lab, and a software lab. In year two, a general purpose lab for the capstone projects will also be required. We estimate each lab will need a room of about 400 sq. ft. in area. These spaces are expected to be available (for rent) within the new Biomedical Sciences and Engineering (BSE) Building at the Universities at Shady Grove. The BSE building is scheduled to open in spring 2019.

L. Adequacy of Financial Resources

See Tables 1 and 2.

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.

Important changes to the curriculum, such as introduction or deletions of courses, curriculum and pedagogical approaches are approved by the chair of the department, upon recommendation from the associate chair of undergraduate education and vetting by the General Academic Affairs Committee (GAAC) in accordance with the department bylaws. The Undergraduate Affairs Committee (UAC) is tasked with the oversight of all matters related to undergraduate education, including the overall curriculum for both the regular electrical and computer engineering programs and the departmental honors program.

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	$900,000	$900,000	$900,000	$900,000	$900,000
2. Tuition/Fee Revenue (c+g below)	$251,275	$517,627	$1,066,311	$1,372,875	$1,696,873
a. #FT Students	25	50	100	125	150
b. Annual Tuition/Fee Rate	$10,051	$10,353	$10,663	$10,983	$11,312
c. Annual FT Revenue (a x b)	$251,275	$517,627	$1,066,311	$1,372,875	$1,696,873
d. # PT Students	0	0	0	0	0
e. Credit Hour Rate	$476.00	$490.28	$504.99	$520.14	$535.74
f. Annual Credit Hours	16	16	16	16	16
g. Total Part Time Revenue (d x e x f)	$ -	$ -	$ -	$ -	$ -
3. Grants, Contracts, & Other External Sources	$ -	$ -	$ -	$ -	$ -
4. Other Sources	$ -	$ -	$ -	$ -	$ -
TOTAL (Add 1 - 4)	**$1,151,275**	**$1,417,627**	**$1,966,311**	**$2,272,875**	**$2,596,873**

Tuition revenue is based on AY2018-19 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. Faculty (b+c below)	$465,500	$616,455	$846,598	$871,996	$898,156
a. #FTE	3.5	4.5	6.0	6.0	6.0
b. Total Salary	$350,000	$463,500	$636,540	$655,636	$675,305
c. Total Benefits	$115,500	$152,955	$210,058	$216,360	$222,851
2. Admin. Staff (b+c below)	$325,850	$335,626	$493,849	$813,863	$1,047,849
a. #FTE	3.5	3.5	5.0	8.0	10.0
b. Total Salary	$245,000	$252,350	$371,315	$611,927	$787,856
c. Total Benefits	$80,850	$83,276	$122,534	$201,936	$259,993
3. Total Support Staff (b+c below)	$166,250	$171,238	$176,375	$181,666	$187,116
a. #FTE	2.5	2.5	2.5	2.5	2.5
b. Total Salary	$125,000	$128,750	$132,613	$136,591	$140,689
c. Total Benefits	$41,250	$42,488	$43,762	$45,075	$46,427
4. Equipment	$50,000	$25,000	$25,000	$25,000	$25,000
5. Library	$5,000	$5,000	$5,000	$5,000	$5,000
6. New or Renovated Space	$0	$0	$0	$0	$0
7. Other Expenses: Operational Expenses	$465,000	$465,000	$515,000	$515,000	$515,000
TOTAL (Add 1 - 7)	**$1,462,600**	**$1,603,318**	**$2,046,822**	**$2,397,525**	**$2,663,121**

Notes: The “admin staff” category includes graduate assistants to support laboratory instruction. Other expenses include tuition remission for graduate assistants, lab equipment and maintenance ($200K), materials and supplies, program outreach, travel related to the program, and $75K per year in scholarships.

Appendix A: Faculty in the Electrical and Computer Engineering Department

All ECE faculty hold doctoral degrees in a field relevant to the discipline. Faculty biographies and research interests can be found in the ECE department web site faculty listings.

Faculty Name	Highest Degree Earned- Field and Year	Rank
Babadi, B.	Engineering Sciences, 2011	Assist Prof
Dachman- Soled,D.	Computer Science, 2011	Assist Prof
Dumitras, T.	Electrical Engineering, 2010	Assist Prof
Papamanthou, C.	Computer Science, 2011	Assist Prof
Rotkowitz, M.	Aeronautics & Astronautics, 2005	Assist Prof
Franklin, M.	Computer Science, 1993	Assoc Prof
Hafezi, M.	Theoretical Physics, 2009	Assoc Prof
Horiuchi, T.	Computation and Neural Systems	Assoc Prof
Khaligh, A.	Electrical Engineering, 2006	Assoc Prof
Martins, N.	Electrical Engineering and Computer	Assoc Prof
Munday, J.	Physics, 2008	Assoc Prof
Papamarcou, A.	Electrical Engineering, 1987	Assoc Prof
Abed, E.H.	Electrical Engineering, 1982	Prof
Abshire, P.	Electrical Engineering, 2002	Prof
Antonsen, T.	Electrical Engineering, 1977	Prof
Barg, A.	Electrical Engineering, 1987	Prof
Barua, R.	Electrical & Computer Engineering, 2000	Prof
Bhattacha ryya, S.	Electrical & Computer Science,1994	Prof
Blankensh ip, G.	Electrical Engineering, 1971	Prof
Chellappa, R.	Electrical Engineering, 1981	Prof
Dagenais, M.	Physics, 1978	Prof
Davis, C.	Physics, 1970	Prof
Ephremid es, A.	Electrical Engineering, 1971	Prof
Espy- Wilson, C.	Electrical Engineering, 1987	Prof
Ghodssi, R.	Electrical Engineering, 1996	Prof
Goldhar, J.	Physics, 1976	Prof
Goldsman, N.	Electrical Engineering, 1989	Prof
Gomez, R.	Physics, 1990	Prof
Iliadis, A.	Electrical Engineering, 1980	Prof
Jacob, B.	Computer Science & Engineering, 1997	Prof
JaJa, J.	Applied Mathematics, 1977	Prof
Krishnaprasad, P.	Engineering 1977	Prof
La, R.	Electrical Engineering, 2000	Prof
Lawson, W.	Electrical Engineering, 1985	Prof
Liu, K. J.	Electrical Engineering, 1990	Prof
Makowski, A.	Mathematics, 1981	Prof

Marcus, S.	Electrical Engineering, 1975	Prof
Mayergoyz, I.	Electrical Engineering, 1968	Prof
Milchberg, H.	Astrophysica l Sciences, 1985	Prof
Murphy, T.	Electrical Engineering, 2001	Prof
Nakajima, K.	Computer Science, 1980	Prof
Narayan, P.	Electrical Engineering, 1981	Prof
Newcomb, R.	Electrical Engineering, 1960	Prof
Oruc, A.	Electrical Engineering, 1983	Prof
Ott, E.	Electrophysics, 1967	Prof
Qu, G.	Computer Science, 2000	Prof
Shamma, S.	Electrical Engineering, 1980	Prof
Shayman, M.	Applied Mathematics, 1981	Prof
Simon, J.	Physics, 1990	Prof
Sprangle, P.	Physics, 1973	Prof
Srivastava, A.	Computer Science, 2002	Prof
Tits, A.	Electrical Engineering, 1980	Prof
Ulukus, S.	Electrical and Computer Engineering, 1998	Prof
Vishkin, U.	Computer Science, 1981	Prof
Waks, E.	Electrical Engineering, 2003	Prof
Wu, M.	Electrical Engineering, 2001	Prof
Yeung, D.	Electrical Engineering, 1998	Prof
Beaudoin, B.	Electrical Engineering, 2011	PTK
Mogul, N.	Science and Technology Studies, 2002	PTK
Picozzi, S.	Physics, 1987	PTK
Romero, D.	Physics, 1999	PTK

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.

ENEE 302 Analog Circuits
Foundations of circuits, focusing on applications including signal amplification, power amplification, instrumentation and filters. Prerequisite: MATH246 and PHYS260/261.
Ref: Practical Electronics for Inventors 3rd ed, Paul Scherz

ENEE 344 Introduction to Digital Circuits
Hands on approach to learning foundations of digital circuits, including input/output, logic gates, Karnaugh maps, latches, flip-flops and state-machines. Ref: Learn Digital Design with PSoC, a bit at a time, Van Ess. The adoption of PSoC is suggested. Appropriate tutorial on C programming will be supplemented if needed. Co-requisite: ENEE340.

ENEE 354 Discrete Mathematics for Information Technology
Foundations of dscrete math for information technology. Topics include sets, relations, functions and algorithms, proof techniques and induction, Number theory, Counting and combinatorics and Graph theory (Suggested text: Discrete Mathematics and Its Applications, 7th ed., Kenneth Rosen).

ENEE 340 Programming Concepts for Engineers C/C++ with hardware applications
Description: Principles of software development, high level languages, input/output, data types and variables, operators and expressions, program selection, repetition, functions, arrays, strings, introduction to algorithms, software projects, debugging, documentation. Target hardware: ARM-based evaluation or development kit, e.g., Atmel AVR.

ENEE 341 Introduction to Internet of Things
Description: The course begins by covering the fundamentals of IoT, including devices, applications and business models. The course will include basic tools for networking, protocols and gateways. Introduction to data analytics and cloud computing platform.

ENEE 304 Microelectronics and Sensors
The course covers the basics of analog amplifier design starting from single-stage to multiple stage units. The four basic single stage configurations (common-source/common-emitter, follower, cascade and differential pair) are stressed, as are the bias networks that go along with them. Mid-band gains and impedances are derived and the concepts of frequency and time domain analysis are presented. Topics on introductory power electronics will be included. Prerequisite: ENEE302.

ENEE352 Introduction to Networks and Protocols
Description: An overview of design issues and the important industry standards for digital communications networks. This includes protocols, data communications technologies, error correction and detection, congestion control, traffic routing, Local Area Network (LAN) protocols,

TCP/IP, and some security issues. . It covers layered architectures for the construction of networks, following a simplified OSI reference model. This includes error detection, protocols for retransmission, data link control protocols, medium access control protocols, and both intradomain and interdomain routing. In addition to detailed study of TCP/IP networks, SONET, ATM, and WDM are considered. Both wired and wireless local area networks are studied.

ENEE353 Computer Organization for Embedded Systems
Description: This course covers the basics of computer organization and design. The topics include assembly and machine instructions, datapath and controller design, pipelining and memory hierarchy. Prerequisite: ENEE344 and ENEE340.

ENEE351 Algorithms in Python
Description: A study of Python programming language and its use in some algorithms related to sorting, graphs and trees, combinatorics. Suggested text: Python Algorithms: Mastering Basic Algorithms, Magnus Lie Hetland. Prerequisite: ENEE354 and ENEE340.

ENGL393 Technical Writing
The writing of technical papers and reports. This course teaches students how to make the technologies they work with understandable to many different types of readers. (Offered by the English department)

ENEE 453 Web-based Applications Development
Description: Introduction to computer programming in the context of developing full featured dynamic web sites. Uses a problem-solving approach to teach basics of program design and implementation using JavaScript; relates these skills to creation of dynamic web sites; then explores both the potential and limits of web-based information sources for use in research.

ENEE 455 Advanced FPGA System Design using Verilog
Description: This is a project-oriented course to on digital system design using Verilog hardware description language (HDL) in an industry-standard design environment. Students will implement real-world designs in field programmable gate arrays (FPGAs) as well as test and optimize the FPGA-implemented systems. Prerequisite: ENEE344 and ENEE340.

ENEE 454 Embedded Systems
Description: This course will provide students with the essential knowledge base that will enable them to tackle complex problems encountered in embedded systems design. In addition to the overview of associated hardware components and software methodologies and tools used in the development of modern embedded systems, and theory behind them, the course will include a a carefully selected collection of hands-on Lab exercises that would help students get a sense of how the presented theoretical concepts connect with the real-world embedded systems applications.

ENEE 444 Operating System for Embedded Systems
The course will present the theory, design, implementation and analysis of computer operating systems. Through classroom lectures, homework, and projects, students learn the fundamentals of

concurrency, process management, interprocess communication and synchronization, job scheduling algorithms, memory management, input-output devices, file systems, and protection and security in operating systems. Optional topics may include communications protocols, computer security, and real-time operating systems.

ENEE 451 Network Security
This course covers the foundations of modern cryptography and the current efforts from both academia and industry in building trustworthy computing. We will focus on the technology advances, industrial standards, and law enforcements that have been or have to be made to establish trust in four key areas to establish the trust in computing: security, privacy, reliability, and business integrity.

ENEE 345 Probability and Statistical Inference
Simplest tests of statistical hypotheses; applications to before-and-after and matched pair studies. Events, probability, combinations, independence. Binomial probabilities, confidence limits. Random variables, expected values, median, variance, standard distributions, moments, law of large numbers, tests based on ranks, normal approximation, central limit theorem. Sampling methods, estimation of parameters, testing of hypotheses.

ENEE 408x Capstone Design (Two Semester Capstone Design Course)
This focuses on a culminating design experience with specific attention to real world requirements in terms of constraints and component selection, optimization, security and integration into systems.

ENEE 452 Advanced Software for Embedded Connected Systems
Description: This course focuses on the hardware and software foundations, evaluation and validation, application mapping, optimization and testing of cyber-physical systems connected via the web. Emphasis is placed on the tow basic technologies of ICT systems, namely, embedded systems and communication technologies.

References:
Embedded System Design; Embedded Systems Foundations of Cyber-Physical Systems – Peter Marwedel 2ed (2010); Computer Organization and Embedded Systems, 6th ed. by Hamacher, Vranesic, Zaky and Manjikian. McGraw Hill, 2011; Test Driven Development for Embedded C. James Grenning. The Pragmatic Bookshelf, 2011. Embedded System Design: A Unified Hardware/Software Introduction. Vahid and Givargis. Wiley, 2001.

ENEE 443 Hardware/Software Security for Embedded Systems
Description: The objective is to gain solid understanding of the critical systems level software and hardware issues to be considered when designing industry standard secured embedded systems. Text: Embedded Systems Security: Practical Methods for Safe and Secure Software and Systems Development 1st Edition, David Kleidermacher and Mike Kleidermacher

ENEE 459Q Machine Learning Tools
A broad introduction to machine learning and statistical pattern recognition. Topics include: Supervised learning (Bayesian learning and classifier, parametric/non-parametric learning, discriminant functions,

support vector machines, neural networks, deep learning networks); Unsupervised learning (clustering, dimensionality reduction, auto-encoders). The course will also discuss recent applications of machine learning, such as computer vision, data mining, autonomous navigation, and speech recognition.

ENEE 459D Database

Students are introduced to database systems and motivates the database approach as a mechanism for modeling the real world. An in-depth coverage of the relational model, logical database design, query languages, and other database concepts including query optimization, concurrency control; transaction management, and log based crash recovery. Distributed and Web database architectures are also discussed.

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 Human Development

COMMITTEE: Education Policy and Student Life

DATE OF COMMITTEE MEETING: Tuesday, January 15, 2019

SUMMARY: The University of Maryland, College Park proposes to establish a Bachelor of Science in Human Development, offered by the Department of Human Development and Quantitative Methodology within the College of Education. The undergraduate major in human development is designed to support student learning about the mechanisms of growth and change across the life span. It builds upon an existing undergraduate minor which enrolls about 200 students per year. With areas of focus in developmental science, educational psychology, and statistical methodology, human development majors will explore the biological, social, emotional, and cognitive processes of learning and development from conception to old age in diverse social and cultural contexts. Introductory and advanced course work, as well as laboratory research apprenticeships or field experiences, are essential components of the program. Those who complete the program will be able to take their human development degree in a variety of directions, including health, law, education, public policy, psychology, neuroscience, communication, and marketing. Graduates will be particularly well-suited for careers in educational and social science research and development; social service positions in governmental, NGO's, non-profit and for-profit domains; and instructional (non-certification positions) and administrative roles in educational and childcare organizations.

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 Education Policy and Student Life Committee recommend that the Board of Regents approve the proposal from University of Maryland, College Park to offer the Bachelor of Science in Human Development.

COMMITTEE ACTION:		DATE: January 15, 2019
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

November 26, 2018

Chancellor Robert L. Caret
University System of Maryland
3300 Metzerott Road
Adelphi, MD 20783

Dear Chancellor Caret:

I am writing to request approval for a new Bachelor of Science program in Human Development. 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 November 14, 2018. 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
Jennifer King Rice, Dean, College of Education

UNIVERSITY SYSTEM OF MARYLAND INSTITUTION PROPOSAL FOR

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

University of Maryland, College Park
Institution Submitting Proposal

Human Development
Title of Proposed Program

Bachelor of Science
Award to be Offered

Fall 2019
Projected Implementation Date

Proposed HEGIS Code

42.2703
Proposed CIP Code

Human Development and Quantitative Methodology
Department in which program will be located

D.J. Bolger
Department Contact

301-405-9103
Contact Phone Number

djbolger@umd.edu
Contact E-Mail Address

Signature of President or Designee

11-27-2018
Date

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

Description. The undergraduate major in Human Development is designed to support student learning about the mechanisms of growth and change across the life span. With areas of focus in developmental science, educational psychology, and statistical methodology, Human Development majors will explore the biological, social, emotional, and cognitive processes of learning and development from conception to old age in diverse social and cultural contexts. The program will be housed in the Department of Human Development and Quantitative Methodology (HDQM Department) within the UMD College of Education.

Relation to Strategic Goals. The UMD strategic plan states: "The University will offer its students an outstanding and rigorous educational experience, as well as an environment and programs to support their social, moral, and intellectual growth. Students will have a range of educational opportunities that reflect the breadth and depth of a comprehensive research university."[1] One gap in UMD's program offerings is an undergraduate program in Human Development. This is surprising given that the faculty that comprise the HDQM Department are recognized nationally and internationally for their specific expertise and hold leadership positions in premiere professional organizations. For decades, the department has offered a graduate program in Human Development that is consistently among the highest ranked programs in the nation. The existing faculty would allow UMD to provide a robust and in-depth perspective on learning and development that would set UMD apart from peer institutions. The department currently offers a minor program in Human Development that enrolls more than 150 students. The proposed degree program builds on this minor to allow students to benefit from faculty expertise in a full degree program.

Funding. The program will draw upon existing resources. The HDQM Department already has faculty and offers a doctoral, master's and minor program in Human Development. With an already existing faculty, facilities are already in place. The department provides undergraduate coursework in human development for the minor and other major programs that need foundational instruction in this area. The department has the administrative and advising infrastructure for undergraduate education as it currently co-sponsors the bachelor's program in Early Childhood and Early Childhood Special Education.

Institutional Commitment. The department has the administrative, instructional, advising, and facilities infrastructure in place to operate 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. Graduates of the Human Development program will be well prepared with the knowledge base and skills to pursue, often with additional graduate education, subsequent careers in a variety of occupations including medicine, law, psychology, rehabilitation, behavioral health, education, social services, public policy, communication, and marketing. This is because theories of developmental change can help practitioners interpret behavior in these contexts and understand why various interventions may be

[1] University of Maryland, College Park. (May 21, 2008). *Transforming Maryland: Higher Expectations. The Strategic Plan for the University of Maryland.* (p. 11). Retrieved October 29, 2018 from: http://www.provost.umd.edu/SP07/StrategicPlanFinal.pdf..

helpful. These career paths align exceptionally well with the economic base in the State. The State of Maryland is home to many research and development companies, as well as governmental, NGO's and non-profit agencies with a focus on the behavioral and social sciences, and education.

State Plan. The proposed program in Human Development aligns with the *Maryland State Plan for Postsecondary Education's* emphasis on career training. Strategy 7 of the *Maryland State Plan* is "Enhance career advising and planning services and integrate them explicitly into academic advising and planning."[2] One of the educational outcomes for the program is to prepare students to enter the workforce. A substantial focus of the program will be preparation for employment in a variety of public and private sectors via internships and externships. Through the Capstone Seminar course, which students take in the spring of their junior year, students will walk through career plans, draft resumes, address professional standards and behavior, discuss ethical issues, and draft internship plans/contracts with the goal of participating in those internships in the Summer/Fall of their senior year.

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

Enrollment figures on campus and at other institutions indicate the market for Human Development majors at the University of Maryland. The undergraduate minor in Human Development is a popular program that currently serves more than 150 students from across campus. In a recent survey of minors, the majority of respondents indicated that if there had been an undergraduate Human Development program when they entered UMD, this program would have been of interest to them.

We may also obtain enrollment estimates by comparison to our peer institutions. There are roughly 140 bachelor degree programs of Human Development across the country consisting of roughly 14,000 undergraduate students. Student enrollment in Human Development majors at regional and peer institutions indicates that the major is a popular choice for students. For example, Penn State University has a program in Human Development and Family Science, which has a total of 350 declared majors. At Boston College, Applied Psychology and Human Development is the 8th most popular undergraduate major (out of more than 50), with 403 out of 9,110 undergraduates enrolled as of Fall 2012. Fellow BIG 10 institution University of Wisconsin – Madison has 187 undergraduates currently enrolled in the Human Development and Family Studies major. Based on the enrollments in these competitor institutions, it is possible our enrollments will exceed 200 majors.

According to the USBLS Occupational Outlook Handbook, jobs in Community and Social Service Occupations are expected to grow 14% in the next 10 years, faster than average.[3] Relevant jobs listed under this category include the following: health educators and community health workers, marriage and family

[2] 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.
[3] United States Bureau of Labor Statistics. *Occupational Outlook Handbook: Community and Social Service Occupations.* Retrieved November 13, 2018 from https://www.bls.gov/ooh/community-and-social-service/home.htm.

therapists, and social workers. According to the Maryland Occupational Projections, Community and Social Service occupations will increase by 3,573 from 2016-2026.[4]

D. Reasonableness of Program Duplication

Washington College is the only other institution in the state that offers a Human Development major. This program has a non-teacher certification track that is somewhat similar to the proposed UMD program curriculum, although the UMD program requires substantially more development courses as well as a statistics course. Because of this curricular difference, and because of enrollment size and location (with Washington College being a small liberal arts college on the Eastern Shore of Maryland), we believe that a similar program at UMD, which has the capacity to enroll more students and is located in the Washington, DC metropolitan area, will be viable and therefore a reasonable duplication.

Human Development as a program could be considered duplicative of Psychology or Family Science programs, which are offered at multiple institutions in the state, including UMD, which offers both a Psychology and Family Science program. Although there is some content overlap with these programs and Human Development, the emphases of these three undergraduate programs are different. For example, while all three majors include individual development over the lifespan, individual development is the central focus of the Human Development major and students will go into much greater depth and detail of individual development than in either Psychology or Family Sciences. In contrast, whereas families are considered within Human Development as a context for development, families are the central focus of Family Science majors and students undoubtedly go into much greater depth about families than would be possible in a Human Development major. Similarly, whereas topics like abnormal psychology may be included in Human Development coursework, the major will not offer as much depth as would the Psychology major. Conversely, a Psychology major will not go into as much depth in development theories across the lifespan as a Human Development program. Finally, the level of analysis differs across these three programs. In Human Development, the mission is to teach students about theoretical models that describe developmental change. These models are often abstract and broadly applicable across specific developmental patterns. For example, the same mechanism might explain how infants learn new words and how high school students learn algebra. Here the interest is in the theoretical model more than any particular developmental problem. In contrast, Family Science programs include theory but also covers more applied topics, such as family law and family economics. Psychology programs can also be highly theoretical with a clinical component, but the topics covered in a psychology major are less focused on developmental change and include a broader range of populations, behaviors, and contexts. The Psychology and Family Sciences departments at UMD support this new program.

E . Relevance to Historically Black Institutions (HBIs)

There are no Human Development programs offered by Maryland HBIs. Bowie State University has a Child & Adolescent Studies bachelor's program, which is similar to the proposed Human Development major. Despite the similarity in some of the required courses, however, the program at Bowie State does not include adult development and it emphasizes clinical experience as opposed to research experience.

[4] Maryland State Department of Labor, Licensing, and Regulation. *Maryland Occupational Projections – 2016-2026 – Workforce Information and Performance.* Keyword: community and social service. Retrieved November 13, 2018 from http://www.dllr.state.md.us/lmi/iandoproj/maryland.shtml.

Otherwise, although some HBIs offer Psychology or Family Science programs, these programs, as discussed in Section D, differ from Human Development programs.

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

UMD has already established itself in the field of Human Development, as our graduate program in Human Development has been offered for many years. UMD has also offered undergraduate coursework in Human Development for many years. 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. The curriculum builds upon existing undergraduate courses that are part of the existing Human Development minor, courses taught as part of the General Education curriculum, and courses that service programs both within the College of Education (e.g. Elementary and Secondary Education) as well as programs outside of the College (e.g. Criminal Justice, Hearing and Speech Sciences, etc.).

Faculty Oversight. The program will be housed in the Department of Human Development and Quantitative Methodology, College of Education. HDQM Department faculty have experience administering both graduate and undergraduate programs. A full-time professional track faculty member will be hired to serve as Program Director, and have overall responsibility for all academic and administrative aspects of the program.

Educational Objectives and Learning Outcomes. In preparation for career paths in Human Development, the program will train students with the objective of developing comprehensive skills in the following key areas:

1. Establish a knowledge base of human development across the lifespan ranging from a cognitive, social-emotional, and physiological perspective including the influences of the environmental, historical, and cultural contexts.
2. Develop skills of scientific inquiry and critical thinking.
3. Foster an awareness of the diversity of cultures, contexts, and abilities within which humans develop and how these differences impact development across the lifespan.
4. Achieve mastery in the art of communication related to scientific inquiry and theoretical analysis with a critical awareness of the variety of audiences with whom they may be interacting. Whereas writing is a necessary and critical focus, modes of communication also include oral communication and the use of social media.
5. Prepare to enter the workforce. Whereas the previous goals provide the foundation necessary for the 21st Century workforce in child development, a substantial focus will be preparation for employment in a variety of public and private sectors generated through internships and externships.

See Appendix A for detailed information on Learning Outcomes assessment.

Institutional assessment and documentation of learning outcomes. Undergraduate programs complete annual assessments, with each learning outcome evaluated at least once in a four-year cycle. Programs

report findings each fall in summary form following a template structure and are informed by a "best practices" guide and a rubric. Assessment summary reports for each college are collected by the College Coordinator, who works to promote high standards through support and guidance to programs and with continuous improvement practices.

Course requirements. The curriculum will consist of 45 credits organized into the following categories:

- 9 credits of introductory/gateway courses
- 6 credits of statistics and methods courses
- 9 credits of core Human Development courses at the 400 level
- 12 credits of restricted electives
- 3 credits of a pro-seminar
- 6 credits of field experience

Introductory/Gateway Courses (9 credits)			
Course	Title	Credits	General Education Designation
EDHD2XX (Course will be numbered and created when proposal is approved)	The Study of Human Development: Paradigms and Perspectives	3	
EDHD201	Learning How to Learn	3	History and Social Sciences
EDHD320	Human Development through the Lifespan	3	History and Social Sciences
Statistics and Method Courses (6 credits)			
EDHD306	Research Methods in Human Development	3	Fundamental Studies: Analytical Reasoning
EDMS451	Introduction to Educational Statistics	3	Fundamental Studies: Analytical Reasoning
Core Human Development Courses. Three of the following five core courses (9 credits):			
EDHD412	Infant Development	3	History and Social Sciences
EDHD411	Child Growth and Development	3	History and Social Sciences
EDHD413	Adolescent Development	3	History and Social Sciences
EDHD440	Adult Development	3	History and Social Sciences
EDHD460	Educational Psychology	3	History and Social Sciences
Four of the following elective courses (12 credits). Related courses from other departments may be used with departmental permission.			
EDHD230	Human Development and Societal Institutions	3	History and Social Sciences or Natural

			Sciences; Understanding Plural Societies
EDHD231	Inside 21st Century Creativity: How Creative Ideas, Concepts, and Products are Generated	3	History and Social Sciences; I-Series
EDHD310	Your Brain on Education: The Neuroscience of Learning and Development	3	History and Social Sciences; I-Series
EDHD402	Social Development	3	
EDHD414	Development of the Scientific Mind Across the Lifespan	3	
EDHD420	Cognitive Development and Learning	3	
EDHD421	Peer Relations	3	
EDHD425	Language Development and Reading Acquisition	3	
EDHD426	Cognition and Motivation in Reading	3	
EDHD430	Adolescent Violence	3	
EDHD445	Guidance and Young Children	3	
EDMS4XX (Course will be numbered and created when proposal is approved)	Applied Measurement: Issues and Practices	3	
Pro-seminar (3 credits)			
EDHD4XX (Course will be numbered and created when proposal is approved)	Pro-Seminar in Human Development	3	
Internship/Field Experience (6 credits)			
EDHD489	Field Experiences in Education	6	

See Appendix B for course descriptions.

General Education. Students will complete their General Education History & Social Science and Fundamental Studies: Analytical Reasoning requirements by way of fulfilling major requirements. Some major electives will also count for General Education requirements (see the table above for courses that count for general education requirements). Otherwise, students will have room in their schedules to fulfill the other General Education requirements.

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

Other Institutions or Organizations. The department will not contract with another institution or non-collegiate organization for this program.

Student Support. Students enrolled in this program will have access to all the resources necessary in order to succeed in the program and make the most of the learning opportunity. Students entering the university as either first-time college students or transfer students will learn about the program through their orientation program. Students entering the major as internal transfers will meet with an advisor in the program when they declare the major. Two full-time advisors will be dedicated to the major.

Marketing and Admissions Information. The program will be clearly and accurately described in the university website and marketed at university recruiting events.

H. Adequacy of Articulation

As with all students who have completed an Associate of Arts (AA) Degree at another institution, students entering the HD major with an AA degree will have completed all of their UMD General Education requirements, except for the upper-level professional writing requirement. Whereas there are no specific articulation agreements in place, the program in Human Development will allow for the fulfillment of certain course requirements from other institutions including community and local colleges, thus ensuring that students who transfer into the university will be at no disadvantage to complete their degree requirements in a reasonable time.

Course equivalencies from other institutions will be evaluated by the Director of the Undergraduate Program in accordance with university policy. For example, "Gateway" courses such as the statistics and methods courses or electives may be deemed as equivalent courses at other institutions. Such equivalencies would be on a case-by-case basis requiring the evaluation of syllabi.

I. Adequacy of Faculty Resources

Program faculty. Our nationally and internationally recognized faculty are teaching a growing number of undergraduate students who require a foundational knowledge of development and learning. Faculty routinely present at national and international conferences, and publish theoretical and empirical research articles in high impact peer-reviewed journals. Many of the faculty hold Fellow status in associations such as the American Psychological Association, the American Psychological Society, and the American Educational Research Association, and most serve, or have served, as consulting, associate, or principal editors of leading journals in the field, including the American Educational Research Journal, Contemporary Educational Psychology, Developmental Psychology, Child Development, the Journal of Applied Developmental Psychology, Adolescence, Human Development, Journal of Research in Adolescence, International Journal of Behavioural Development, Psychological Methods, Multivariate Behavioral Research, Journal of Educational and Behavioral Statistics, Educational and Psychological Measurement, Journal of Educational Measurement, and many others.

The department has several strengths that are reflected in faculty research areas. The developmental science faculty train students in areas of social, cognitive, emotional, self and biological domains of human development. In the educational psychology program, faculty focus on the cognitive, motivational, and sociocultural aspects of learning and development that take place in educational contexts. Early childhood faculty study the development and education of young children. The measurement, statistics, and evaluation faculty study the principles of measurement, applied statistics, and evaluation of institutional

and organizational programs and are considered one of the best quantitative methods faculty in the nation. Students enrolled in the proposed program will receive the highest quality instruction by faculty who are uniquely positioned to teach human development and quantitative research methodology. A total of 22 tenured/pre-tenured and clinical faculty have the responsibility for curriculum and programmatic decisions.

See faculty biographies in Appendix C.

Faculty training. Opportunities to improve teaching and learning in the program will be identified through program assessment process as described in Section M. UMD's Teaching and Learning Transformation Center provides instructional training resources, support, and consultations to instructors across the university.

For the learning management system, faculty teaching in this program will have access to teacher development opportunities available across 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.

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

The facilities, infrastructure, and instructional equipment that are already in existence are adequate to handle the demands of the proposed major and the course offerings within the program. There are few new courses proposed and the space needed for additional personnel is minimal.

All UMD students have access to the institutional electronic mailing system. This program is not a distance education program, however, student will have access to the campus learning management system for the elements of the courses that exist online.

L. Adequacy of Financial Resources

Resources for the new program will be drawn from those currently used by the department and College of Education.

See Appendix D: Resource and Expenditure Tables

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

By its very nature, Human Development theory and research requires experts and their students to examine diverse patterns of growth and development across social, cognitive, emotional, and physical domains throughout the lifespan. The field itself is largely defined by its focus on human diversity. Accordingly, the department adheres to the UMD's diversity goals as stated in the *Mission and Goals Statement*: "Providing equal educational opportunity, hiring and retaining a diverse faculty and staff of exceptional achievement, and recruiting and graduating talented students from traditionally underrepresented groups are institutional priorities."[5]

Once admitted, specific retention efforts will be employed to ensure the success of all students in the program. The department will:

- Employ a strong, faculty-directed advising model, in which students will be supported to examine their individual career and life goals and to design and succeed in a composite of required and elective courses that best facilitate those outcomes;
- Ensure that all courses address theory and research which examine central issues related to the (a) influence of diversity on growth and development and (b) practical implications for application of course content in diverse professional work-related and educational settings;
- Assist students in identifying and securing the most personally relevant and meaningful internship and service learning placements;
- Assist students in the design and implementation of a) an internship experience, or b) a faculty-advised Capstone Project or Honors Thesis, either of which will be strongly related to students' individual career goals and the work that is being completed in the end of program internship.

Learning outcomes associated with these projects will measure students' understanding of the needs of target populations of varying age, gender, race, and ethnicity.

Retention of our students, specifically those of underrepresented minority backgrounds, will happen through the organization of student groups and honor societies both lead by the students as well as those with dynamic interaction with the faculty. Such organizations include an undergraduate student organization (UGSO), a Human Development Honor Society, as well as participating department and college led groups (e.g. Center for Child Relationships and Culture; Center for Language and Literacy; etc.).

O. Relationship to Low Productivity Programs Identified by the Commission

[5] University of Maryland, College Park. (Aprl 29, 2014). *Mission and Goals Statement.* (p. 1). Retrieved November 15, 2018 from https://www.provost.umd.edu/Documents/UMCP-Mission-Statement-Final-2015.pdf.

N/A

P. Adequacy of Distance Education Programs

N/A

Appendix A: Learning Outcomes Assessment

The tables below list the intended student learning outcomes, organized by 5 overarching goals, followed by a detailed plan for how these outcomes will be emphasized by and assessed in the program.

Goal 1: Develop a comprehensive knowledge base in human development Students will:
1A. Understand central questions in the field of human development and the major theoretical approaches to them
1B. Describe the sequence of typical development and the underlying processes in the domains of cognitive, linguistic, social, and emotional development
1C. Recognize the importance of biology and environment, including context and culture on children's development and learning
1D. Understand how human development influences educational practice, and how different educational approaches affect learning and development
1E. Appreciate how theory and scientific research are addressed in applied in issues relating to children, family, education, and public policy

Goal 2: Develop core critical thinking and scientific literacy skills Students will:
2A. Formulate answerable questions about important issues in learning and development, as well as generate and evaluate methods for answering those questions
2B. Critically evaluate and reason about empirical evidence relevant to important issues in learning and development, and make informed arguments and decisions on the basis of empirical evidence
2C. Critically evaluate current policies and clinical/educational approaches that address important societal issues on the basis of evidence
2D. Apply these critical thinking and scientific literacy skills across a wide range and intersection of disciplines in development and education, in both research and applied settings

Goal 3: Develop understanding of and value ethical and social responsibility Students will:
3A. Understand and apply ethical standards in research and practice in human development
3B. Show awareness of the diversity of race, cultures, and contexts in which humans develop and grow
3C. Apply evidence from human development research to improve policy and practice that fosters ethical and social responsibility and promotes social justice

Goal 4: Develop key skills for communication and writing Students will:
4A. Clearly summarize, assess, and cite empirical evidence and theoretical perspectives, including describing methodology, results, limitations, and implications for a broader audience
4B. Formulate clear written arguments and substantively defend them with empirical evidence
4C. Present clear evidence-based arguments orally in ways that facilitate communication across a range of academic and non-academic audiences

Goal 5: Develop key professional skills Students will:
5A. Apply both specific knowledge in human development as well as general critical thinking, scientific literacy, and communication skills to career goals
5B. Organize, execute, and manage complex, multi-step research and writing projects
5C. Develop meaningful, purposeful, and realistic career goals for professional life post-graduation

Assessment of Student Learning Outcomes
Goal 1: Develop a comprehensive knowledge base in human development

	1A. Understand central questions in the field of human development and the major theoretical approaches to them	**1B. Describe the sequence of typical development and the underlying processes in the domains of cognitive, linguistic, social, and emotional development**	**1C. Recognize the importance of biology and environment, including context and culture on children's development and learning**	**1D. Understand how human development influences educational practice, and how different educational approaches affect learning and development**
Course(s) Targeting Sub-goal	EDHD 2AA – Study of Human Development: Paradigms & Perspect. EDHD 390 – Career Paths in Human Development EDHD 411 – Child Growth and Development EDHD 413 – Adolescent Development EDHD 420 – Cognitive Development and Learning EDHD 425 – Language Development and Reading Acquisition EDHD 460 – Educational Psychology	EDHD 320 – Human Development through the Lifespan EDHD 411 – Child Growth and Development EDHD 413 – Adolescent Development EDHD 420 – Cognitive Development and Learning EDHD 425 – Language Development and Reading Acquisition EDHD 460 – Educational Psychology	EDHD 201 – Learning How to Learn EDHD 230 – Human Development and Societal Institutions EDHD 310 – Your Brain on Education: The Neuroscience of Learning & Devel. EDHD 320 – Human Development through the Lifespan EDHD 411 – Child Growth and Development EDHD 413 – Adolescent Development EDHD 420 – Cognitive Development and Learning EDHD 425 – Language Development and Reading Acquisition EDHD 460 – Educational Psychology	EDHD 201 – Learning How to Learn EDHD 230 – Human Development and Societal Institutions EDHD 390 – Career Paths in Human Development EDHD 411 – Child Growth and Development EDHD 413 – Adolescent Development EDHD 420 – Cognitive Development and Learning EDHD 425 – Language Development and Reading Acquisition EDHD 460 – Educational Psychology
How Sub-goal is Assessed	• Written Assignments • Exams	• Written Assignments • Oral Presentations	• Written Assignments • Exams	• Written Assignments • Exams

Goal 2: Develop core critical thinking and scientific literacy skills

	2A. Formulate answerable questions about important issues in learning and development, as well as generate and evaluate methods for answering those questions	**2B. Critically evaluate and reason about empirical evidence relevant to important issues in learning and development, and make informed arguments and decisions on the basis of empirical evidence**	**2C. Critically evaluate current policies and clinical/educational approaches that address important societal issues on the basis of evidence**	**2D. Apply these critical thinking and scientific literacy skills across a wide range and intersection of disciplines in development and education, in both research and applied settings**
Course(s) Targeting Sub-goal	EDHD 306 – Research Methods EDHD 420 – Cognitive Development and Learning EDHD 425 – Language Development and Reading Acquisition EDHD 426 – Cognition and Motivation in Reading	EDHD 201 – Learning How to Learn EDHD 390 – Career Paths in Human Development EDHD 420 – Cognitive Development and Learning EDHD 425 – Language Development and Reading Acquisition EDHD 460 – Educational Psychology	EDHD 201 – Learning How to Learn EDHD 230 – Human Development and Societal Institutions EDHD 390 – Career Paths in Human Development EDHD 411 – Child Growth and Development EDHD 413 – Adolescent Development EDHD 414 – Development of the Scientific Mind Across the Lifespan EDHD 460 – Educational Psychology	EDHD 201 – Learning How to Learn EDHD 306 – Research Methods EDHD 411 – Child Growth and Development EDHD 413 – Adolescent Development EDHD 414 – Development of the Scientific Mind Across the Lifespan EDHD 425 – Language Development and Reading Acquisition EDHD 460 – Educational Psychology
How Sub-goal is Assessed	• Exams • Written Assignments • Case Study Presentation	• Written Assignments • Exams	• Written Assignments • Group Presentations • Group Debates	• Written Assignments • Group Presentations • Group Debates

Goal 3: Develop understanding of and value ethical and social responsibility

	3A. Understand and apply ethical standards in research and practice in human development	**3B. Show awareness of the diversity of race, cultures, and contexts in which humans develop and grow**	**3C. Apply evidence from human development research to improve policy and practice that fosters ethical and social responsibility and promotes social justice**
Course(s) Targeting Sub-goal	EDHD 4AA – Pro-seminar in Human Development EDHD 390 – Career Paths in Human Development EDHD 402 – Social Development EDHD 425 – Language Development and Reading Acquisition	EDHD 230 – Human Development and Societal Institutions EDHD 231 – Inside 21st Century Creativity EDHD 402 – Social Development EDHD 411 – Child Growth and Development EDHD 413 – Adolescent Development EDHD 414 – Development of the Scientific Mind Across the Lifespan EDHD 420 – Cognitive Development and Learning EDHD 425 – Language Development and Reading Acquisition EDHD 460 – Educational Psychology	EDHD 230 – Human Development and Societal Institutions EDHD 402 – Social Development EDHD 411 – Child Growth and Development EDHD 414 – Development of the Scientific Mind Across the Lifespan EDHD 425 – Language Development and Reading Acquisition
How Sub-goal is Assessed	• Written Assignments • Exams • Case Study	• Exams • Written Assignments • Group Presentations	• Exams • Written Assignments • Group Debates

Goal 4: Develop key skills for communication and writing

	4A. Clearly summarize, assess, and cite empirical evidence and theoretical perspectives, including describing methodology, results, limitations, and implications for a broader audience	**4B. Formulate clear written arguments and substantively defend them with empirical evidence**	**4C. Present clear evidence-based arguments orally in ways that facilitate communication across a range of academic and non-academic audiences**
Course(s) Targeting Sub-goal	EDHD 201 –– Learning How to Learn EDHD 231 – Inside 21st	EDHD 201 – Learning How to Learn EDHD 231 – Inside 21st Century Creativity	EDHD 201 – Learning How to Learn EDHD 231 – Inside 21st Century Creativity

	Century Creativity EDHD 310 – Your Brain on Education: The Neuroscience of Learning and Development EDHD 402 – Social Development EDHD 411 – Child Growth and Development EDHD 413 – Adolescent Development EDHD 414 – Development of the Scientific Mind Across the Lifespan EDHD 420 – Cognitive Development and Learning EDHD 425 – Language Development and Reading Acquisition EDHD 426 – Cognition and Motivation in Reading EDHD 460 – Educational Psychology	EDHD 310 – Your Brain on Education: The Neuroscience of Learning and Development EDHD 390 – Career Paths in Human Development EDHD 402 – Social Development EDHD 411 – Child Growth and Development EDHD 413 – Adolescent Development EDHD 414 – Development of the Scientific Mind Across the Lifespan EDHD 420 – Cognitive Development and Learning EDHD 425 – Language Development and Reading Acquisition EDHD 426 – Cognition and Motivation in Reading EDHD 460 – Educational Psychology	EDHD 310 – Your Brain on Education: The Neuroscience of Learning and Development EDHD 402 – Social Development EDHD 413 – Adolescent Development EDHD 425 – Language Development and Reading Acquisition EDHD 426 – Cognition and Motivation in Reading EDHD 460 – Educational Psychology
How Sub-goal is Assessed	• Final Project Multimedia Presentations • Group Presentations • Written Assignments	• Written Assignments • Exams • Group Presentations	• Final Project Multimedia Presentations • Group Presentations • Case Study Presentation

Goal 5: Develop key professional skills

	5A. Apply both specific knowledge in human development as well as general critical thinking, scientific literacy, and communication skills to career goals	**5B. Organize, execute, and manage complex, multi-step research and writing projects**	**5C. Develop meaningful, purposeful, and realistic career goals for professional life post-graduation**
Course(s) Targeting Sub-goal	EDHD 4AA – Pro-seminar in Human Development EDHD 390 – Career Paths in Human Development	EDHD 306 – Research Methods EDHD 390 – Career Paths in Human Development EDHD 411 – Child Growth and Development	EDHD 4AA – Pro-seminar in Human Development EDHD 390 – Career Paths in Human Development

	EDHD 426 – Cognition and Motivation in Reading	EDHD 425 – Language Development and Reading Acquisition EDHD 426 – Cognition and Motivation in Reading EDHD 460 – Educational Psychology	
How Sub-goal is Assessed	• Written Assignments • Exams	• Written Assignments	• Written Assignments

Appendix B: Course Descriptions

Introductory/Gateway Courses (9 Credits)

*EDHD2XX The Study of Human Development (3 Credits)
An introduction to the paradigms and perspectives that guide the study of human development across the lifespan in cognitive, social, physical and emotional domains. Topics of study include overlying principles, concepts, assumptions, theoretical frameworks, and research methods that influence ways in which development is conceptualized. The course is designed to provide insight into major questions of the day in human development and how these prevailing perspectives have evolved over time. This course will also help students understand how knowledge of theory and research is translated into practice in a variety of professional settings.
*This course will be created when the program proposal is approved.

EDHD201 Learning How to Learn (3 Credits)
Immerses students in the theoretical and empirical study of learning by engaging them in orchestrated experiences and activities drawn directly from the disciplinary research. Students achieve deep understanding of their own learning, as well as the means of enhancing that learning both in school and out-of-school contexts.

EDHD320 Human Development Through the Life Span (3 Credits)
Central concepts related to parameters of human development, individual and social, which arise throughout the life span. Continuity and change within the developing individual.

Statistics and Methods Courses (6 Credits)

EDHD306 Research Methods in Human Development (3 Credits)
Addresses the scientific concepts and principles central to the study of human behavior and development. Students will learn about basic research methods in studying human behavior in developmental context and will participate in experiential activities, such as conducting observations and collecting self-report data. Major themes: goals of developmental research, fundamental research designs, types of measurement, elements of good scientific writing, and ethical issues in the study of human development.

EDMS451 Introduction to Educational Statistics (3 Credits)
Introduction to statistical reasoning; location and dispersion measures; computer applications; regression and correlation; formation of hypotheses tests; t-test; one-way analysis of variance; analysis of contingency tables.

Core Human Development Courses (9 Credits)

EDHD411 Child Growth and Development (3 Credits)
Theoretical approaches to and empirical studies of physical, psychological and social development from conception to puberty. Implications for home, school and community.
EDHD412 Infant Development (3 Credits)
Infant development across domains, including perceptual, motor, cognitive, language, social and emotional functioning from pre-natal through third year of life.

EDHD413 Adolescent Development (3 Credits)
Adolescent development, including special problems encountered in contemporary culture. Observational component and individual case study.

EDHD440 Adult Development (3 Credits)
Major conceptual approaches to the study of adult development including physical, cognitive, social, emotional and self processes that take place within individuals as they progress from emerging adulthood through middle age.

EDHD460 Educational Psychology (3 Credits)
Application of psychology to learning processes and theories. Individual differences, measurement, motivation, emotions, intelligence, attitudes, problem solving, thinking and communicating in educational settings.

Elective Courses (12 Credits)

EDHD230 Human Development and Societal Institutions (3 Credits)
Development of the individual in the context of relationships with the formal and informal institutions of society. An examination of various aspects of development from the broad perspective of the social sciences.

EDHD231 Inside 21st Century Creativity: How Creative Ideas, Concepts, and Products are Generated (3 Credits)
Mechanisms of the creative mind. Psychological, social, sociological, developmental, cultural, educational, genetic and neural based roots of creativity.

EDHD310 Your Brain on Education: The Neuroscience of Learning and Development (3 Credits)
Investigation linking research in the brain science of learning and development, including the neural basis of academic skills, to achievement, disability, and broader applications to classroom learning. This course will focus on areas of education including language (spoken and written), conceptual change, numerical/quantitative processing, and social cognition as well as burgeoning areas of neuroscientific research in general cognitive processes such as attention, memory, and executive processing. These topics will be discussed with respect to typical and atypical development with some focus on developmental disabilities including autism, specific language impairment, reading and math impairment, and attention deficit disorders among others. This course will focus on both the theoretical perspectives and pragmatic issues of how evidence regarding brain development can or may be translated into useful or misleading information for educators, professionals, and parents/guardians of our children.

EDHD402 Social Development (3 Credits)
Social Development. Critical concepts and ideas of the study of child and adolescent social development. Focus on changes in interpersonal relationships, emotions, achievement-related behavior and competence, and functioning within the broader social context.

EDHD414 Development of the Scientific Mind Across the Lifespan (3 Credits)
Study of the educational, cognitive, social, and cultural factors that underlie the development of the scientific mind across the lifespan.

EDHD420 Cognitive Development and Learning (3 Credits)
Current developmental theories of cognitive processes such as language, memory, and intelligence and how differences in cognitive level (infancy through adolescence) mediate learning of educational subject matters.

EDHD421 Peer Relations (3 Credits)
Historical and theoretical underpinnings to contemporary research on peer interactions, relationships, and groups. Focus on (1) inter-dependencies of individual characteristics, social behaviors, social relationships; (2) relations between familial factors and extra-familial peer interactions and relationships; (3) normal and abnormal peer relationships; and (4) cross cultural universals and differences.

EDHD425 Language Development and Reading Acquisition (3 Credits)
This course focuses on young children's language development and the relationship between language and reading acquisition. Students will learn: concepts central to language development; language achievements at different ages; concepts of emergent literacy; models of reading acquisition and skilled reading.

EDHD426 Cognitive and Motivational Literacy Content (3 Credits)
Students preparing for secondary teaching will learn about the cognitive and motivational aspects of literacy and learning from text for the content areas of literature, science, history and mathematics. Different evidenced-based literacy approaches appropriate for content learning are presented. Characteristics of learning environments that enable students to engage productively with diverse texts, disciplinary tasks, and technological resources in content areas are identified.

EDHD430 Adolescent Violence (3 Credits)
Examines the roots of violence among adolescents and the extent to which this constitutes a problem in various settings. Research studies on its origins, prevention and intervention and implications for social policy are examined.

EDHD445 Guidance of Young Children (3 Credits)
Practical aspects for helping and working with children, drawing on research, clinical studies, and observation. Implications for day care and other public issues.

*EDMS4XX Applied Measurement: Issues and Practices (3 Credits)
Measurement theory and its application at an intermediate level; test development, validation and interpretation; issues and recent developments in measurement.
*Course will be created when program proposal is approved.

Appendix C. Faculty in Human Development and Quantitative Methodology

Faculty Info	Faculty Bio
Alexander, Patricia Ph. D. University of Maryland, College Park Professor; Educational Psychology Specialization palexand@umd.edu (301) 405-2821 Courses: EDHD201, EDH460	A former middle-school teacher, Dr. Alexander received her reading specialist degree from James Madison University in 1979 and her Ph.D. in reading from the University of Maryland in 1981. Her research focuses on literacy and reading comprehension, learning and academic development, critical and relational reasoning, epistemic beliefs, and expertise. After completing her Ph.D., she joined the faculty at Texas A&M University before returning to UMD as a professor in 1995. Her honors include the Oscar S. Causey Award for outstanding contributions to literacy research from the National Reading Conference (2001), the E. L. Thorndike Award for Career Achievement in Educational Psychology from APA Division 15 (2006), and the Sylvia Scribner Career Award from AERA Division C (2007). She has also received university-level honors for both her teaching and her research. Recently named as one of the most influential educational psychologists of the past decade (Patterson-Hazly & Kiewra, 2012), Dr. Alexander has served as President of Division 15 (Educational Psychology) of the APA, Vice-President of Division C (Learning and Instruction) of AERA, and Past-President of the Southwest Educational Research Association. Since receiving her Ph.D., Dr. Alexander has published over 270 articles, books, or chapters in the area of learning and instruction. She has also presented over 400 invited addresses or papers at national and international conferences. She currently serves as the senior editor of Contemporary Educational Psychology, was past editor of Instructional Science and Associate Editor of American Educational Research Journal-Teaching, Learning, and Human Development, and presently serves on over 10 editorial boards including those for Learning and Instruction, Educational Psychologist, and the Journal of Educational Psychology.
Bolger, Donald Ph. D. University of Pittsburgh Associate Professor; Developmental Science & Educational Psychology Specialization djbolger@umd.edu (301) 405-9103	Donald J. Bolger, Assistant Professor of Human Development & Quantitative Methodology, studies how the brain learns to read and what are the cognitive and neural bases of reading and language ability and disability. The core of his laboratory's research focus is on these key issues of reading from neurobiological, cognitive, developmental and educational perspectives. Reading is a complex cognitive skill that requires that small complex visual forms (letters) be accurately recognized and integrated with linguistic information from sound and meaning with the ultimate purpose of achieving comprehension. Thus, typical and atypical reading and language ability may be reflected in quite heterogeneous patterns of cortical activation stemming from visual, auditory or supramodal processing regions. Dr. Bolger employs multiple methods in structural and functional MRI to understand the dynamics of cortical networks in skilled and disabled readers, including functional connectivity analyses and diffusion

Courses: EDHD310, EDHD420, EDHD425	imaging. Dr. Bolger's lab is increasingly focusing on how the effects of intervention are reflected in cortex, specifically using executive function and working memory training paradigms. From school-based and cross-sectional paradigms to online adult training tasks, our work combines innovative and complex methodologies the combine MRI with event-related potentials (ERP) to understand development and learning. Dr. Bolger is an affiliate of the Center for Advanced Study of Language (casl.umd.edu) and a founding member of the Maryland Neuroimaging Center (mnc.umd.edu).
Butler, Lucas Ph.D. Stanford University Assistant Professor; Developmental Science Program lpbutler@umd.edu (301) 314-1815 Courses: EDHD411	Dr. Butler's research program explores the nuanced interplay between two critical components of early learning: the capacity to learn important information about the world by making inductive inferences on the basis of limited evidence, and the ability to flexibly and selectively learn from others. By investigating this interplay across several important areas of learning—causal reasoning, inductive generalization, categorization, and normative judgment—as well as over the course of development, he is working to generate broad conclusions about how early cognitive development is fundamentally shaped both by the social context in which it occurs, and by children's developing social cognitive capacities. Prior to joining the department, Dr. Butler completed his Ph.D. in Psychology from Stanford University, and was an Alexander von Humboldt Postdoctoral Fellow at the Max Planck Institute for Evolutionary Anthropology in Leipzig, Germany.
Cabrera, Natasha Ph. D. University of Denver Professor; Developmental Science Program ncabrera@umd.edu (301) 405-2827 Courses: EDHD411	Natasha Cabrera Natasha Cabrera received her Ph.D. in Educational and Developmental Psychology from the University of Denver and her MA degree from the University of Toronto. Dr. Cabrera joined the University of Maryland faculty in 2002 and arrived with several years of experience as an SRCD Executive Branch Fellow with the National Institute of Child Health and Human Development (NICHD). Her current research topics include: father–child and mother–child relationships, predictors of adaptive and maladaptive parenting, children's social and emotional development in different types of families and cultural /ethnic groups, and, the mechanisms that link early experience to children's later cognitive and social development. She has published in peer–reviewed journals on policy, methodology, theory and the implications of minority fathers' and mothers' parenting on children's cognitive and social development. She is the co-editor of the Handbook of Father Involvement: Multidisciplinary Perspectives, second edition (2012), and two co-edited volumes entitled Latina/o Child Psychology and Mental Health (2011). She won the National Council and Family Relations award for Best Research Article regarding men in families in 2009.
Dunbar, Kevin Ph. D.	Kevin Niall Dunbar is Professor of Human Development and Quantitative Methodology at the University of Maryland College Park. He received his Bachelor's and Master's degrees from the National

University of Toronto Professor; Developmental Science Program & Educational Psychology Specialization kndunbar@umd.edu (301) 405-7233 Courses: EDHD231, EDHD414, EDHD420	University of Ireland (Dublin) and his PhD from the University of Toronto. Professor Dunbar conducts research on the ways that children, students, artists and scientists think, reason, create and understand the world. He has investigated, children's learning, undergraduate student learning, and scientists creating new ideas –he has even investigated politicians! He focuses on reasoning strategies involved in analogy, causality, creativity, concept discovery and how these strategies are used by children, students, and scientists. He uses three converging methodologies to explore scientific, artistic, and critical thinking. First, he conducts naturalistic observations of scientists in their labs, students in undergraduate laboratory classes, and visitors to museums (usually families). Second, he conducts experiments with students generating theories, creating new concepts, conducting experiments, and interpreting new information. Third, he conducts neuroimaging research on students as they learn about Physics, Chemistry and Biology, as well as creating new ideas using analogy and causal thinking. Here, the goal is to discover optimal ways of presenting new concepts so that students can overcome blocks to learning. Specific topics of his research have been the roles of unexpected results in fostering discovery and invention, Gender in the scientific laboratory, and the roles of analogy and causal thinking in discovery and invention. Professor Dunbar has published in the fields of Education, Experimental Psychology, Cognitive Psychology, and Educational Neuroscience. In addition to publications in academic forums, his work has been featured in the New Yorker, WIRED magazine, Time ideas, Slate, and the Washington Post. He regularly speaks in North America, Asia, and Europe on the topics of Creativity, Analogy, and the effects of learning on the brain, and how to improve critical, creative, and scientific thinking across the lifespan.
Fox, Nathan Ph. D. Harvard University Distinguished University Professor; Developmental Science Program fox@umd.edu (301) 405-2816	Infant and Child Temperament; Development of emotion and emotion regulation; Human Developmental Neuroscience; Development of social cognition; Infant social cognition. Areas of Student Supervision: Infant cognitive/social development; Developmental Psychopathology; Human Developmental Neuroscience.
Hancock, Gregory Ph. D. University of Washington Professor; Measurement,	structural equation models; latent growth models; latent variable experimental design and analysis

Statistics and Evaluation UM Distinguished Scholar-Teacher ghancock@umd.edu (301) 405-3621 Courses: EDMS451	
Harring, Jeff Ph.D. University of Minnesota Associate Professor; Measurement, Statistics and Evaluation harring@umd.edu (301) 405-3630	Dr. Harring is Associate Professor of Measurement, Statistics, and Evaluation (EDMS) in the Department of Human Development and Quantitative Methodology at the University of Maryland. Prior to joining the the EDMS faculty in the fall of 2006, Dr. Harring received a M.S. degree in Statistics in 2004, and completed his Ph.D. in the Quantitative Methods Program within Educational Psychology in 2005--both degrees coming from the University of Minnesota. Before that, Dr. Harring taught high school mathematics for 12 years. Dr. Harring teaches a variety of graduate-level quantitative methods courses including: General Linear Models I & II, Statistical Analysis of Longitudinal Data, Statistical Computing and Monte Carlo Simulation, Multivariate Data Analaysis and Finite Mixture Models in Measurement and Statistics. Dr. Harring's research interests focus on applications of (i) statistical models for repeated measures data, (ii) linear and nonlinear structural equation models, (iii) multilevel models and (iv) statistical computing.
Jiao, Hong Ph.D. Florida State University Associate Professor; Measurement, Statistics and Evaluation hjiao@umd.edu (301) 405-3627	I am an Associate Professor in Measurement, Statistics and Evaluation in the Department of Human Development and Quantitative Methodology at the University of Maryland. I joined the faculty of EDMS in Fall 2007 after working as a psychometrician on K-12 state assessment programs for about four years.
Jones-Harden, Brenda Ph.D. Yale University Associate Professor; Developmental Science Program	development of maltreated foster, prenatally drug-exposed, and other children at-risk; prevention science and program evaluation

bjharden@umd.edu (301) 405-2580 Courses: EDHD220, EDHD412	
Killen, Melanie Ph.D. University of California, Berkeley Professor; Developmental Science Program mkillen@umd.edu (301) 405-3176	Melanie Killen is Professor of Human Development and Quantitative Methodology, Professor of Psychology (Affiliate), and the Associate Director for the Center for Children, Relationships, and Culture at the University of Maryland. She has received funding from the National Institute of Child Health and Human Development (NICHD), and the National Science Foundation (NSF) for her research on children's and adolescents' development. She was awarded the Distinguished Scholar-Teacher Award by the Provost from the University of Maryland for 2008-2009, and the Graduate Mentor of the Year Award as well as the Undergraduate Mentor of the Year Award from the Graduate School at the University of Maryland. Dr. Killen is the author of Children and Social Exclusion: Morality, Prejudice and Group Identity (2011) and co-editor of Social Development in Childhood and Adolescence: A Contemporary Reader (2011), and she has co–edited 6 books, including serving as the Editor of the Handbook on Moral Development (2006; 2014), and has published 2 monographs. She has published over 150 empirical journal articles and book chapters, and her book on morality in everyday life won the outstanding book award from the American Educational Research Association. Dr. Killen served as an expert witness in a school desegregation case, and helped prepare two Supreme Court briefs regarding the impact of school desegregation on children's social development. She has also served as a consultant for a federal initiative on interventions designed to reduce prejudice and to promote inclusion in U.S. elementary schools. Dr. Killen serves on the expert advisory panel for the new National Children's Museum in Washington, D.C., and her research has been profiled in The New York Times, The Washington Post, The Baltimore Examiner, The American Scientist, The Chronicle of Higher Education, American School Board Journal, Teaching Tolerance Magazine, ABCNews.com, Newsweek.com, Parenting, Parent–Wise Magazine, Redbook, Baby Journal, as well as featured on CNN AC360 with Anderson Cooper and Soledad O'Brien for a show on children and racial bias, which won an Emmy Award. Dr. Killen's research areas of expertise include children's and adolescents' social and moral reasoning, peer relationships, inclusion and exclusion, intergroup relationships and attitudes, prejudice and bias, gender roles, social development, social competence, theory of mind, and the role of school environments on child and adolescent development.

Klein, Elisa Ph.D. The Pennsylvania State University Associate Professor; Developmental Science Program elklein@umd.edu (301) 405-3122	Dr. Elisa Klein is an associate professor in the Department of Human Development and Quantitative Methodology, where she conducts research in child social policy, teacher education and young children's understanding of their early school experiences, and teaches graduate and undergraduate courses in child development and early education. Society for Research in Child Development and American Association for the Advancement of Science Policy Fellow. Executive branch AAAS policy fellows work in various federal agencies to learn about the federal policy making and the role of science in the policy-making process. Additionally, they and provide scientific expertise to policy makers throughout government. In 2009- 2010 Dr. Klein was an American Association for the Advancement of Science and Society for Research in Child Development Executive Branch Science and Technology Policy Fellow. Executive branch AAAS policy fellows work in various federal agencies to learn about the federal policy making and the role of science in the policy-making process. Additionally, they and provide scientific expertise to policy makers throughout government. While a Fellow, Dr. Klein worked in the Office of Behavioral and Social Sciences Research, in the Office of the Director at the National Institutes of Health in Bethesda, MD. She was also a Visiting Scientist and Child Development Research Fellow in the Research, Demonstration and Evaluation Branch (now part of Office of Planning, Research and Evaluation) of the Administration on Children and Families in the U.S. Department of Health and Human Services during an earlier leave from her academic position. Dr. Klein was the director of the University of Maryland's first child care research and demonstration program, the Center for Young Children. Prior to her positions at Maryland, she was a faculty member at The Ohio State University, Columbus. She has worked extensively with the Maryland State Department of Education in the development of early childhood policies such as universal preschool education, and has been a consultant to many local, non–profit, and governmental agencies, including Head Start, The Children's Defense Fund, the Department of Education, NIH and the National Science Foundation, on a variety of issues related to young children's development and education. Dr. Klein received her B.A. in Psychology with Honors from Kalamazoo College, and her M.S. and Ph.D. in Human Development from The Pennsylvania State University
Lissitz, Bob Ph.D. Syracuse University Professor; Measurement, Statistics and Evaluation	I am a professor of Education in the College of Education at the University of Maryland and Director of the Maryland Assessment Research Center for Education Success (MARCES). I got my degree from Syracuse University's psychology department with a specialization in measurement and statistics and the equivalent of an undergraduate major in mathematics. I took a one year post-doc at the Psychometric Laboratory in Chapel Hill and then took an academic position with the University of Georgia's psychology department. After 8 years and

rlissitz@umd.edu (301) 405-3620	promotion to associate professor, I moved in 1978 to the College of Education as professor and chairperson. I was the department chairperson for 26 years and have recently stepped down to return to the life of a faculty member. I have had many great experiences as an administrator, including chairing the campus Senate back in 1992 and chairing numerous campus committees before that time. I have been an Associate Dean for the College of Education developing a management information system and implementing total quality management efforts. The National Council on Measurement in Education and the American Educational Research Association have both asked me to chair a number of committees that have allowed me to provide a national service function. These include the Committee on External Relations, Diversity Relations, and the General Committee on Special Interest Groups. Many years ago, I was elected to Chair the Special Interest Group on Educational Statistics. For 1998-99, I chaired the NCME Awards Committee on Technical Contributions to Measurement Practice and in 2005 I chaired their elections committee.
Mix, Kelly Ph.D. University of Chicago Professor and Chair kmix@umd.edu (301) 405-5914	Kelly S. Mix, Ph.D., joined the UMD College of Education as the new chair of the Department of Human Development and Quantitative Methodology, effective on Sept. 1, 2016. A former elementary school teacher, Dr. Mix transitioned to academia early in her career, as she was interested in better understanding how different teaching processes work, as well as why some students struggled to learn concepts that came easily to others. Motivated to conduct research and influence policy at a broader level, she obtained a Ph.D. in psychology from the University of Chicago. Dr. Mix began her career in academia at Indiana University and most recently served as a professor in educational psychology at Michigan State University, where her work centered on applying the ideas from developmental psychology to educational practices. Her current research focuses on the development of mathematical cognition and number concepts in young children.
Prather, Richard W. Ph.D. University of Wisconsin-Madison Assistant Professor; Educational Psychology Specialization prather1@umd.edu (301) 405-2806	Richard Prather's laboratory investigates children's neurocognitive development with a primary focus on cognitive processes relevant to early mathematics learning. His research program uses neuroimaging, computational modeling and behavioral experimentation to develop mechanistic explanations of behavior and insights into the relationship between children's behavior and neural activity. In addition to laboratory based experiments he also works in schools to develop interventions to improve children's mathematics performance. This multifaceted approach allows him to investigate questions in a manner that integrates neuroscience with developmental theory and important educational applications. Prior to joining the university of Maryland Dr. Prather received degrees from the University of Wisconsin – Madison (PhD) and MIT (BS).

Courses: EDHD420	
Ramani, Geetha Ph.D. University of Pittsburgh Associate Professor; Developmental Science Program & Educational Psychology Specialization gramani@umd.edu (301) 405-8777 Courses: EDHD411, EDHD413	Geetha Ramani is an Associate Professor of Human Development and Quantitative Methodology. Before coming to the University of Maryland in 2008, Dr. Ramani received her Ph.D. in Developmental Psychology from the University of Pittsburgh and worked as a Postdoctoral Research Associate in Cognitive Development at Carnegie Mellon University. Dr. Ramani's research focuses on understanding how children's social interactions influence their cognitive development, mainly in the areas of mathematics and problem solving. Specifically, Dr. Ramani examines how children learn early math and problem-solving skills through play and informal learning activities, such as playing with games and blocks. She also investigates how parent-child interactions, parental beliefs, and the early home environment can contribute to children's development in these areas. Dr. Ramani is also interested in the development and correlates of peer cooperation in young children. Together, Dr. Ramani's work focuses on the benefits and unique processes of learning through cooperation and joint play with adults and peers, and their importance for educational practices with young children.
Rubin, Kenneth Ph.D. Pennsylvania State University Professor; Developmental Science Program krubin@umd.edu (301) 405-0458 Courses: EDHD421	Kenneth H. Rubin (B.A., McGill University, 1968; Ph.D., Pennsylvania State University, 1971) is Professor of Human Development and Quantitative Methodology and Founding Director, Center for Children, Relationships, and Culture at theUniversity of Maryland. Rubin's research interests are focused on such topics as social, emotional, and personality development; social competence; social cognition; play; aggression; social withdrawal/behavioral inhibition/shyness; peer relationships and friendship; parenting and parent-child relationships; and cross-cultural studies. Many of his over 300 peer-reviewed publications have been co-authored by colleagues on five continents. As Director, International Consortium on the Study of Children, Relationships, and Culture (research sites include Australia, Brazil, Canada, China, India, Italy, Korea, Oman, Portugal, and the USA), he and his colleagues have studied social and emotional development from cultural and cross-cultural perspectives. Rubin's current projects include a National Institute of Mental Health funded 12-year longitudinal research project entitled 'Friendship and psychosocial adjustment in middle childhood and adolescence;' a National Institute of Child Health and Human Development funded project 'Social outcomes in pediatric traumatic brain injury;' and a National Institute of Mental Health funded project (with Professor Andrea Chronis-Tuscano, Psychology Department), "A Multi-Component Early Intervention for Socially Inhibited Preschool Children. Rubin was the elected President of the International Society for the Study of Behavioral Development (1998-2002), an elected member of

	the Society for Research in Child Development Governing Council (2009-2015), and an elected member of the American Psychological Association, Developmental Psychology Division Executive Board (1987-1990). He has served as Associate Editor of Child Development (1981-1984; 1998-2001). In addition, he has been a member of the National Institute of Child Health and Human Development study section on Human Development and Aging as well as the National Institute of Mental Health's study section on Risk and Prevention. Rubin is a Fellow of the American and Canadian Psychological Associations, the Association of Psychological Science, and the International Society for the Study of Behavioral Development. Among his honors are the Society for Research in Child Development Award for distinguished Contributions to Understanding International, Cultural and Contextual Diversity in Child Development; the International Society for the Study of Behavioral Development Award for Distinguished Contributions to the International Advancement of Research and Theory in Behavioral Development; the Developmental Psychology Mentor Award of the American Psychological Association; the Pickering Award for Outstanding Contribution to Developmental Psychology in Canada; and the Killam Research Fellowship (Canada Council)
Stapleton, Laura Ph.D. University of Maryland Associate Professor; Measurement, Statistics and Evaluation lstaplet@umd.edu (301) 405-1933 Courses: EDMS451	Laura M. Stapleton is an Associate Professor in Measurement, Statistics and Evaluation (EDMS) in the Department of Human Development and Quantitative Methodology at the University of Maryland. Additionally, she serves as the Associate Director of the Research Branch of the Maryland State Longitudinal Data System Center. She joined the faculty of EDMS in Fall 2011 after being on the faculty in Psychology at the University of Maryland, Baltimore County and in Educational Psychology at the University of Texas, Austin. Each year she serves on the faculty of the National Center for Education Research (NCER) funded Summer Research Training Institute on Cluster Randomized Trials at Northwestern University. Prior to earning her Ph.D. in Measurement, Statistics and Evaluation from the University of Maryland in 2001, she was an economist at the Bureau of Labor Statistics and, subsequently, conducted educational research at the American Association of State Colleges and Universities and as Associate Director of institutional research at the University of Maryland.
Sweet, Tracy Ph.D. Carnegie Mellon University Assistant Professor;	I am an Assistant Professor in Measurement, Statistics and Evaluation in the Department of Human Development and Quantitative Methodology at the University of Maryland. Prior to this appointment, I was in the Department of Statistics at Carnegie Mellon University as a postdoctoral fellow. My degrees include Ph.D. and M.S. in Statistics from Carnegie Mellon University and M.A. in Mathematics from Morgan State

Measurement, Statistics and Evaluation tsweet@umd.edu (301) 405-3623	University. I also taught high school mathematics for Baltimore County Public Schools. My research focuses on developing multilevel statistical social network models and on models for interventions on social networks in particular. I am also interested in statistical methodology for large-scale educational interventions and recently started studying teacher rating models.
Torney-Purta, Judith Ph.D. University of Chicago Professor; Developmental Science Program & Educational Psychology Specialization jtpurta@umd.edu (301) 405-2806	social/political cognition; civic education cross-nationally; cross-cultural and inter-cultural studies; research related to social policy; Interaction in technology-rich environments; social studies and history learning. Areas of Student Supervision: Social development and social cognition (pre-school through adult); applied cognitive psychology; gender roles; cross-cultural and inter-cultural studies; research related to social policy; social studies and history learning. Due to expected retirement in June 2015 I am not accepting new students, though I continue to teach, publish with students and serve on committees for doctoral students.
Wang, Min Ph.D. Ontario Institute for Studies in Education/University of Toronto Professor; Educational Psychology Specialization & Developmental Science Program minwang@umd.edu (301) 405-8798 Courses: EDHD420, EDHD425, EDHD460	Dr. Min Wang received her Ph.D. in Applied Cognitive Science from the University of Toronto in 2000. Upon graduation she completed her post-doctoral training at the Learning Research and Development Center at the University of Pittsburgh, funded by a fellowship from the Social Sciences and Humanities Research Council of Canada. She became a member of the Faculty of Human Development at the University of Maryland in 2002. Dr. Wang's research interests are in the area of language and reading development. Specifically, she is interested in how cross language and writing system differences impact learning to speak and read in a first and second language. Her recent work has mainly focused on Chinese-English, Korean-English, Spanish-English bilingual children and adults, funded by NIH/NICHD, NSF, and Spencer Foundation. Dr. Wang is also interested in extending her work to other bilingual populations involving various languages and writing systems in the world. Dr. Wang has been serving on the editorial boards of Applied Psycholinguistics, Writing Systems Research, Contemporary Educational Psychology, and International Multilingual Research Journal. She has served as the Director of Graduate Studies in her department and the Executive Committee of the NSF-IGERT program at the University of Maryland in Biological and Computational Foundations of Language Diversity. She is a Fellow of the Association of Psychological Science (APS) and Psychonomic Society.
Wentzel, Kathryn Ph.D.	Kathryn Wentzel is a Professor of Human Development in the Department of Human Development, Learning, and Quantitative

Stanford University Professor; Developmental Science Specialization & Educational Psychology Specialization wentzel@umd.edu (301) 405-2810 Courses: EDHD402	Methodology. She received her Ph.D. in Psychological Studies in Education from Stanford University in 1987, after which she held post-doctoral positions at the Center for the Study of Families, Children, and Youth at Stanford and in the developmental psychology program in the Department of Psychology at the University of Illinois, Urbana-Champaign. Dr. Wentzel's research examines the social correlates and antecedents of adolescent motivation and achievement. This work includes a focus on the nature of teacher-student relationships and teacher supports as predictors of young adolescents' goal pursuit, prosocial behavior, and academic performance. A related strand of her work has examined peer relationship configurations (peer status, peer networks, and friendships) and supports (e.g., emotional support from peers) as predictors of these same outcomes. Her research is school-based, relies on a variety of research methods, and focuses on adolescent students from diverse backgrounds. Dr. Wentzel has published over 100 articles and book chapters based on this work andhas co-edited books on achievement motivation, Social motivation: Understanding children's school adjustment (1996), and Handbook of motivation at school (2009; 2015), and social influences on school outcomes, Handbook of Social Influences in School Contexts: Social-Emotional, Motivation, and Cognitive Outcomes. She is currently editor of Educational Psychologist and past editor of the Journal of Applied Developmental Psychology. Dr. Wentzel is past Vice-President of Division E (Counseling and Human Development, AERA), past Interim Chair of HDQM, and has Fellow status in the American Psychological Association, Division 15, and American Educational Research Association, Division E.
Wigfield, Allan Ph.D. University of Illinois, Urbana Professor; Developmental Science Program & Educational Psychology Specialization awigfiel@umd.edu (301) 405-2809 Courses: EDHD413	Dr. Wigfield is Professor, Distinguished-Scholar Teacher, and Director of Human Development Graduate Studies in HDQM. He also is an Honorary Faculty Member in Psychology at the University of Heidelberg, Germany. He received his Ph. D. in educational psychology from the University of Illinois, and then went to the University of Michigan on a postdoctoral fellowship in developmental psychology. His research interests concern the development of children's achievement motivation, children's motivation for reading and how it is influenced by different reading instructional practices, and gender differences in achievement motivation. Dr. Wigfield has authored more than 130 peer-reviewed journal articles and book chapters on children's motivation and other topics, including the chapter on the development of motivation in the Handbook of child psychology (6th and 7th editions). He was Associate Editor of the Journal of Educational Psychology from 2000 to 2002 and Associate Editor of Child Development from 2001 to 2005. He was editor of the teaching, learning, and human development section of the American

	Educational Research Journal from 2007-2010. Dr. Wigfield has one awards for his research and also for his teaching
Yang, Ji Seung Ph.D. University of California – Los Angeles Assistant Professor; Measurement, Statistics and Evaluation jsyang@umd.edu (301) 405-6073	Dr. Yang is an Assistant Professor of Measurement, Statistics, and Evaluation (EDMS) in the Department of Human Development and Quantitative Methodology at the University of Maryland. Before joining the EDMS faculty in the fall of 2013, Dr. Yang worked as a postdoctoral researcher at University of California - Los Angeles (UCLA) where she received her Ph.D. in the Social Research Methodology Program (focus: Advanced Quantitative Methods in Educational Research) within the School of Education and Information Studies in 2012. Prior to joining UCLA, she earned her M.A. and B.A. in Education at Yonsei University, Korea. Dr. Yang's research interests focus on measurement and advanced quantitative research methods in social sciences. The research interests encompass 1) development of statistical models that incorporate measurement errors in the frameworks of Item Response Theory, Generalizability Theory, Hierarchical Linear Modeling, and Latent Variable Modeling, and 2) development of multilevel/multidimensional item response model with efficient computation.

Appendix D: Resource and Expenditure Tables

TABLE 1: RESOURCES

Resources Categories	Year 1	Year 2	Year 3	Year 4	Year 5
1.Reallocated Funds*	$341,121	$418,050	$499,341	$512,521	$526,097
2. Tuition/Fee Revenue (c+g below)	$ -	$ -	$ -	$ -	$ -
a. #FT Students	35	70	105	105	105
b. Annual Tuition/Fee Rate	$ 13,575	$ 13,982	$14,402	$14,834	$15,279
c. Annual FT Revenue (a x b)	$ -	$ -	$ -	$ -	$ -
d. # PT Students	5	10	20	20	20
e. Credit Hour Rate	$565.40	$582.36	$599.83	$617.83	$636.36
f. Annual Credit Hours	16	16	16	16	16
g. Total Part Time Revenue (d x e x f)	$ -	$ -	$ -	$ -	$ -
3. Grants, Contracts, & Other External Sources	$ -	$ -	$ -	$ -	$ -
4. Other Sources	$ -	$ -	$ -	$ -	$ -
TOTAL (Add 1 - 4)	**$341,121**	**$418,050**	**$499,341**	**$512,521**	**$526,097**

*Reallocated funds have come from the Dean's office of the College of Education for the Program Director and FT lecturer. In addition, the department is hiring two TT lines this year with another expected in the following years to replace retiring faculty. In addition, current TT faculty and Graduate Student TAs will shift teaching toward gateway and core courses as well as popular electives.

TABLE 2: EXPENDITURES

Expenditure Categories	Year 1	Year 2	Year 3	Year 4	Year 5
1. Faculty (b+c below)	$133,000	$205,485	$282,199	$290,665	$299,385
a. #FTE	1.0	1.5	2.0	2.0	2.0
b. Total Salary	$100,000	$154,500	$212,180	$218,545	$225,102
c. Total Benefits	$33,000	$50,985	$70,019	$72,120	$74,284
2. Admin. Staff (b+c below)	$99,750	$102,743	$105,825	$109,000	$112,270
a. #FTE	1.0	1.0	1.0	1.0	1.0
b. Total Salary	$75,000	$77,250	$79,568	$81,955	$84,413
c. Total Benefits	$24,750	$25,493	$26,257	$27,045	$27,856
3. Total Support Staff (b+c below)	$0	$0	$0	$0	$0
a. #FTE	0.0	0.0	0.0	0.0	0.0
b. Total Salary	$0	$0	$0	$0	$0
c. Total Benefits	$0	$0	$0	$0	$0
4. Graduate Assistants (b+c)	$48,371	$49,822	$51,317	$52,857	$54,442
a. #FTE	1.0	1.0	1.0	1.0	1.0
b. Stipend	$23,431	$24,134	$24,858	$25,604	$26,372
c. Tuition Remission	$17,208	$17,724	$18,256	$18,804	$19,368
d. Benefits	$7,732	$7,964	$8,203	$8,449	$8,703
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	$50,000	$50,000	$50,000	$50,000	$50,000
TOTAL (Add 1 - 8)	**$341,121**	**$418,050**	**$499,341**	**$512,521**	**$526,097**

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 Neuroscience

COMMITTEE: Education Policy and Student Life

DATE OF COMMITTEE MEETING: Tuesday, January 15, 2019

SUMMARY: The University of Maryland, College Park proposes to offer a Bachelor of Science degree program in Neuroscience (NEUR). This new major will provide better academic opportunities for students in this well-defined but broad discipline than the university currently offers, through a sustainable, attractive, and intellectually cohesive STEM major that crosses the boundaries of existing academic units. Currently, neuroscience-related courses are primarily taught in biological sciences and psychology; the new major will combine coursework from these two areas with additional courses specific to the discipline, offering rigorous training in the interdisciplinary study of brain and behavior. Understanding the brain and nervous system requires integrative studies from many disciplines, such as anatomy, physiology, molecular biology and biochemistry, behavioral and cognitive sciences as well as computational methods. Many major research universities already have neuroscience undergraduate majors. This new program aligns well with the existing multidisciplinary research and graduate training program in Neuroscience and Cognitive Science (NACS), which was established in 1996. In addition to academic department affiliations, instructional faculty in the NEUR program will have direct connection to the NACS program, the Maryland Neuroimaging Center, the Language Science Center, and the scientific components of the new Cole Field House project as well as a newly developing campus-wide initiative in Brain & Behavior.

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 Education Policy and Student Life Committee recommend that the Board of Regents approve the proposal from the University of Maryland, College Park to offer the Bachelor of Science in Neuroscience.

COMMITTEE ACTION:		DATE: January 15, 2019
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

November 26, 2018

Chancellor Robert L. Caret
University System of Maryland
3300 Metzerott Road
Adelphi, MD 20783

Dear Chancellor Caret:

I am writing to request approval for a new Bachelor of Science program in Neuroscience. 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 November 14, 2018. 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
Amitabh Varshney, Dean, College of Computer, Mathematical, and Natural Sciences

UNIVERSITY SYSTEM OF MARYLAND INSTITUTION PROPOSAL FOR

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

University of Maryland, College Park
Institution Submitting Proposal

Neuroscience
Title of Proposed Program

Bachelor of Science	**Fall 2019**
Award to be Offered	Projected Implementation Date
	26.1501
Proposed HEGIS Code	Proposed CIP Code
Jointly Operated by the Biology and Psychology Departments	Katherine Russell, Associate Dean, College of Behavioral and Social Sciences
Department in which program will be located	Department Contact
301-405-1692	krussell@umd.edu
Contact Phone Number	Contact E-Mail Address
Signature of President or Designee	11-27-2018
	Date

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

Description. The Bachelor of Science in Neuroscience will offer rigorous training in the interdisciplinary study of brain and behavior. Students will complete a required set of neuroscience courses as well as a supporting sequence of coursework in mathematics, biology, chemistry, physics, and psychology. Students will then choose an upper-level specialization in either (1) cellular, molecular, and physiological neuroscience or (2) behavioral and cognitive neuroscience. The Neuroscience major prepares students for a broad range of career paths including: scientific research, medicine, clinical psychology, allied health professions, or science-related government, nonprofit, or private sector employment.

Relation to Strategic Goals. The proposed Neuroscience major relates to UMD's strategic goals by adding to its STEM program offerings. UMD states the following undergraduate education objective in its *Mission and Goals Statement*: "Increase the number of STEM graduates by creating new programs."[1] Currently, individual neuroscience courses are offered by the university but students wishing to major in neuroscience do not have that option. Students interested in neuroscience must either enroll in the Biological Sciences or Psychology programs. By establishing this new major, UMD will not only add to its STEM offerings, but will also attract talented students who may not have chosen UMD because of its lack of a neuroscience major. The recruiting value of this program relates directly to UMD's strategic goal of attracting more talented students to the university, particularly from the state of Maryland.[2] The new program will also reduce the demand on two programs that are in heavy demand: Psychology (813 enrolled majors in Fall 2017) and Biological Sciences (1,664 enrolled majors in Fall 2017). This redistribution of majors is also aligned with the university's strategic goal "to create a better distribution of undergraduate students among major programs to avoid overcrowding and the resulting student dissatisfaction."[3]

Funding. Resources for the new program will be drawn from those currently used by the sponsoring departments on neuroscience undergraduate education, reallocated funds from campus, and new resources to the university provided through state legislation, for which neuroscience is an identified priority area.

Institutional Commitment. The program will be administered by the Department of Biology (within the College of Computer, Mathematical, and Natural Sciences) and the Department of Psychology (within the College of Behavioral and Social Sciences). These departments already offer courses in

[1] University of Maryland, College Park. (April 29, 2014). *Mission and Goals Statement.* (p. 5). Retrieved October 29, 2018 from: https://www.umd.edu/history-and-mission.
[2] University of Maryland, College Park. (May 21, 2008). *Transforming Maryland: Higher Expectations. The Strategic Plan for the University of Maryland.* (p. 13). Retrieved October 29, 2018 from: http://www.provost.umd.edu/SP07/StrategicPlanFinal.pdf.
[3] University of Maryland, College Park. (May 21, 2008). *Transforming Maryland: Higher Expectations. The Strategic Plan for the University of Maryland.* (p. 12). Retrieved October 29, 2018 from: http://www.provost.umd.edu/SP07/StrategicPlanFinal.pdf.

neuroscience and degree programs in Biological Sciences and Psychology, respectively. Accordingly, the departments have the administrative, instructional, advising, and facilities infrastructure in place to operate the program. The university will provide additional resources needed for administration, instruction, advising, laboratory, and office space to support the full degree 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. Understanding the brain and nervous system is a societal need that requires *integrative* studies from many disciplines, including anatomy, physiology, molecular biology and biochemistry, behavioral and cognitive science as well as computational methods. The proposed major will integrate these disciplines and provide in-depth knowledge of neuroscience and its core aspects: molecular/cellular, circuit, systems, and behavioral. Neuroscience has been recognized as a cohesive academic discipline in the United States since the 1960's. The national Society for Neuroscience was formed in 1969 and had its first conference in 1971 with 1500 attendees and now regularly includes more than 30,000 colleagues from more than 80 countries. Many peer institutions, including all but two Big 10 Universities (Illinois and Maryland), developed thriving neuroscience undergraduate majors decades ago. Some examples of universities with vibrant undergraduate neuroscience programs include Duke University, Johns Hopkins University, University of Michigan, and The Ohio State University.

At the University of Maryland, the Neuroscience and Cognitive Sciences (NACS) Ph.D. program was established in 1996, followed by an undergraduate minor in neurosciences in 2006. In 2018, there is more undergraduate interest in neuroscience and stronger campus investment in neuroscience-related education and research than ever before. The Brain & Behavior Initiative, the Maryland Neuroimaging Center, the Language Science Center, and the scientific components of the Cole Field House Project are important evidence of neuroscience as a strong focus of campus research and educational strength.

State Plan. The proposed program in Neuroscience aligns with the *Maryland State Plan for Postsecondary Education'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."[4] Career advising will not only be integrated with student advising, it will also be incorporated into the program coursework. One of the learning outcomes for the program is for students to develop an appreciation of possible career paths available to students proficient in neuroscience. All of the core courses for the program will help students achieve this outcome. Furthermore, the linkages to the aforementioned research centers and other faculty researchers will provide students with a variety of options to engage in neuroscience research.

[4] 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.

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

Neuroscience itself is not a career category tracked by U.S. or State occupational projection services, but the discipline offers a strong and broad scientific background for students interested in a wide variety of careers ranging from medicine, allied health sciences, scientific research, medical technology, technology-related business, health or technology policy, public service and non-profit sector, government service, health insurance, public health, social services, psychological services, and others. The US Occupational Outlook Handbook for medical scientists alone shows a faster than average (13%) increase in jobs between 2016 and 2026.[5] The State of Maryland Occupational Projections for the category Medical Scientists, Except Epidemiologists show a 9.58% increase between 2016 and 2026 with 445 expected positions to be gained during this time.[6]

The best evidence for neuroscience program market demand comes from UMD's current program offerings in Biological Sciences and Psychology. The Biological Sciences major has a Physiology & Neurobiology specialization that has more than 700 enrolled students. The new Neuroscience major is projected to grow over a 2 or 3-year period to a steady state of approximately 500 students. This number is a conservative estimate based on the enrollments of established neuroscience majors at peer institutions. For example, the University of Michigan's neuroscience major has 500 majors. The Ohio State University has 1000 neuroscience majors. We predict that 50% (250) of neuroscience students would have previously selected Biological Sciences as a major, 20% (100) would have selected Psychology, and 30% (150) of the students would not have previously enrolled at Maryland.

D. Reasonableness of Program Duplication

The only two bachelor programs in neuroscience in the State of Maryland are at Johns Hopkins University and Notre Dame College of Maryland. Although the University of Maryland competes with Johns Hopkins University for a very small number of the most academically talented freshmen who are Maryland residents, the institutions and programs will not be duplicative or especially competitive. Even though Johns Hopkins has more than 300 students in its program, according to MHEC data, we believe there is sufficient demand for both programs based on the number of potential students already at UMD. Notre Dame College of Maryland is a very small women's college and not directly competitive with a large public flagship. Rather, the University of Maryland is more likely to compete with schools outside of Maryland, such as other Big 10 flagships and large public universities for neuroscience majors, especially but not limited to the University of Michigan, Penn State, and The Ohio State University.

[5] United States Bureau of Labor Statistics. *Occupational Outlook Handbook: Medical Scientists.* Retrieved October 31, 2018 from: https://www.bls.gov/ooh/life-physical-and-social-science/medical-scientists.htm.
[6] State of Maryland Department of Labor, Licensing & Regulation. *Maryland Occupational Projections – 2016-2026 – Workforce Information and Performance.* Retrieved October 31, 2018 from: http://www.dllr.state.md.us/lmi/iandoproj/maryland.shtml.

E . Relevance to Historically Black Institutions (HBIs)

No such program currently exists at any of Maryland's Historically Black Institutions (HBIs).

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

UMD has already established itself in the field of neuroscience, as our Neuroscience and Cognitive Sciences graduate program has been offered for many years. UMD has also offered undergraduate coursework in neuroscience for a number of years. 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. Neuroscientist and Dean of the College of Behavioral and Social Sciences Gregory Ball assembled and chaired the committee that designed the academic curriculum for this new major. The committee consisted primarily of neuroscience faculty at University of Maryland, along with knowledgeable academic administrators. This committee considered the course structure and content of a number of other neuroscience undergraduate programs to ensure the curriculum is comparable in course scope, depth, and course requirements to institutional peers.

Faculty Oversight. An oversight committee will be comprised of at least six faculty members. This committee will provide academic oversight for the major, review curricular modifications, and oversee the annual learning outcomes assessment for the major. An undergraduate director will be selected to oversee daily operations of the program.

Educational Objectives and Learning Outcomes. After completing this program, participants will:

1. Develop a knowledge base in the field of neuroscience and supporting disciplines
    a. Understand the fundamental principles of neuroscience across all levels of analysis – molecular/cellular, circuits, systems, and behavior
    b. Understand the principles of evolution, especially as they apply to the nervous system and behavior
    c. Develop additional expertise and depth of knowledge in at least one area of neuroscience (molecular/cellular, circuits, systems, and behavior)
    d. Be able to address a question in neuroscience by integrating information from multiple levels of analysis

2. Understand the current techniques and strategies in neuroscience research
    a. Understand the theory and practice of important current neuroscience research techniques, along with their strengths and limitations
    b. Acquire laboratory experience through neuroscience courses or research
    c. Develop skills in data analysis using relevant quantitative and programming methods

d. Obtain training to work comfortably and successfully within a research team or equivalent experience

3. Develop competence in scientific reasoning and critical thinking
   a. Be able to critically evaluate scientific literature, including assessment of the problems addressed, methodology used (including statistical analyses), and conclusions drawn
   b. Demonstrate skill in innovative and integrative thinking and problem-solving
   c. Demonstrate skill in experimental design and interpretation

4. Develop effective professional communication skills
   a. Demonstrate proficiency in clear, concise, and graceful writing
   b. Demonstrate proficiency with oral communication in a range of professional situations
   c. Demonstrate proficiency in graphical presentation of information integrated into both written and oral presentations

5. Understand the role of neuroscience in social and cultural contexts as well as the influences of social and cultural context on neuroscience
   a. Understand the influences, current and potential, of neuroscience on other fields such as medicine, education, the arts, and the social sciences
   b. Recognize the relationships between scientific research and the culture(s) in which it is embedded
   c. Understand and follow ethical practices in academic study, scientific research, and professional life

6. Develop an appreciation of possible career paths available to students proficient in neuroscience
   a. Understand the activities, opportunities, and responsibilities of the individual scientist within the scientific community
   b. Recognize the range of career opportunities outside academia
   c. Develop and, as far as possible, implement plans for career development

See Appendix A for more information on learning outcomes assessment.

Institutional assessment and documentation of learning outcomes. Undergraduate programs complete annual assessments, with each learning outcome evaluated at least once in a four-year cycle. Programs report findings each fall in summary form following a template structure and are informed by a "best practices" guide and a rubric. Assessment summary reports for each college are collected by the College Coordinator, who works to promote high standards through support and guidance to programs and with continuous improvement practices.

Course requirements. The curriculum will consist of 76-80 credits organized into the following categories:

- 13 credits of neuroscience core courses
- 47 credits of supporting courses in mathematics, statistics, biological sciences, chemistry, physics, psychology, along with UNIV100.

- 16-20 credits of specialization credits (two specializations offered: Molecular, Cellular, and Physiological; and Behavioral and Cognitive).

Neuroscience Core Courses (13 credits)			
Course	Title	Credits	General Education Designation
*NEUR200	Introduction to Neuroscience	3	Natural Sciences
*NEUR305	Neuroscience Fundamentals I	3	
*NEUR306	Neuroscience Fundamentals II	3	
*NEUR405	Neurobiology Lab	4	

Required Supporting Courses (47 credits)			
Course	Title	Credits	General Education Designation
MATH135 or 140	Discrete Math for Life Sciences or Calculus I	4	Fundamental Studies Math or Analytical Reasoning
MATH136 or 141	Calculus for Life Sciences or Calculus II	4	
Statistics Course	Statistics courses from Biometrics (BIOM301), Biostatistics (EPIB300), Psychology (PSYC200), Statistics (STAT400 or STAT464)	3	
BSCI170 & 171	Principles of Molecular and Cellular Biology and Lab	4	Natural Sciences Lab
BSCI160 & 161	Principles of Ecology and Evolution and Lab	4	Natural Sciences Lab
CHEM 231 & 232	Organic Chemistry I with Lab	4	
CHEM 241 & 242	Organic Chemistry II with Lab	4	
CHEM 271 & 272	General Chemistry and Energetics with General Bioanalytical Chemistry Lab	4	
PHYS 131 or 141	Fundamentals of Physics for Life Sciences I or Principles of Physics I with Lab	4	
PHYS 132 or 142	Fundamentals of Physics for Life Sciences II or Principles of Physics II with Lab	4	
PSYC100	Introduction to Psychology	3	History and Social Sciences or Natural Sciences
UNIV100 (or equivalent)	Introduction to the University	1	

Specialization Courses (16-20 credits)

- Students must complete at least five courses, including at least three courses from within one specialization and at least one lab course.

- Up to three pre-approved Neuroscience Research credits can be applied to the major.
- Four pre-approved NEUR479 credits in the same faculty research laboratory can satisfy the lab requirement

Molecular, Cellular, and Physiological Specialization			Behavioral & Cognitive Specialization		
Course	Title	Credits	Course	Title	Credits
*NEUR379	Neuroscience Research: Molecular and Cellular	1-3	*NEUR379	Neuroscience Research: Molecular and Cellular	1-3
*NEUR479	Advanced Neuroscience Research Lab	1-4	*NEUR479	Advanced Neuroscience Research Lab	1-4
BSCI222	Principles of Genetics	4	BSCI222	Principles of Genetics	4
BSCI330	Cell Biology & Physiology	4	BSCI330	Cell Biology & Physiology	4
BSCI339D	Biology of Chemosensory Systems	3			
BSCI339F	Neurophysiology of Cells and Circuits	3			
			BSCI360	Principles of Animal Behavior	3
			BSCI401	Animal Communication	3
BSCI402	Genomics of Sensory Systems	3			
BSCI403	Biology of Vision	3			
BSCI410	Molecular Genetics	3			
BSCI415	Molecular Genetics Lab	3			
BSCI430	Developmental Biology	3			
BSCI440 & 441	Mammalian Physiology and Lab	6			
BSCI446	Neural Systems	3	BSCI446	Neural Systems	3
BSCI452	Diseases of the Nervous System	3			
BCHM463	Biochemistry of Physiology	3			
Special Topics Courses (BSCI338 or 339) when specifically approved for the major/specialization. Check with your advisor.					

KNES370	Motor Development	3			
			KNES385	Motor Control and Learning	3
KNES462	Neural Basis of Human Movement	3			
			KNES498 C	Exercise and Brain Health	3
			PHIL209N	Know Thyself: Wisdom Through Cognitive Science (General Education: History/Social Science and Humanities)	3
			PHIL366	Introduction to Philosophy of Mind	3
			PSYC302	Fundamentals of Learning and Behavior	3
			PSYC341	Introduction to Memory and Cognition	3
			PSYC402	Neural Systems and Behavior	3
			PSYC403	Animal Behavior	3
PSYC404	Introduction to Psychopharmacology	3	PSYC404	Introduction to Psychopharmacology	3
			PSYC406	Neuroethology	3
			PSYC407	Behavioral Neurobiology Laboratory	4
			PSYC413	Developmental Cognitive/Social Neuroscience	3
			PSYC414	Science of Sleep and Biological Rhythms	3
			PSYC442	Psychology of Language	3
			PSYC455	Cognitive Development	3
			PSYC489G	Hormones and Behavior	3

*NEUR courses have not yet been created and therefore do not appear in the Undergraduate Catalog.

See Appendix B for course descriptions.

General Education. Students will complete their science and mathematics general education requirements by way of fulfilling major requirements (see the table above for which courses count for general education requirement). Students will be able to complete a history and social sciences general education requirement by taking the major requirement PSYC100. Otherwise, students will have room in their schedules to fulfill the other general education requirements.

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

Other Institutions or Organizations. The department will not contract with another institution or non-collegiate organization for this program.

Student Support. Students enrolled in this program will have access to all the resources necessary in order to succeed in the program and make the most of the learning opportunity. Students entering the university as either first-time college students or transfer students will learn about the program through their orientation program. Students entering the major as internal transfers will meet with an advisor in the program when they declare the major. Two full-time advisors will be dedicated to the major.

Marketing and Admissions Information. The program will be clearly and accurately described in the university website and be marketed at university recruiting events.

H. Adequacy of Articulation

Many of the supporting courses are widely available at Maryland community colleges. Once the program is approved, the faculty will explore whether the introductory NEUR200 course could be taught at any of the community colleges.

I. Adequacy of Faculty Resources

Program faculty. Faculty will be drawn from the Departments of Psychology and Biology. Many of the courses required by the program, such as the supporting courses and specialization courses, are already offered. For the new Neuroscience courses, two new tenure-track faculty members and a minimum of two new full-time professional-track faculty members will be added to teach in the program.

See faculty biographies in Appendix C for those currently expected to teach in the program.

Faculty training. The program's Undergraduate Director will prepare a brief annual report due to the colleges that sponsor the program at the end of each academic year. This comprehensive report will include a review of learning outcomes results, enrollment trends, graduating student outcomes, updates on collaborations, opportunities, and challenges for the program. The program's Undergraduate Director will also initiate a meeting of the Undergraduate Committee with the college deans each September to present the annual report and discuss the current and future directions of the major. Opportunities to improve teaching and learning in the program will be identified through this process.

For the learning management system, faculty teaching in this program will have access to teacher development opportunities available across 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.

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

The program is a collaboration between two existing departments that offer two related programs: Psychology and Biological Sciences. Much of the coursework for the program already exists. Consequently, the facilities, instructional, and administrative requirements for a new program are already largely in place. UMD is anticipating additional funding through the state legislature for this program. This funding will be used for some physical space enhancements and administrative and faculty hires. The enhancements to physical facilities include the renovation of two teaching laboratories. Two additional advisors and an undergraduate director (receiving a 12-month administrative supplement and summer salary) will be hired. There will also be four additional faculty hires, along with the addition of some graduate teaching assistantships. Existing campus resources as well as the new resources from the state will be adequate for the program.

All UMD students have access to the institutional electronic mailing system. This program is not a distance education program, however, student will have access to the campus learning management system for the elements of the courses that exist online.

L. Adequacy of Financial Resources

Resources for the new program will be drawn from those currently used by the sponsoring colleges on neuroscience undergraduate education, reallocated funds from campus, and new resources to the university provided through state legislation, for which neuroscience is an identified priority area.
(See Tables 1 and 2)

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.

Additionally, The Undergraduate Director will be charged with preparing a brief annual report due to the sponsoring college Associate Deans at the end of each academic year. The report will include a review of learning outcomes results, enrollment trends, graduating student outcomes, updates on collaborations, opportunities, and challenges for the program. The Undergraduate Director will also initiate a meeting of the Undergraduate Committee with the sponsoring college deans each September to present the annual report and discuss the current and future directions of the major.

N. Consistency with Minority Student Achievement goals

The Psychology Department and College of Behavioral and Social Sciences (BSOS) have ongoing strategies to recruit and retain underrepresented minority students, including the BSOS Advising Minority Retention Group, the BSOS College Summer Research Initiative, and the ongoing agenda of the Psychology Department Diversity Committee that focuses on undergraduate diversity and inclusion. This existing infrastructure will be used to recruit and retain underrepresented minority students to the Neuroscience program.

The utmost attention will be paid to ensure that both faculty and staff advisor hires for the new major include individuals who represent, and have experience working with, students from diverse backgrounds.

O. Relationship to Low Productivity Programs Identified by the Commission

N/A

P. Adequacy of Distance Education Programs

N/A

Appendix A: Learning Outcomes in NEUR Major Required & Supporting Courses

		Required Courses				
Learning outcomes (black X indicates emphasis) (red X indicates major emphasis)		**Supporting courses**	**NEUR 200**	**NEUR 305**	**NEUR 306**	**NEUR 405**
		BIOL, CHEM, PHYS, MATH	**Gateway**	**Neuro fundamentals cellular**	**Neuro fundamentals systems/cognitive**	**Neurobiology lab**
Knowledge base						
	Neuroscience breadth		X	X	X	X
	Evolution	X				
	Neuroscience depth					
	Integrating knowledge		X	X	X	X
Techniques						
	Current techniques	X	X	X	X	X
	Lab experience	X				X
	Data analysis	X				X
Critical thinking						
	Evaluate literature			X	X	
	Problem solving	X				X
	Experimental design	X		X	X	X
Communication						
	Written	X				X
	Verbal	X				X
	Graphical	X				X
Cultural relationships						
	Neuroscience contributions		X	X	X	
	Cultural effects	X	X	X	X	
	Ethical practices					X
Professional development						
	Scientific community	X	X	X	X	X
	Career paths		X	X	X	X
	Personal plan					

Concentration Courses (representative courses)

Learning outcomes (black X indicates emphasis) (red X indicates major emphasis)		NEUR 379 NEUR 479	BSCI 339F	PSYC 341	BSCI 370	BSCI 401	PSYC 402 BSCI 453	BSCI 402 BSCI 403 BSCI 339D	PSYC 403 BSCI 360	PSYC 404	BSCI 404	PSYC 406 BSCI 446	BSCI 410 BSCI 415	PSYC 411	PSYC 413 PSYC 455 BSCI 430	PSYC 414	BSCI 426	BSCI 440 BSCI 441	BSCI 442	PSYC 469G	PSYC 469P BIOL 600	LING 440	PHIL 280 PHIL 362	Learning outcomes (black X indicates emphasis) (red X indicates major emphasis)	
		Neuroscience research	Neural circuits	Cognitive neuro	Evolution	Animal communication	Advanced neuro	Sensory neuro	Animal behavior	Neuro-pharmacology	Cellular biophysics	Neurnethology	Molecular genetics	Functional imaging	Neural development	Biological rhythms/Sleep	Membrane biophysics	Mammalian physiology	Psychology of Language	Hormones	Ethics	Language and cognition	Philosophy of neuro		
Knowledge base																								**Knowledge base**	
	Neuroscience breadth			X		X			X			X			X	X		X				X	X	Neuroscience breadth	
	Evolution				X	X			X			X												Evolution	
	Neuroscience depth	X	X				X	X	X	X	X	X	X				X		X	X		X		Neuroscience depth	
	Integrating knowledge	X	X			X		X	X		X	X			X	X	X	X	X			X	X	Integrating knowledge	
Techniques																								**Techniques**	
	Current techniques	X		X			X	X	X	X		X	X	X	X		X	X	X	X		X		Current techniques	
	Lab experience	X															X	X						Lab experience	
	Data analysis	X												X			X							Data analysis	
Critical thinking																								**Critical thinking**	
	Evaluate literature	X	X		X	X		X		X	X	X		X	X	X		X	X	X		X	X	Evaluate literature	
	Problem solving	X	X					X		X		X	X	X	X	X	X	X	X	X		X		Problem solving	
	Experimental design	X	X	X				X	X	X					X	X	X	X	X	X				Experimental design	
Communication																								**Communication**	
	Written	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	Written	
	Verbal	X	X			X						X			X	X	X	X	X		X	X	X	Verbal	
	Graphical	X													X	X	X	X	X					Graphical	
Cultural relationships																								**Cultural relationships**	
	Neuroscience contributions		X	X		X	X	X	X	X		X			X	X	X	X	X	X		X	X	Neuroscience contributions	
	Cultural effects														X	X		X	X	X	X	X	X	Cultural effects	
	Ethical practices	X							X	X					X	X	X				X	X	X	Ethical practices	
Professional development																								**Professional development**	
	Scientific community	X	X	X		X	X	X	X		X	X			X	X					X			Scientific community	
	Career paths	X											X	X			X							Career paths	
	Personal plan	X																						Personal plan	

Appendix B: Course Descriptions
Note: Neuroscience (NEUR) courses have not yet been created and therefore are not in current undergraduate catalog. They will be created once the program proposal is approved.

Neuroscience Core Courses (13 Credits)

NEUR200 Introduction to Neuroscience (3 Credits)
Explores the anatomical and physiological systems that underlie animal behavior. Provides an introduction to the field of behavioral neuroscience.

NEUR 305 Neuroscience Fundamentals I (3 Credits)
Principles of the nervous system and neural circuits.

NEUR306 Neuroscience Fundamentals II (3 Credits)
Principles of molecular and cellular neuroscience.

NEUR405 Neurobiology Lab (4 Credits)
Laboratory course exploring the principles of nervous system function, ranging from molecular and cellular basis of neuron function through nervous system integration. Experiments use living invertebrates and cold-blooded vertebrates.

Required Supporting Courses (47 Credits)

MATH135 Discrete Mathematics for Life Sciences (4 Credits)
Basic discrete mathematics, with emphasis on relevant models and techniques to the life sciences.

Or

MATH140 Calculus I (4 Credits)
Introduction to calculus, including functions, limits, continuity, derivatives and applications of the derivative, sketching of graphs of functions, definite and indefinite integrals, and calculation of area. The course is especially recommended for science, engineering and mathematics majors.

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MATH136 Calculus for Life Sciences (4 Credits)
Continuation of MATH135, including basic ideas of differential integral calculus, with emphasis on elementary techniques and applications to the life sciences.

Or

MATH141 Calculus II (4 Credits)

Continuation of MATH140, including techniques of integration, improper integrals, applications of integration (such as volumes, work, arc length, moments), inverse functions, exponential and logarithmic functions, sequences and series.

--

BIOM301 Introduction to Biometrics (3 Credits)
Descriptive statistics, introduction to probability, sampling, confidence interval estimation, hypothesis testing, simple regression and correlation. Emphasis on simple applications of statistical techniques and interpretation of statistical results.

Or

EPIB315 Biostatistics for Public Health Practice (3 Credits)
An examination of biostatistical concepts and procedures as they relate to contemporary issues in public health. Focus on applications, hands-on-experience, and interpretations of statistical findings in public health research.

Or

PSYC200 Statistical Methods in Psychology (3 Credits)
A basic introduction to quantitative methods used in psychological research.

Or

STAT400 Applied Probability and Statistics I (3 Credits)
Random variables, standard distributions, moments, law of large numbers and central limit theorem. Sampling methods, estimation of parameters, testing of hypotheses.

Or

STAT464 Introduction to Biostatistics (3 Credits)
Probabilistic models. Sampling. Some applications of probability in genetics. Experimental designs. Estimation of effects of treatments. Comparative experiments. Fisher-Irwin test. Wilcoxon tests for paired comparisons.

--

BSCI160 Principles of Ecology and Evolution (3 Credits)
Basic principles of biology with special emphasis on ecological and evolutionary biology.

BSCI161 Principles of Ecology and Evolution Lab (1 Credit)
Basic laboratory principles of biology with special emphasis on ecological and evolutionary biology.

BSCI170 Principles of Molecular & Cellular Biology (3 Credits)
Basic principles of biology with special emphasis on cellular and molecular biology.

BSCI171 Principles of Molecular & Cellular Biology Laboratory (1 Credit)
Basic laboratory principles of biology with special emphasis on cellular and molecular biology.

CHEM131 Chemistry I - Fundamentals of General Chemistry (3 Credits)
An overview of the Periodic Table, inorganic substances, ionic and covalent bonding, bulk properties of materials, chemical equilibrium, and quantitative chemistry. CHEM131 is the first course in a four-semester sequence for students majoring in the sciences, other than Chemistry and Biochemistry majors.

CHEM132 General Chemistry I Laboratory (1 Credit)
Introduction to the quantification of chemical substances, including the concept of the mole and chemical stoichiometry. Additional work involves the synthesis of ionic substances and their qualitative characterization.

CHEM231 Organic Chemistry I (3 Credits)
The chemistry of carbon: aliphatic compounds, aromatic compounds, stereochemistry, arenes, halides, alcohols, esters and spectroscopy.

CHEM232 Organic Chemistry Laboratory I (1 Credit)
Provides experience in developing some basic laboratory techniques, recrystallization, distillation, extraction, chromatography.

CHEM241 Organic Chemistry II (3 Credits)
A continuation of CHEM231 with emphasis on molecular structure; substitution reactions; carbonium ions; aromaticity; synthetic processes; macromolecules.

CHEM242 Organic Chemistry Laboratory II (1 Credit)
Synthetic organic chemistry through functional group manipulation, introduction to instrumentation essential to analysis and structure elucidation.

PHYS131 Fundamentals of Physics for Life Sciences I (4 Credits)
The first part of a two-semester course in general physics specifically oriented towards applications relevant for students in biology and pre-medical programs. The course covers basic mechanics including forces and energy, properties of matter, and thermodynamics done in authentic biological contexts.

Or

PHYS141 Principles of Physics (4 Credits)

The first of a two-semester series in general physics. The first semester covers the fields of mechanics, thermodynamics, and special relativity. This survey course will use calculus and is recommended for chemistry and zoology majors. It also satisfies the requirements of medical and dental schools.

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PHYS132 Fundamentals of Physics for Life Sciences II (4 Credits)
The second part of a two-semester course in general physics specifically oriented towards applications relevant for students in biology and pre-medical programs. The course covers basic statistical physics, electricity and magnetism, and optics done in authentic biological contexts.

Or

PHYS142 Principles of Physics (4 Credits)
A continuation of PHYS141 covering waves, electricity and magnetism, optics and modern physics.

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PSYC100 Introduction to Psychology (3 Credits)
A basic introductory course, intended to bring the student into contact with the major problems confronting psychology and the more important attempts at their solution.

UNIV100 The Student in the University (1 Credit)
Introduces students to University life. In a small classroom setting, students will explore how to successfully bridge the gap between high school and college. Study skills, career decision-making, and student development processes will be explored.

Specialization Courses (16-20 Credits)

BCHM463 Biochemistry of Physiology (3 Credits)
A one-semester introduction to general biochemistry. A study of protein structure, enzyme catalysis, metabolism, and metabolic regulation with respect to their relationship to physiology.

BSCI222 Principles of Genetics (4 Credits)
Principles and mechanisms of heredity and gene expression. Considers plant, animal, and microbial organisms.

BSCI330 Cell Biology and Physiology (4 Credits)
Biochemical and physiological mechanisms underlying cellular function. Properties of cells which make life possible and mechanisms by which cells provide energy, reproduce, and regulate and integrate with each other and their environment.

BSCI339 Selected Topics in Biology (1-4 Credits)
Lectures, seminars, and other selected instruction courses in various biological subject matter.

Selected topics that will count for this major: BSCI339D Biology of Chemosensory Systems (3 Credits), BSCI339F Neurophysiology of Cells and Circuits (3 Credits).

BSCI360 Principles of Animal Behavior (3 Credits)
Study of animal behavior with emphasis on its evolution and function. Topics include genetic basis of behavior, communication, aggression, foraging, cooperation, mate selection, and relevance for conservation.

BSCI401 Animal Communication (3 Credits)
Examining the mechanisms by which animal produce and receive signals in each sensory modality; and quantifying the type and amount of information conveyed in signals and how animals attend to such information.

BSCI402 Genomics of Sensory Systems (3 Credits)
An advanced course covering topics on the molecular basis of senses and the application of genomic techniques to studies of sensory systems & sensory ecology.

BSCI403 Biology of Vision (3 Credits)
An upper level undergraduate course on the physical, molecular, and neural basis of vision.

BSCI410 Molecular Genetics (3 Credits)
An advanced genetics course emphasizing the molecular basis of gene structure and function in the context of modern approaches to the genetics of humans and model organisms.

BSCI415 Molecular Genetics Laboratory (3 Credits)
Problem solving laboratory organized around extended projects that employ different approaches toward linking gene and function.

BSCI430 Developmental Biology (3 Credits)
Structural, functional and regulatory events and mechanisms that operate during development to produce an integrated, multicellular organism composed of a multitude of differentiated cell types.

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BSCI440 Mammalian Physiology (4 Credits)
A study of the cardiovascular, hemopoietic, gastrointestinal, renal and respiratory systems. Chemical and endocrine regulation of physiological functions in mammals.

And

BSCI441 Mammalian Physiology Laboratory (2 Credits)
Laboratory exercises in experimental mammalian physiology.

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BSCI446 Neural Systems (3 Credits)
Neural development, followed by sensory, motor and integrative system organization in the central nervous system.

BSCI452 Diseases of the Nervous System (3 Credits)
An advanced course covering the neuroanatomy, function, and organization of the nervous system and its implication for pathology and disease.

KNES370 Motor Development (3 Credits)
Motor development across the life span. The developmental sequences of motor skills from birth to old age; neuromaturation of neuromuscular system; analysis of the underlying mechanisms of motor skill development; and correlates of motor development.

KNES385 Motor Control and Learning (3 Credits)
Physiological and cognitive bases for motor control and their applications to the acquisition of movement skills and understanding of movement disorders. Topics include: neurophysiology, motor control theory, sensory/perceptual processes, perception-action coupling, information processing, memory, attention, individual differences, motivation, practice organization and role of feedback.

KNES462 Neural Basis of Human Movement (3 Credits)
An introduction to the neural substrates which underlie postural and volitional movement. Neuroanatomical and neurophysiological basis of motor functioning; past and present conceptualizations of motor control and coordination; movement disorders; and maturation of the neuromuscular system.

KNES498 Special Topics in Kinesiology (3 Credits)
Topics of special interest in areas not covered by regularly scheduled courses.
Selected topics that will count for this major: KNES498C Exercise and Brain Health

NEUR379 Introductory Neuroscience Undergraduate Research (1-4 Credits)
Research in neuroscience under the direction and close supervision of a member of the faculty.

NEUR479 Advanced Neuroscience Undergraduate Research (1-4 Credits)
Advanced research in neuroscience under the direction and close supervision of a member of the faculty.

PHIL209 Philosophical Issues (3 Credits)
An examination of selected philosophical issues of general interest.
Selected topics that will count for this major: PHIL209N Know Thyself: Wisdom through Cognitive Science

PHIL366 Philosophy of Mind (3 Credits)

An introduction to core issues in the philosophy of mind, focusing especially on the basic metaphysical question of dualism versus physicalism.

PSYC302 Fundamentals of Learning and Behavior (3 Credits)
Overview of the fundamental types of learning that occur without formal instruction. The course covers fundamentals of classical and instrumental conditioning as studied in a variety of species in addition to more modern theories of learning. We will then explore how these principles influence diverse processes such as memory, attention, extinction, categorization, motivation, and in some cases, how they are implemented in the brain and disrupted in disease.

PSYC341 Introduction to Memory and Cognition (3 Credits)
An introduction to the basic concepts of cognitive psychology, the scientific study of mental processes. Topics will include perception, attention, memory, reasoning, and language, with an emphasis on how findings from cognitive psychology can inform real-life thinking (e.g., memory strategies for studying, pitfalls of multitasking, and how/why our memories can fail us).

PSYC402 Neural Systems and Behavior (3 Credits)
Research on the physiological basis of behavior, including considerations of sensory phenomenon, motor coordination, emotion, drives, and the neurological basis of memory.

PSYC403 Animal Behavior (3 Credits)
Reviews the theoretical framework underlying the study of animal behavior. The genetic, hormonal and physiological basis of behavior, and the relation to ecological and evolutionary processes will be discussed using examples that range from invertebrate animals to humans.

PSYC404 Introduction to Behavioral Pharmacology (3 Credits)
Theoretical viewpoints on the interaction of drugs and behavior. Basic principles of pharmacology, the effects of drugs on various behaviors, experimental analysis of drug dependence and abuse, and neuropharmacology and behavior.

PSYC406 Neuroethology (3 Credits)
A merger between the disciplines of neuroscience and ethology (animal behavior) studies the behavioral functions of nervous systems using a comparative and evolutionary approach. Students will learn how the nervous system controls behavioral patterns in a variety of different organisms ranging from insects to mammals.

PSYC407 Behavioral Neurobiology Laboratory (4 Credits)
How does the nervous system control behavior? We will address this question using simple behavioral experiments combined, in some exercises, with microsurgery and electrode recordings in the nervous system. Concepts studied will include CNS plasticity, the role of proprioception in controlling movement, cortical processing and the myth multitasking, sensory resolution by measuring receptive field sizes, activity of simple neural circuits controlling escape from predators, and the effects of neuromodulators on aggression. Animals used are all invertebrates.

PSYC413 Developmental Cognitive/Social Neuroscience (3 Credits)
Developmental cognitive/social neuroscience is the study of how the brain underlies the acquisition, refinement, and maintenance of complex cognitive and social abilities. The goal of this course is to gain an understanding of current research, methods, and theories in developmental cognitive/social neuroscience through lecture and discussion.

PSYC414 Science of Sleep and Biological Rhythms (3 Credits)
Sleep is a powerful, inescapable, misunderstood, and mysterious presence in our lives. The course will begin with a review of the basics of sleep and biological rhythms with a focus on the underlying neurobiology. The bulk of the semester will be in-depth discussions of topics in sleep and circadian rhythms primarily chosen by the students. A few examples: narcolepsy, sleep in primitive cultures, lucid dreaming, racial and cultural differences in sleep and sleep disorders, the biology of sleep and circadian rhythms during adolescence, CNS control of dreaming, sleep and states of consciousness, sleeping to remember vs. sleeping to forget, legal ramifications of parasomnias, e.g. sleepwalking, and the relationships between sleep deprivation and obesity.

PSYC442 Psychology of Language (3 Credits)
Introductory survey of the psychology of language, focusing on the cognitive processes that enable us to produce and understand language. Topics include speech perception, speech production, syntactic processing, language development, language disorders, and the brain bases of language.

PSYC455 Cognitive Development (3 Credits)
Theory and research on cognition from a developmental perspective. This discussion-based seminar will emphasize readings on infancy through early childhood. Topics will include general abilities such as memory and categorization, as well as children's emerging knowledge about the physical and social worlds.

PSYC489 Advanced Special Topics in Psychology (3 Credits)
Treatment of a specialized topic in psychology.
Special topic course that will count for this major: PSYC498G Hormones & Behavior.

Appendix C: Faculty

Name	Appointment	Degree	Field of Study	Academic Title	Status
Ricardo Araneda	TTK	Ph.D.	Neuromodulation and sensory physiology of the olfactory system; mechanisms underlying the processing of olfactory information in the context of behavior	Associate Professor	FT
Hilary Bierman	PTK	Ph.D.	Comparative neurobiology of the auditory and motor systems	Senior Lecturer	FT
Daniel Butts	TTK	Ph.D.	Information processing in the visual pathway in the context of natural vision; role of time in the sensory coding relationships between observable single-neuron physiology and system-level function	Associate Professor	FT
Melissa Caras	TTK	Ph.D.	The neural basis of neural plasticity	Assistant Professor	FT
Catherine Carr	TTK	Ph.D.	Cellular mechanisms of sound localization in birds; evolution of the auditory system	Professor	FT
Patrick Kanold	TTK	Ph.D.	Mechanisms and circuits involved in the maturation of the cortical circuitry, development of the visual system, cellular and molecular basis of learning	Professor	FT
Elizabeth Quinlan	TTK	Ph.D.	Development of the vertebrate visual system, cellular and molecular basis of learning and memory	Professor	FT
David Yager	TTK	Ph.D.	Linkage between brain function and behavior using insect auditory systems as models	Associate Professor	FT
Anna Li	TTK	Ph.D	Neural mechanisms of drug addiction	Assistant Professor	FT

Jens Herberholz	TTK	Ph.D.	Role of neurochemical inhibition, including the interplay between the neurocellular effects	Associate Professor	FT
Erica Glasper	TTK	Ph.D.	Structural plasticity in the adult and aging brain	Assistant Professor	FT
Matthew Roesch	TTK	Ph.D.	Neural mechanisms underlying learning and decision-making	Professor	FT

Table 1: Resources

Resources Categories	Year 1	Year 2	Year 3	Year 4	Year 5
1.Reallocated Funds	$1,160,296	$1,691,099	$1,639,603	$2,107,854	$2,160,871
2. Tuition/Fee Revenue (c+g below)	$0	$0	$0	$0	$0
a. #FT Students	150	350	500	500	500
b. Annual Tuition/Fee Rate	$13,122	$13,516	$13,922	$14,339	$14,769
c. Annual FT Revenue (a x b)	$0	$0	$0	$0	$0
d. # PT Students	5	10	20	20	20
e. Credit Hour Rate	$450	$463	$477	$492	$506
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	$0	$0	$0	$0	$0
TOTAL (Add 1 - 4)	**$1,160,296**	**$1,691,099**	**$1,639,603**	**$2,107,854**	**$2,160,871**

The university is not anticipating overall enrollment growth as a result of this major (moreso a shift in major selection by matriculating students), so no new tuition revenue is assumed in identifying resources. Reallocated resources will come from redirection of tuition revenue at the campus level, redirection of instructional resources from the collaborating departments, from enhancement funding, and from other reallocated resources within the university.

Table 2: Estimated expenditures

Expenditure Categories	Year 1	Year 2	Year 3	Year 4	Year 5
1. TTK Faculty (b+c below)	$399,000	$410,970	$634,949	$871,996	$898,156
a. #FTE	2.0	2.0	3.0	4.0	4.0
b. Total Salary	$300,000	$309,000	$477,405	$655,636	$675,305
c. Total Benefits	$99,000	$101,970	$157,544	$216,360	$222,851
1. PTK Faculty (b+c below)	$266,000	$273,980	$282,199	$290,665	$299,385
a. #FTE	2.0	2.0	2.0	2.0	2.0
b. Total Salary	$200,000	$206,000	$212,180	$218,545	$225,102
c. Total Benefits	$66,000	$67,980	$70,019	$72,120	$74,284
1. Graduate Teaching Assistants (b+c below)	$95,760	$98,633	$203,184	$313,919	$323,336
a. #FTE	4.0	4.0	8.0	12.0	12.0
b. Total Salary	$72,000	$74,160	$152,770	$236,029	$243,110
c. Total Benefits	$23,760	$24,473	$50,414	$77,890	$80,226
2. Admin. Staff (b+c below)	$232,750	$239,733	$246,924	$254,332	$261,962
a. #FTE	2.5	2.5	2.5	2.5	2.5
b. Total Salary	$175,000	$180,250	$185,658	$191,227	$196,964
c. Total Benefits	$57,750	$59,483	$61,267	$63,105	$64,998
3. Total Support Staff (b+c below)	$33,250	$34,248	$35,275	$36,333	$37,423
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	$8,250	$8,498	$8,752	$9,015	$9,285
4. Equipment	$25,000	$25,000	$25,000	$25,000	$25,000
5. Library	$5,000	$5,000	$5,000	$5,000	$5,000
6. New or Renovated Space	$0	$500,000	$0	$0	$0
7. Other Expenses: Operational Expenses	$103,536	$103,536	$207,072	$310,608	$310,608
TOTAL (Add 1 - 7)	**$1,160,296**	**$1,691,099**	**$1,639,603**	**$2,107,854**	**$2,160,871**

University System of Maryland

BOARD OF REGENTS

SUMMARY OF ITEM FOR ACTION, INFORMATION, OR DISCUSSION

TOPIC: Update: Academic Integrity

COMMITTEE: Education Policy and Student Life

DATE OF COMMITTEE MEETING: Tuesday, January 15, 2019

SUMMARY: At their December 2017 meeting, the Board of Regents heard from a panel of faculty, staff, and students about increasing concerns regarding academic dishonesty at the USM institutions. Partly due to the speed and sophistication of emerging technologies, institutions have begun to understand that "dishonesty prevention" is an insufficient approach to working with today's learners. How, then, can campuses foster academic integrity in ways that help students, faculty, staff, and administrators take seriously their responsibilities toward academic honesty while also building and maintaining a culture of integrity? At the end of the panel discussion, the Regents charged the USM Office of Academic and Students Affairs and the Council of University System Faculty (CUSF) with exploring next steps we might take to address these concerns.

Since then, CUSF has been working in collaboration with the USM's Kirwan Center for Academic Innovation to create broader awareness of the issues by facilitating discussions with a number of the USM governing bodies, including an interactive presentation during the USM Joint Council meeting (CUSF, Council for University System Staff, and the USM Student Council) on November 16th.

Moving forward, CUSF will work to: (a) arrange similar presentations at each of the institutions and (b) assist them in preparing a gap analysis in early 2019. Work for this academic year will culminate in a day-long, system-wide convening co-sponsored by CUSF and the Kirwan Center on Tuesday, March 26, 2019 that will be focused on next steps. This will be a facilitated, workshop-style event aimed at helping teams from the institutions develop action plans for a more holistic approach around academic integrity.

ALTERNATIVE(S): This is an information item only.

FISCAL IMPACT: This is an information item only.

CHANCELLOR'S RECOMMENDATION: This is an information item only.

COMMITTEE ACTION: Information Only		DATE: January 15, 2019
BOARD ACTION:		DATE:
SUBMITTED BY: Joann A. Boughman	301-445-1992	jboughman@usmd.edu

UNIVERSITY SYSTEM of MARYLAND

BOARD OF REGENTS

SUMMARY OF ITEM FOR ACTION, INFORMATION, OR DISCUSSION

TOPIC: New Program 5-Year Enrollment Review

COMMITTEE: Education Policy and Student Life

DATE OF COMMITTEE MEETING: Tuesday, January 15, 2019

SUMMARY: As part of the ongoing program review process, the attached data has been updated with Fall 2018 enrollments to provide the Committee with information regarding the actual enrollments in new programs approved since FY 2013. It is important to note that not all programs are implemented in the year that they are approved. Dependent upon the date of Board and MHEC approval, recruitment and admission to the program may not begin until the following year and therefore no enrollments are reported. In other cases, admission to the program may not occur until the students have completed the required core courses, examinations, etc. and so, enrollments would be reported two years after implementation. These enrollment data reflect the relative accuracy in the projected enrollments that are included in all new program proposals.

ALTERNATIVE(S): This is an information item only.

FISCAL IMPACT: This is an information item only.

CHANCELLOR'S RECOMMENDATION: This is an information item only.

COMMITTEE ACTION: Information Only		DATE: January 15, 2019
BOARD ACTION:		DATE:
SUBMITTED BY: Joann A. Boughman	301-445-1992	jboughman@usmd.edu
Ellen Herbst	301-445-1923	eherbst@usmd.edu

New Program Enrollment Review Fall 2013 to Fall 2017

Inst.	HEGIS	Program Name	Degree Level	Approved	Enrollments									
					Fall 2013		Fall 2014		Fall 2015		Fall 2016		Fall 2017	
					Projected	Actual	Projected	Actual	Projected	Actual	Projected	Actual	Projected	Actual
FSU	080201	Elementary and Middle School Dual Certification [1]	Bachelor's [1]	4/12/13	36	**0**	36	**13**	40	**53**	48	**45**	48	**45**
SU	082901	Contemporary Curriculum Theory	Doctorate (R/S) - Ed.D	4/12/13	15	**0**	27	**17**	38	**26**	39	**33**	40	**40**
SU	051700	Business Economics	Bachelor's	6/21/13	40	**0**	80	**92**	90	**118**	100	**129**	100	**122**
SU	051300	International Business	Bachelor's	6/21/13	80	**1**	80	**39**	90	**54**	100	**61**	100	**41**
TU	039904	Leadership in Jewish Educ. & Communal Service [2]	Master's [2]	6/21/13	12	**2**	13	**11**	14	**5**	15	**7**	16	**9**
UB	210506	Forensic Science – High Tech Crime	Master's	2/15/13	16	**0**	22	**59**	28	**93**	34	**98**	40	**105**
UB	210202	Nonprofit Management and Social Entrepreneurship	Master's	4/12/13	10	**0**	25	**35**	35	**66**	35	**69**	35	**66**
~~**UB**~~	~~050603~~	~~Forensic Science – Forensic Accounting~~ [3]	~~Master's~~	~~6/21/13~~	~~25~~	~~**0**~~	~~25~~	~~**1**~~	~~30~~	~~**0**~~	~~30~~	~~**NA**~~	~~30~~	~~**NA**~~
UMB	129958	Regulatory Science	Master's	2/15/13	10	**0**	30	**56**	50	**86**	50	**62**	50	**51**
UMB	129960	Health Science	Master's	6/21/13	40	**0**	80	**39**	120	**75**	132	**109**	132	**91**
UMB	129961	Pharmacometrics	Master's	6/21/13	50	**33**	55	**36**	55	**42**	55	**36**	55	**42**
UMB	499900	Research Ethics	Post-Bacc. Cert.	6/21/13	10	**12**	14	**10**	16	**19**	20	**13**	24	**12**
UMBC	221000	Global Studies	Bachelor's	2/15/13	30	**15**	62	**60**	91	**83**	126	**99**	155	**107**
UMCP	050400	Finance	Master's	6/21/13	280	**0**	280	**180**	280	**287**	280	**319**	280	**227**
UMES	050900	Marketing	Bachelor's	6/21/13	20	**0**	25	**2**	30	**20**	35	**34**	35	**36**
UMES	050400	Finance	Bachelor's	6/21/13	20	**0**	25	**8**	30	**17**	35	**19**	35	**15**
UMES	100500	Jazz and Popular Music	Bachelor's	6/21/13	10	**0**	15	**1**	20	**2**	25	**7**	25	**6**
UMUC	050300	Data Analytics	Master's	2/15/13	50	**45**	75	**193**	100	**284**	125	**357**	125	**363**
UMUC	120200	Health Services Management	Bachelor's	2/15/13	25	**152**	53	**518**	82	**848**	114	**1061**	148	**1207**
UMUC	210201	Public Safety Administration	Bachelor's	2/15/13	200	**59**	300	**197**	400	**307**	500	**348**	600	**382**
UMUC	120300	Nursing	Bachelor's	2/15/13	50	**7**	95	**119**	104	**239**	113	**387**	122	**588**

Note: All enrollments are the students' primary major as reported in the MHEC EIS files. Administrative coding changes at campuses may lag actual program enrollment in initial years.

3555

[1] FSU's Elementary & Middle School Dual Certification enrollment are only the students in the newly approved Bachelor's program that includes dual teacher certification.

[2] TU's Leadership in Jewish Educ. & Communal Service includes all Master's students, not just the newly approved concentrations

[3] UB's Forensic Science-Forensic Accounting program was discontinued July 2016 due to low enrollment

Updated December 2017 -- University System of Maryland Office of Institutional Research

2

New Program Enrollment Review Fall 2014 to Fall 2018

Inst.	HEGIS	Program Name	Degree Level	Approved	Enrollments									
					Fall 2014		Fall 2015		Fall 2016		Fall 2017		Fall 2018	
					Projected	Actual	Projected	Actual	Projected	Actual	Projected	Actual	Projected	Actual
FSU	120300	Nursing	Master's	4/11/14	6/29	**10**	11/49	**23**	17/73	**31**	19/81	**23**	24/102	**35**
UB	210504	Justice Leadership and Management[1]	Master's	6/27/14	20	**0**	30	**0**	30	**4**	30	**7**	30	**4**
UMB	140102	Law[2]	Master's	2/14/14	20	**0**	40	**29**	50	**86**	70	**72**	80	**38**
UMB	120732	Forensic Medicine	Master's	6/27/14	8/0	**0**	9/1	**0**	10/1	**9**	10/1	**14**	15/1	**13**
UMBC	089207	Biology Education[3]	Bachelor's	6/27/14	2	**0**	2	**0**	2	**0**	2	**15**	2	**16**
UMCP	050200	Accounting	Master's	4/11/14	155	**0**	155	**268**	155	**326**	155	**299**	155	**194**
UMCP	070202	Information Systems	Master's	4/11/14	100	**0**	100	**188**	100	**226**	100	**231**	100	**242**
UMCP	050901	Marketing Analytics	Master's	4/11/14	40	**0**	40	**35**	40	**48**	40	**44**	40	**49**
UMCP	051000	Supply Chain Management	Master's	4/11/14	150	**0**	150	**87**	150	**79**	150	**68**	150	**53**
UMCP	082702	Teaching and Learning, Policy. and Leadership	Doctorate	4/11/14	90/24	**15**	100/24	**31**	100/24	**54**	100/24	**73**	100/24	**87**
UMES	129957	Pharmaceutical Sciences	Master's	6/27/14	5	**0**	5	**1**	5	**2**	10	**1**	10	**1**
UMES	129957	Pharmaceutical Sciences	Doctorate	6/27/14	5	**0**	5	**3**	5	**3**	10	**8**	10	**6**

Note: All enrollments are the students' primary major as reported in the MHEC EIS files. Administrative coding changes at campuses may lag actual program enrollment in initial years.

[1] UB MPS in Justice Leadership and Management enrollment projections are for part-time students only. 855

[2] UMB MS in Law enrollment projections are for part-time students only.

[3] UMBC BA in Biology Education enrollment projections are new enrollments beyond the 2-3 students per year who typically enrolled in the prior Biology specialization for secondary teacher certification.

Updated November 2018 -- University System of Maryland Office of Institutional Research

New Pro New Program Enrollment Review Fall 2015 to Fall 2019

Inst.	HEGIS	Program Name	Degree Level	Approved	Enrollments									
					Fall 2015		Fall 2016		Fall 2017		Fall 2018		Fall 2019	
					Projected	Actual	Projected	Actual	Projected	Actual	Projected	Actual	Projected	Actual
CSU	120102	Health Sciences	Bachelor's	6/19/15	40	**0**	78	**0**	141	**0**	215	**91**	215	
FSU	210302	Adventure Sports Mgmt.	Bachelor's	2/13/15	12	**0**	24	**9**	26	**5**	30	**4**	34	
FSU	120100	Health Science	Bachelor's	4/10/15	5	**50**	20	**130**	26	**167**	31	**174**	35	
FSU	083300	Secondary Teacher Education	Bachelor's	4/10/15	2	**0**	4	**0**	4	**0**	6	**0**	6	
SU	083505	Athletic Training [1]	Master's	12/12/14	12	**0**	24	**5**	24	**8**	24	**13**	24	
TU	089911	Interdisciplinary Arts Infusion	Master's	9/19/14	8	**11**	8	**20**	20	**23**	12	**23**	24	
TU	050900	Marketing Intelligence	Master's	9/19/14	5	**8**	8	**26**	10	**46**	15	**36**	15	
TU	050901	Marketing Intelligence	Post Bacc. Cert.	9/19/14	5	**2**	9	**3**	12	**0**	15	**1**	15	
UB	150901	Philosophy, Society and. Applied Ethics [2]	Bachelor's	2/13/15	10	**0**	19	**8**	30	**17**	39	**21**	45	
UMBC	100502	Jazz Studies	Bachelor's	6/19/15	22	**0**	22	**0**	22	**13**	22	**13**	22	
UMBC	100501	Music Composition	Bachelor's	6/19/15	14	**0**	14	**3**	14	**10**	14	**12**	14	
UMBC	100503	Music Education	Bachelor's	6/19/15	39	**0**	39	**0**	39	**18**	39	**21**	39	
UMBC	100400	Music Performance	Bachelor's	6/19/15	45	**0**	45	**9**	45	**28**	45	**32**	45	
UMBC	100504	Music Technology	Bachelor's	6/19/15	55	**0**	55	**0**	55	**39**	55	**43**	55	
UMES	070210	Cybersecurity Engineering Tech.	Master's	4/10/15	30	**0**	35	**8**	50	**14**	50	**19**	55	
UMUC	070203	Cloud Computing Architecture	Master's	2/13/15	50	**0**	100	**0**	110	**54**	120	**170**	130	
UMUC	082500	Learning Design & Technology	Master's	6/19/15	15	**0**	34	**20**	43	**61**	53	**87**	63	

Note: All enrollments are the students' primary major as reported in the MHEC EIS files. Administrative coding changes at campuses may lag actual program enrollment in initial years.

[1] Athletic Training M.S. anticipates 19 students in the program in Fall 2019.

[2] The PSAE program has been renamed (approval from MHEC received 12/11/18) to Philosophy, Law and Ethics (PLE). A comparable program, Jurisprudence, is being suspended and students will be encouraged to transfer to the renamed PLE. The renamed/combined major is expected to approach 70 enrollments.

Updated November 2018 -- University System of Maryland Office of Institutional Research

New Program Enrollment Review Fall 2016 - Fall 2020

Inst.	HEGIS	Program Name	Degree Level	Approved	Enrollments									
					Fall 2016		Fall 2017		Fall 2018		Fall 2019		Fall 2020	
					Projected	Actual	Projected	Actual	Projected	Actual	Projected	Actual	Projected	Actual
UMB	120100	Palliative Care	MS	6/10/16	20	**0**	50	**61**	63	**119**	64		68	
UMCP	070101	Information Science	BS	10/6/15	50	**91**	100	**367**	150	**709**	200		200	
UMCP	050300	Business Analytics	MS	4/15/16	30	**0**	30	**74**	40	**161**	41		42	
UMCP	210200	Public Policy	BA	6/10/16	50	**0**	100	**78**	200	**162**	300		300	

Updated November 2018 -- University System of Maryland Office of Institutional Research

New Program Enrollment Review Fall 2017 - Fall 2021

Inst.	HEGIS	Program Name	Degree Level	Approved	Enrollments									
					Fall 2017		Fall 2018		Fall 2019		Fall 2020		Fall 2021	
					Projected	Actual	Projected	Actual	Projected	Actual	Projected	Actual	Projected	Actual
SU	020600	URBAN AND REGIONAL PLANNING	BS	9/20/16	17	**7**	18	**15**	24		25		25	
UMB	149900	CYBERSECURITY LAW	MS	9/20/16	28	**20**	68	**34**	113		142		167	
UMB	149901	HOMELAND SECURITY & CRISIS MANAGEMENT LAW	MS	9/20/16	28	**13**	68	**23**	113		142		167	
UMCP	170300	QUANTITATIVE FINANCE	MS	1/17/17	100	**148**	100	**142**	100		100		100	
UMCP	121404	ENVIRONMENTAL SCIENCE	MS/PHD	1/17/17	15	**0**	15	**4**	15		15		15	
UMUC	050610	HOMELAND SECURITY	BS	11/15/16	125	**204**	325	**508**	500		675		850	
UMUC	050629	TRANSFORMATIONAL LEADERSHIP	MS	1/17/17	25	**0**	53	**0**	63		73		83	
UMBC	N/A	TRANSLATIONAL LIFE SCIENCE TECHNOLOGY	BS	11/15/16	16	**0**	36	**0**	54		71		87	
FSU	120300	NURSING	MS	3/28/17	10	**23**	20	**35**	35		45		60	

Note: All enrollments are the students' primary major as reported in the MHEC EIS files. Administrative coding changes at campuses may lag actual program enrollment in initial years.

Created December 2017 -- University System of Maryland Office of Institutional Research
Revised January 2017
Revised November 2018

New Program Enrollment Review Fall 2018 - Fall 2022

Inst.	HEGIS	Program Name	Degree Level	Approved	Enrollments									
					Fall 2018		Fall 2019		Fall 2020		Fall 2021		Fall 2022	
					Projected	Actual	Projected	Actual	Projected	Actual	Projected	Actual	Projected	Actual
FSU	120101	PHYSICIAN ASSISTANT STUDIES [1]	MMS	6/22/18	0	**0**	25		25		25		25	
TU	120802	ENTRY LEVEL OCCUPATIONAL THERAPY [2]	PHD	2/9/18	0	**0**	40		40		40		40	
TU	120803	(POST-PROFESSIONAL) OCCUPATIONAL THERAPY [3]	PHD	2/9/18	25	**4**	25		25		25		25	
TU	179900	ACTURIAL SCIENCE & PREDICTIVE ANALYTICS	MS	6/22/18	5	**0**	10		15		15		25	
TU	082700	TRANSFORMATIONAL EDUCATIONAL LEADERSHIP [4]	MS	6/22/18	n/a	**0**	n/a		n/a		n/a		n/a	
UMB	121411	HEALTH AND SOCIAL INNOVATION	MS	12/15/17	14	**0**	20		24		24		24	
UMUC	050101	BUSINESS ADMINISTRATION [5]	PHD	6/22/18	0	**0**	55		112		168		179	
UMUC	050631	ACQUISITION AND CONTRACT MANAGEMENT	MS	10/20/17	50	**0**	103		113		123		133	
UMUC	079901	CYBER OPERATIONS	MS	10/20/17	50	**0**	103		113		123		133	
UMUC	050630	STRATEGIC COMMUNICATIONS	MS	10/20/17	25	**0**	53		63		73		83	

Note: All enrollments are the students' primary major as reported in the MHEC EIS files. Administrative coding changes at campuses may lag actual program enrollment in initial years.

[1] The Projected Implementation Date for the FSU Physician Assistant Students program is Summer 2019.
[2] The Projected Implementation Date for the TU Entry Level Occupational Therapy program is Summer 2019.
[3] The title of the proposed program, as submitted to MHEC, was Post Professional Occupational Therapy Doctorate. MHEC's title of the program is Occupational Therapy Doctorate.
[4] No projected enrollment numbers were provided for TU's Transformational Educational Leadership program. The program is a New Instructional Program Within Existing Resources.
[5] The Projected Implementation Date for the UMUC Business Administration is Spring 2019.

Note: Two programs were approved by the Board in FY 2018 but were not approved by MHEC.
1) UB's BS in Accounting (4/20/2018) and 2) TU's MS in Management and Leadership Studies (10/20/2017).

Created November 2018 -- University System of Maryland Office of Institutional Research

UNIVERSITY SYSTEM of MARYLAND

BOARD OF REGENTS

SUMMARY OF ITEM FOR ACTION, INFORMATION, OR DISCUSSION

TOPIC: Results of Periodic Reviews of Academic Programs

COMMITTEE: Education Policy and Student Life

DATE OF COMMITTEE MEETING: Tuesday, January 15, 2019

SUMMARY: At its meeting in June 2003, the Board of Regents delegated to the Chancellor the authority to approve institutional reports on the review of existing academic programs. Existing academic programs are required to submit a report every seven years. Each USM institution follows a review process that was approved previously by the Regents. A format for the reports is standardized and includes information on enrollments and degrees awarded, internal and external reviews, and institutional recommendations and actions.

The periodic program review process includes an internal self-study that is conducted by the program at the departmental level. The self-study is reviewed by external reviewers who then submit a report that becomes part of the draft full periodic program review report. The respective dean for the program and the provost review the draft full report prior to submission to USM.

Drafts of each report are reviewed by staff in the USM Office of the Senior Vice Chancellor for Academic and Student Affairs and comments are shared with the institutions for appropriate action prior to final submission to the Chancellor. Comments may include requests for additional information or the need for additional action following program accreditation reviews.

The reports demonstrate the seriousness with which the reviews are taken. Institutional action plans are decided upon primarily by the provost or dean, both of whom are responsible to monitor academic quality and productive use of resources. The following narratives and data tables provide information on enrollment and degrees awarded during the five years prior to the submission of the report.

Copies of the complete program review summaries are available from the USM Office of Academic and Student Affairs.

ALTERNATIVE(S): This is an information item.

FISCAL IMPACT: This is an information item.

CHANCELLOR'S RECOMMENDATION: This is an information item.

COMMITTEE ACTION: Information Only		DATE: January 15, 2019
BOARD ACTION:		DATE:
SUBMITTED BY: Joann A. Boughman	301-445-1992	jboughman@usmd.edu

2018 Periodic Review of Academic Programs Summary

Existing academic programs are required to submit a report every seven years. A format for the reports is standardized and includes information on enrollments and degrees awarded, internal and external reviews, and institutional recommendations and actions. Drafts of each report are reviewed by staff in the USM Office of the Senior Vice Chancellor for Academic and Student Affairs and comments are shared with the institutions for appropriate action prior to final submission to the Chancellor. A total of 110 academic programs were reviewed during the 2017-2018 period program review period.

Number of Programs Reviewed
Associate's: 1[1]
Bachelor's: 57
Master's: 33
Doctorate: 13
Certificates: 6

[1] The University of Maryland University College is the single USM institution approved by the Maryland Higher Education Commission (MHEC) to offer the associate's degree.

Results of Program Accreditation Reviews

Coppin State University
The Department of Teaching and Learning B.S. in Elementary Education program in the School of Education in the College of Arts and Sciences and Education underwent a reaccreditation review by the National Council for Accreditation of Teacher Education (NCATE) in AY 2017-2018. The enrollment and degree data for the B.S. in Elementary Education program are included in this report.

The Department of Sport and Entertainment Management B.S. in Entertainment Management and B.S. in Sport Management programs in the College of Business underwent reaccreditation reviews by the Accreditation Council for Business Schools and Programs (ACBSP) in AY 2017-2018. Included in this report are the enrollment and degree data for the B.S. in Entertainment Management and B.S. in Sport Management programs.

The Department of Social Work B.S. in Social Work program in the College of Behavioral and Social Sciences underwent a reaccreditation review by the Council on Social Work Education (CSWE) in 2017-2018. The enrollment and degree data for the B.S. in Social Work program are included in this report.

Towson University
The Department of Computer and Information Science Bachelor of Science in Computer Science in the College of Science and Mathematics was granted full reaccreditation on August 23, 2018 by the Computing Accreditation Commission (CAC) of the Accreditation Board for Engineering and Technology (ABET). The periodic program review report for the Bachelor of Science in Computer Science will be submit during the Fall 2019 cycle.

The B.S. in Accounting; B.A./B.S. in Business Administration; B.A./B.S. e-Business; M.S. in Accounting and Business Advisory Services; M.S. in Marketing Intelligence; M.S. in Supply Chain Management; P.B.C. in Interactive Marketing; and P.B.C. in Project, Program and Portfolio Management programs in the College of Business and Economics underwent a reaccreditation peer review visit on October 22-24, 2017 by the Association to Advance Collegiate Schools of Business

(AACSB). The enrollment and degree data for the aforementioned programs are included in this report.

University of Baltimore
The Juris Doctor program in the School of Law underwent a reaccreditation review simultaneously with the American Bar Association (ABA) Section on Legal Education and Admission to the Bar and the American Association of Law Schools (AALS) on November 5-8, 2017. The enrollment and degree data for the Juris Doctor program are included in this report.

The Master of Public Administration program in the School of Public and International Affairs in the College of Public Affairs underwent a reaccreditation review by the Network of Schools of Public Policy, Affairs, and Administration (NASPAA). The enrollment and degree data for the Master of Public Administration program are included in this report.

University of Maryland Baltimore County
The Department of Dance B.A. in Dance program in the College of Arts, Humanities and Social Sciences underwent a reaccreditation review by the National Association of School of Dance (NASD), Commission on Accreditation in 2018. The enrollment and degree data for the B.A. in Dance program are included in this report.

The Department of Social Work B.A. in Social Work was granted full reaffirmation on June 2018 by the Council on Social Work Education (CSWE), Commission on Accreditation (COA). The enrollment and degree data for the B.A. in Social Work program are included in this report.

University of Maryland, College Park
The James Clark School of Engineering Aerospace, Bioengineering, Chemical, Civil, Computer, Electrical, Mechanical, and Materials Science programs were granted full reaffirmation in August 2018 until January 2023 and the Frostburg collaborative Fire Protection, Mechanical program was reaffirmed until September 2020 by the Accreditation Board for Engineering and Technology (ABET)

The School of Public Policy M.S. in Public Policy program underwent a reaffirmation review in March 2018 to be reaffirmed by the National Association of Schools of Public Policy, Affairs, and Administration (NASPAA).

The College of Agriculture and Natural Resources Bachelor of Landscape Architecture program underwent a reaffirmation review in February 2018 to be reaffirmed through 2023 by the Accreditation and Landscape Architectural Accreditation Board (LAAB).

The Department of Hearing and Speech Sciences M.A. in Speech Language Pathology and Doctor of Audiology programs in the College of Behavioral and Social Sciences underwent a reaffirmation review in February 2018 to be reaffirmed through 2026 by the Council on Academic Accreditation in Audiology and Speech Language Pathology (CAA). The enrollment and degree data for the M.A. in Speech Language Pathology and Doctor of Audiology programs are included in this report.

University of Maryland Eastern Shore
The Department of Fine Arts B.A. in Art Education and B.A. in Music Education programs in the School of Education, Social Sciences and The Arts underwent a reaccreditation review by the National Council for Accreditation of Teacher Education (NCATE) in 2018.

The Department of Technology M.Ed. in Career and Technology Education in the School of Business and Technology underwent a reaccreditation review by the Maryland State Department of Education (MSDE) in 2018.

The Department of Education B.S. in Special Education, Master of Arts in Teaching (MAT), and M.Ed. in Special Education programs in the School of Education, Social Sciences and The Arts underwent a reaccreditation review by National Council for Accreditation of Teacher Education (NCATE) / Council for the Accreditation of Educator Preparation (CAEP) in 2018.

Low Degree Productivity

MHEC Definition
Bachelor's: < 5 in most recent year or a total of 15 in last three years
Master's: < 2 in most recent year or a total of 6 in last three years
Doctorate: < 1 in most recent year or a total of 3 in last three years

By the aforementioned definition, ten (10) programs are considered to demonstrate "low productivity". The following brief summaries highlight the strategies being undertaken by the identified programs to address low enrollment and the low number of degrees awarded.

Coppin State University
The Entertainment Management Program (B) reported a growth plan to increase enrollment and improve degree production. The plan includes marketing strategies, recruitment schedules to meet with area high schools and partner community colleges, the promotion of the program as a "double major" or "double concentration" option, joint enrollment in sport management and entertainment management courses, partnering with other departments and disciplines, intrusive advising and personalized plans of study, and the identification of an administrator in 2019 to oversee the operations of the program.

The Nonprofit Leadership Program (B) reported an action plan to increase enrollment and degree production. The action plan activities are to revise the curriculum to identify and promote the strengths of the program, establish a marketing campaign in collaboration with University Relations, engage nonprofit professionals, enhance students' involvement with local nonprofit organizations, and identify community college partnerships and articulation agreements to recruit transfer students.

Frostburg State University
The Ethnobotany Program (B) is implementing a number of strategies to address enrollment and degree production. The strategies reported are to develop a targeted marketing and recruitment plan led by the program coordinator, revisit curricular modifications to make the program more flexible, consider the establishment of a concentration in ethnobotany within the biology department or a graduate certificate, procure additional funding to further support student experiential learning (i.e. excursions, student internships, and study abroad) and to upgrade plant facilities, and develop a partnership to increase the interaction between the ethnobotany program and Department of Sociology.

Salisbury University
The French Program (B) reported an action plan to increase enrollment and degree production that primarily focuses on revisions to the curriculum and continuous assessment of enrollment trends in the program between summer 2018 and fall 2020.

University of Maryland Eastern Shore
The Art Education Program (B) and Music Education Program (B) reported an action plan to increase enrollment and degree production that includes strategies to improve the recruitment, retention and graduation of students, establish targets for student enrollment and graduation,

increase scholarships for the first two years of Art Education, implement lab fees for designated courses, renovate the studio spaces, faculty development, and establish a timetable and plan to fund salary inequities.

The Business Education Program (B) reported an action plan to increase enrollment and degree production that includes a timeline for the creation of dual enrollment programs and articulation agreements with community colleges by March 15, 2019 and to develop a new certificate program for existing licensed teachers seeking preparation for the Praxis II in Business to teach secondary business curriculum in schools and for non-business majors to be approved in April 2019 by MHEC.

The Professional Science in Quantitative Fisheries and Resource Economics Program (M) indicated that to increase enrollment and degree production, dedicated institutional funding is required to adopt a student cohort model with faculty to support the program beyond the use of adjuncts.

The Technology and Engineering Education Program (B) reported an action plan to increase enrollment and degree production that includes assessment of the curriculum, consider a new post-baccalaureate certificate program for teachers, explore online delivery, offer the program at a USM RHEC, create articulation agreement with community colleges and high school dual enrollment programs, and hire a program coordinator.

The Urban Forestry Program (B) reported an action plan to increase enrollment and degree production that includes the development of innovative marketing initiatives to strengthen the community forestry concentration, work with horticulture and/or arboriculture programs to offer a certificate to promote career readiness for practitioners in related careers such as ISA, LEED, ANSI, etc., promote the program through the Maryland Community College network and high schools, and consider the program as an option under the general agriculture major.

Bowie State University; the University of Maryland, Baltimore; and the University of Maryland Center for Environmental Science do not have programs under review this cycle.

2017-2018 Periodic Review of Academic Programs

Coppin State University										
Program Title (Degree)	2013		2014		2015		2016		2017	
	Enrolled	Degrees	Enrolled	Degrees	Enrolled	Degrees	Enrolled	Degrees	Enrolled	Degrees
Elementary Education (B)	56	0	43	5	52	8	47	4	57	8
Entertainment Management (B)	39	5	31	3	25	4	21	2	17	3
Nonprofit Leadership (B)	14	0	14	0	14	1	18	1	21	2
Social Work (B)	191	31	187	44	186	43	171	55	153	43
Sport Management (B)	156	21	154	18	134	21	94	23	83	21

Notes:
1. B.S. in Elementary Education program underwent a reaccreditation review by the National Council for Accreditation of Teacher Education (NCATE) in AY 2017-2018.
2. B.S. in Entertainment Management program plan is to diversify its recruitment strategies and student advisement services.
3. B.S. in Nonprofit Leadership program plan is to revise the curriculum and implement an aggressive marketing campaign.
4. B.S. in Social Work program underwent a reaccreditation review by the Council on Social Work Education (CSWE) in 2017-2018.

Frostburg State University										
Program Title (Degree)	2013		2014		2015		2016		2017	
	Enrolled	Degrees	Enrolled	Degrees	Enrolled	Degrees	Enrolled	Degrees	Enrolled	Degrees
Chemistry (B)	65	5	68	10	48	9	45	3	36	8
Ethnobotany (B)	21	3	19	13	18	2	23	3	11	3
Interpretive Biology & Natural History (B)	21	2	19	6	18	10	18	6	16	8
Mathematics (B)	39	8	28	6	47	6	36	8	32	7
Social Work (B)	37	27	35	24	37	23	45	20	49	35
Sociology (B)	83	33	88	22	71	28	81	21	54	24

Notes: 1. B.S. in Ethnobotany program is modifying the curriculum to advance further student experiential learning and to increase targeted marketing and recruitment.

Degree Codes: (B) Bachelor's; (M) Master's; (D) Doctorate; (BFA) Bachelor's of Fine Arts; (BTS) Bachelor's of Technical Studies; (BPS) Bachelor's of Professional Studies; (UDC) Upper Division Certificate; (PBC) Post-Baccalaureate Certificate; (MAT) Master's of Arts in Teaching; (PMC) Post-Master's Certificate; (CAS) Certificate in Advanced Study

2017-2018 Periodic Review of Academic Programs

Salisbury University										
Program Title (Degree)	2013		2014		2015		2016		2017	
	Enrolled	Degrees	Enrolled	Degrees	Enrolled	Degrees	Enrolled	Degrees	Enrolled	Degrees
Art (B)	59	7	53	11	55	6	51	9	27	13
Art (BFA)	141	39	160	53	133	43	150	47	166	44
Arts in Theatre (B)	41	12	35	8	37	5	43	12	46	6
Chemistry (B)	109	14	112	15	117	20	127	14	122	15
Environmental Studies (B)	138	48	139	42	153	44	167	40	159	53
French (B)	14	1	13	4	15	6	12	1	8	4
International Studies (B)	70	18	62	58	70	13	69	15	49	15
Spanish (B)	55	11	46	11	36	14	29	7	27	9
Notes: 1. The B.A in French program supports the language requirement for the Fulton School of Liberal Arts and efforts are underway to revise the curriculum to promote enrollment, retention, and degrees awarded.										

Degree Codes: (B) Bachelor's; (M) Master's; (D) Doctorate; (BFA) Bachelor's of Fine Arts; (BTS) Bachelor's of Technical Studies; (BPS) Bachelor's of Professional Studies; (UDC) Upper Division Certificate; (PBC) Post-Baccalaureate Certificate; (MAT) Master's of Arts in Teaching; (PMC) Post-Master's Certificate; (CAS) Certificate in Advanced Study

2017-2018 Periodic Review of Academic Programs

Towson University										
Program Title (Degree)	2013		2014		2015		2016		2017	
	Enrolled	Degrees	Enrolled	Degrees	Enrolled	Degrees	Enrolled	Degrees	Enrolled	Degrees
Accounting (B)	664	110	667	126	718	150	697	148	689	170
Accounting and Business Advisory and Business Advisory Services (M)	51	19	38	22	39	15	41	16	33	25
Business Administration (B)	2,385	456	2,304	471	2,269	447	2,412	467	2,480	539
Communication Management (M)	20	16	8	6	15	1	23	5	21	8
Communication Studies (B)	370	109	387	131	384	135	388	118	402	149
e-Business (B)	94	17	81	22	55	39	40	23	27	17
History (B)	260	82	245	63	213	73	212	63	224	53
Interactive Marketing (PBC)	0	0	0	0	10	0	27	0	43	8
Jewish Studies (M)	12	1	12	2	13	2	11	1	9	3
Marketing Intelligence (M)	0	0	0	0	8	0	27	0	46	2
Mass Communications (B)	831	217	794	225	712	214	704	168	721	217
Project, Program and Portfolio Management, (PBC)	7	2	7	2	3	5	1	3	4	2
Supply Chain Management (M, PBC)	70	1	29	7	38	16	23	13	23	6
Women's and Gender Studies (B)	27	5	28	8	22	11	33	5	32	10
Women's and Gender Studies (M)	14	4	11	6	10	2	11	5	12	3
Women's and Gender Studies Certificate (PBC)	1	0	0	0	0	2	0	0	1	0

Notes:
1. B.S. in Accounting, B.A./B.S. in Business Administration, B.A./B.S. e-Business, M.S. in Accounting and Business Advisory Services, M.S. in Marketing Intelligence, M.S. in Supply Chain Management, P.B.C. in Interactive Marketing, and P.B.C. in Project, Program and Portfolio Management programs underwent a reaccreditation peer review visit on October 22-24, 2017 by the Association to Advance Collegiate Schools of Business (AACSB).
2. M.A. in Jewish Studies 2017-2019 program plan is to establish a committee for recruitment, enrollment and retention; create an annual schedule of community and student events at Towson; develop an internal and external marketing program; create a new B.A./M/A track; revise core requirement for the program; and develop an assessment plan.
3. The PBC in Interactive Marketing and PBC in Project, Program and Portfolio Management degree awards are determined by the master's definition of low productivity.
4. M.S. in Marketing Intelligence began in 2015 with increased enrollment and conferred its first degrees in 2017.

Degree Codes: (B) Bachelor's; (M) Master's; (D) Doctorate; (BFA) Bachelor's of Fine Arts; (BTS) Bachelor's of Technical Studies; (BPS) Bachelor's of Professional Studies; (UDC) Upper Division Certificate; (PBC) Post-Baccalaureate Certificate; (MAT) Master's of Arts in Teaching; (PMC) Post-Master's Certificate; (CAS) Certificate in Advanced Study

2017-2018 Periodic Review of Academic Programs

University of Baltimore										
Program Title (Degree)	2013		2014		2015		2016		2017	
	Enrolled	Degrees	Enrolled	Degrees	Enrolled	Degrees	Enrolled	Degrees	Enrolled	Degrees
Forensic Studies (B, UDC)	70	19	62	25	64	20	61	19	67	27
History (B)	53	22	48	14	51	13	53	11	41	11
Integrated Arts (B)	27	2	38	3	39	10	42	9	49	7
Juris Doctorate (JD)	979	310	864	314	779	268	691	279	662	222
Psychology (B)	95	28	106	16	119	32	113	40	98	23
Public Administration (M)	305	72	316	77	320	74	299	72	292	76

Notes:
1. The enrollments and degrees awarded reflect the B.S. in Forensic Studies and Upper Division Certificates (UDCs) in Crime Scene Investigation and Forensic Document Analysis programs. Students in the B.S. in Forensic Studies program are permitted to take courses in the UDCs as electives.
2. Juris Doctor program underwent a reaccreditation review simultaneously with the American Bar Association (ABA) Section on Legal Education and Admission to the Bar and the American Association of Law Schools (AALS) on November 5-8, 2017.
3. Master of Public Administration program underwent a reaccreditation review by the Network of Schools of Public Policy, Affairs, and Administration (NASPAA).

2017-2018 Periodic Review of Academic Programs

University of Maryland, Baltimore County										
Program Title (Degree)	2013		2014		2015		2016		2017	
	Enrolled	Degrees	Enrolled	Degrees	Enrolled	Degrees	Enrolled	Degrees	Enrolled	Degrees
Business Technology Admin (B)	268	52	310	66	341	84	313	70	314	87
Dance (B)	54	13	54	14	46	13	48	8	51	15
Environmental Science (B)	161	36	177	34	176	39	152	31	76	24
Environmental Studies (B)	82	19	89	23	66	23	55	21	25	13
Geography (BA)	22	5	15	11	28	10	22	8	14	3
Geography (BS)	37	6	30	7	25	6	21	9	31	4
Geography and Environmental Science (B)	0	0	0	0	0	0	36	3	83	17
Geography and Environmental Studies (B)	0	0	0	0	0	0	6	5	35	13
Geography and Environmental Systems (M)	15	6	17	6	13	4	13	3	10	6
Geography and Environmental Systems (D)	16	3	15	3	17	1	17	1	20	2
Geography Information Systems (MPS)	29	11	31	13	18	14	24	6	27	14
Geography Information Systems: Professional Studies (PBC)	9	5	9	4	11	8	6	3	10	5
Health Information Technology (MPS)	0	0	12	0	35	0	50	18	52	22
History (B)	282	79	221	67	205	53	217	49	223	61
Historical Studies (M)	43	17	33	7	33	12	26	8	28	12
Human Centered Computing (M)	47	20	39	14	42	16	35	15	38	16
Human Centered Computing (D)	19	2	19	2	16	3	18	0	17	2
Information Systems (BA, BS)	657	167	678	170	720	186	802	177	887	218
Information Systems (M)	162	43	201	84	219	90	208	125	137	74
Information Systems Online (M)	178	50	154	61	156	48	146	47	139	47
Information Systems Online (D)	53	6	56	4	54	7	59	10	56	7
Social Work (B)	397	85	430	119	411	116	405	125	407	106

Notes: 1. B.A. in Dance program underwent a reaccreditation review by the National Association of School of Dance (NASD), Commission on Accreditation in 2018.
2. B.A. in Social Work program was granted full reaffirmation on June 2018 Council on Social Work Education (CSWE), Commission on Accreditation (COA).

Degree Codes: (B) Bachelor's; (M) Master's; (D) Doctorate; (BFA) Bachelor's of Fine Arts; (BTS) Bachelor's of Technical Studies; (BPS) Bachelor's of Professional Studies; (UDC) Upper Division Certificate; (PBC) Post-Baccalaureate Certificate; (MAT) Master's of Arts in Teaching; (PMC) Post-Master's Certificate; (CAS) Certificate in Advanced Study

2017-2018 Periodic Review of Academic Programs

University of Maryland, College Park										
Program Title (Degree)	2013		2014		2015		2016		2017	
	Enrolled	Degrees	Enrolled	Degrees	Enrolled	Degrees	Enrolled	Degrees	Enrolled	Degrees
American Studies (B)	91	36	91	33	85	32	71	32	74	26
American Studies (M, D)	49	4	52	6	52	7	42	10	45	10
Applied Mathematics and Statistics and Scientific Computation (M, D)	98	23	82	14	76	23	68	28	67	13
Art History (B)	50	28	45	19	39	18	42	11	38	7
Art History (M, D)	38	11	36	4	35	9	31	6	32	3
Biophysics (M, D)	22	1	28	0	30	2	28	2	30	3
Chem Physics (M, D)	33	7	33	4	25	10	28	6	30	10
Government and Politics (B)	906	317	849	281	812	265	846	249	955	245
Government and Politics (M, D)	123	30	111	28	103	23	87	20	90	28
Hearing/Speech Sciences (B)	210	61	219	72	206	70	233	58	218	91
Hearing/Speech Sci/Speech Lang Path/Clin Audiology (M, D)	94	24	88	38	105	33	95	28	81	37
History (B)	423	195	382	142	322	143	285	111	257	98
History (M, D)	97	31	92	17	87	27	92	14	93	16
Notes: 1. M.A. in Speech Language Pathology and Doctor of Audiology programs underwent a reaffirmation review in February 2018 to be reaffirmed through 2026 by the Council on Academic Accreditation in Audiology and Speech Language Pathology (CAA).										

Degree Codes: (B) Bachelor's; (M) Master's; (D) Doctorate; (BFA) Bachelor's of Fine Arts; (BTS) Bachelor's of Technical Studies; (BPS) Bachelor's of Professional Studies; (UDC) Upper Division Certificate; (PBC) Post-Baccalaureate Certificate; (MAT) Master's of Arts in Teaching; (PMC) Post-Master's Certificate; (CAS) Certificate in Advanced Study

2017-2018 Periodic Review of Academic Programs

University of Maryland Eastern Shore										
Program Title (Degree)	2013		2014		2015		2016		2017	
	Enrolled	Degrees	Enrolled	Degrees	Enrolled	Degrees	Enrolled	Degrees	Enrolled	Degrees
Art Education (B)	7	2	11	0	12	0	9	1	5	0
Business Education (B)	6	2	2	1	1	0	7	0	3	0
Career and Technology Education (M)	83	9	78	4	71	8	85	10	115	2
Educational Leadership (D)	32	4	38	7	42	7	45	8	49	5
Food and Agricultural Sciences (M)	17	5	17	7	12	1	15	4	17	5
Master of Arts Teaching (MAT)	2	2	3	3	3	3	4	3	4	0
Music Education (B)	34	2	27	2	24	0	29	1	24	3
Organizational Leadership (D)	13	16	10	9	9	13	8	3	17	8
Professional Science in Quantitative Fisheries and Resource Economics (M)	4	2	2	0	1	0	2	1	1	1
Special Education (B)	15	4	12	6	11	4	10	7	4	4
Special Education (M)	8	1	10	3	18	7	12	11	8	1
Technology and Engineering Education (B)	2	0	2	2	7	1	6	0	2	1
Urban Forestry (B)	1	0	2	0	2	1	0	0	2	0

Notes:

1. B.A. in Art Education and B.A. in Music Education programs underwent a reaccreditation review by the National Council for Accreditation of Teacher Education (NCATE) in 2018. The program plans to implement enrollment and retention strategies to include student scholarships, lab improvements, and faculty development.
2. B.S. in Business Education program plan is to develop dual enrollment programs and articulation agreements with community colleges and create a new certificate program for existing licensed teachers and non-business majors to be approved in April 2019 by MHEC.
3. M.Ed. in Career and Technology Education underwent a reaccreditation review by the Maryland State Department of Education (MSDE) in 2018.
4. Professional Science Master's in Quantitative Fisheries and Resource Economics noted institutional funding is required to adopt a student cohort model with faculty to support the program beyond the use of adjuncts.
5. B.S. in Technology and Engineering Education program plan is to assess the curriculum, consider new post-baccalaureate certificate program, online delivery, offer program at a USM regional higher education center, create articulation agreements and dual enrollment programs, and replace program coordinator.
6. B.S. in Special Education, Master of Arts in Teaching (MAT), and M.Ed. in Special Education programs underwent a reaccreditation review by National Council for Accreditation of Teacher Education (NCATE) / Council for the Accreditation of Educator Preparation (CAEP) in 2018.
7. B. S. in Urban Forestry program plan is to implement new marketing and recruitment strategies and to pursue innovative curriculum changes.

Degree Codes: (B) Bachelor's; (M) Master's; (D) Doctorate; (BFA) Bachelor's of Fine Arts; (BTS) Bachelor's of Technical Studies; (BPS) Bachelor's of Professional Studies; (UDC) Upper Division Certificate; (PBC) Post-Baccalaureate Certificate; (MAT) Master's of Arts in Teaching; (PMC) Post-Master's Certificate; (CAS) Certificate in Advanced Study

2017-2018 Periodic Review of Academic Programs

University of Maryland University College										
Program Title (Degree)	2013		2014		2015		2016		2017	
	Enrolled	Degrees	Enrolled	Degrees	Enrolled	Degrees	Enrolled	Degrees	Enrolled	Degrees
Accounting/Information System (M)	163	40	148	33	173	23	181	43	129	40
Business Administration (B)	6,351	756	5,738	822	5,670	768	5,728	831	5,768	836
Business Administration (M)	2,259	1,119	1,983	873	2,136	835	2,032	775	2,338	885
Computer Networks/Cybersecurity (B)	1,790	259	2,097	349	2,446	387	3,235	437	4,582	585
Data Analytics (M)	0	0	49	0	217	0	305	23	380	57
Environmental Management (B)	419	82	362	78	330	49	365	63	382	63
Environmental Management (M)	336	93	308	87	260	78	262	81	258	67
Health Care Administration (M)	521	131	523	142	541	132	676	148	711	182
Social Science (A, B)	1,197	185	1,068	169	1,013	160	1,018	197	934	200

Notes:
1. M.S. in Accounting/Information System program plan is to add another layer of assurance to meet the competency needs for the profession, clarify the target audience for the degree, and distinguish the program from the other graduate programs in accounting.
2. M.S. in Analytics program plan is to integrate additional capstone projects with industry and government, incorporate additional open source software resources into the curricula, and integrate ethics issues in course projects.
3. B.S. in Environmental Management program plan is to revise curriculum to include more basic science and greater depth in sub-discipline, thread risk assessment throughout the curriculum, and infuse global climate change throughout the curriculum.
4. M.S. in Environmental Management program plan is to explore developing a certificate and to survey enrolled students.

Degree Codes: (B) Bachelor's; (M) Master's; (D) Doctorate; (BFA) Bachelor's of Fine Arts; (BTS) Bachelor's of Technical Studies; (BPS) Bachelor's of Professional Studies; (UDC) Upper Division Certificate; (PBC) Post-Baccalaureate Certificate; (MAT) Master's of Arts in Teaching; (PMC) Post-Master's Certificate; (CAS) Certificate in Advanced Study

UNIVERSITY SYSTEM of MARYLAND

BOARD OF REGENTS

SUMMARY OF ITEM FOR ACTION, INFORMATION, OR DISCUSSION

TOPIC: Update: Kirwan Commission on Innovation and Excellence in Education

COMMITTEE: Education Policy and Student Life

DATE OF COMMITTEE MEETING: Tuesday, January 15, 2019

SUMMARY: The *Commission on Innovation and Excellence in Education* has been at work for two years (2016-2018). Chaired by William E. "Brit" Kirwan, the Commission is made up of 25 members, including four state senators and four delegates. In January 2018, the Commission presented the basic outline of its recommendations for how to make Maryland's public schools competitive on a global standard to the Maryland General Assembly. For this aspect of the work, the Commission drew on the expertise of the *National Center for Education and the Economy* (NCEE). Because of the complexity of the task, the timeline for completion of the report was extended to January 2019. During the past year, the Commission developed recommendations in five key areas:

- Early Childhood
- High Quality Teachers and Leaders
- College and Career Readiness Pathways
- More Resources for At-Risk Students
- Governance and Accountability

In the last two months of 2018, the Commission drew on the expertise of the *Augenblick, Palaich and Associates* (APA) and the DLS to prepare a fiscal analysis of the recommendations. The multi-faceted analysis required complex projections. (For example, the expansion of early childhood education will require the preparation of more teachers and should also produce a cost-savings by reducing the number of students needing special education.) As a consequence of the complexity of the costing-out process, the Commission was not able to finalize the fiscal note details in time for the 2019 General Assembly, including the threshold decision regarding how much of the cost should be borne by the state government and how much by the county governments. The Presiding Officers of the General Assembly requested that the Chair appoint a small workgroup to finalize the fiscal analysis and present the recommendation to the full Commission in Fall 2019. The Commission has a robust set of recommendations to present to the 2019 General Assembly, and a preliminary "down-payment" budget request that will jump start implementation of the Commission recommendations while the detailed fiscal analysis is being prepared.

ALTERNATIVE(S): This is an information item.

FISCAL IMPACT: This is an information item.

CHANCELLOR'S RECOMMENDATION: This is an information item.

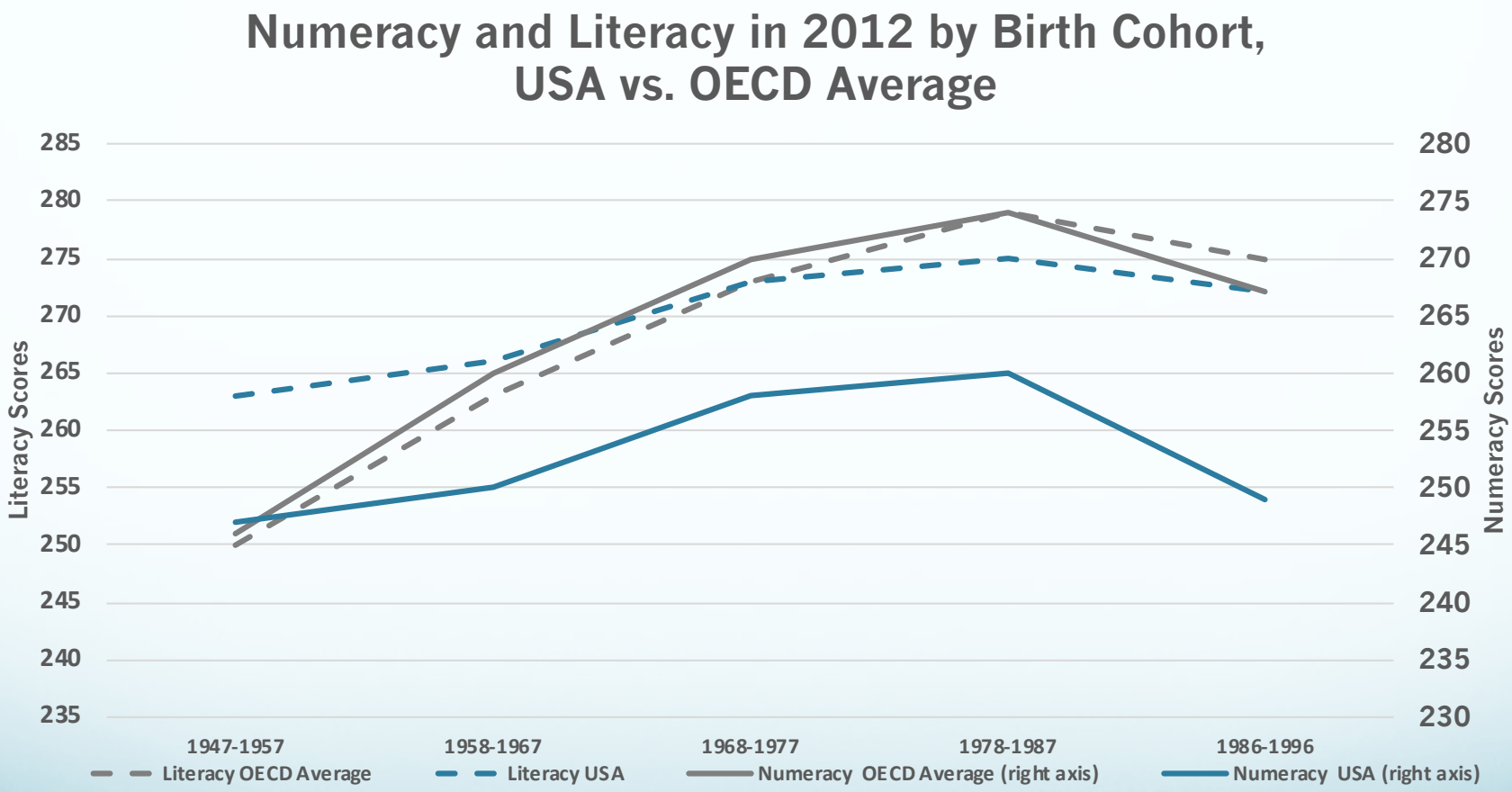
COMMITTEE ACTION: Information Only		DATE: January 15, 2019
BOARD ACTION:		DATE:
SUBMITTED BY: Joann A. Boughman	301-445-1992	jboughman@usmd.edu

Maryland Commission on Innovation and Excellence in Education

January 15, 2019
Board of Regents
Education Policy and Student Life

0

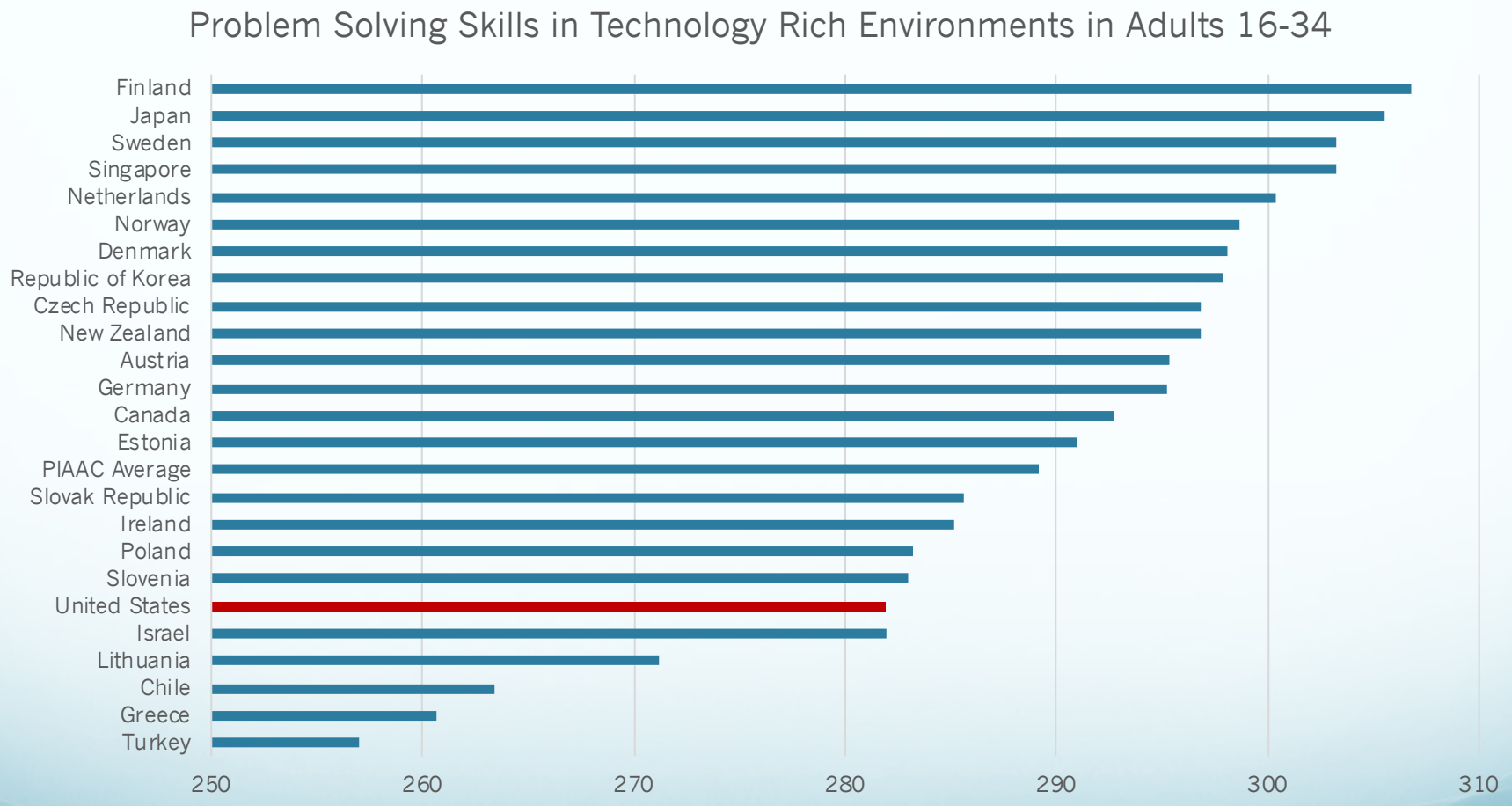
The Challenge: Declining Workforce Skills



Source: Brookings 2016, "The declining productivity of education," based on data from OECD PIACC

1

The Challenge: Poorly-Skilled US Millennials



Source: OECD PIAAC

2

Planning for the Future

- Maryland's economic future is dependent on a highly skilled, well educated, globally competitive workforce
- In today's world, high quality education and skills training is the only path out of poverty

Gap Analysis

International

- Finland, Ontario (Canada), Shanghai (China), Singapore

US

- Massachusetts, New Jersey, New Hampshire

Maryland is the first state to undertake a rigorous comparative assessment and cost analysis using NCEE's building blocks

Policy Recommendations

In December 2017, the Commission reached strong consensus on five major policy recommendations

- Invest in early childhood education
- Transform teaching into a high status profession
- Implement a rigorous curricula benchmarked to international standards leading to college ready and industry certified workforce credentials
- Provide significantly more support for at-risk students
- Significantly strengthen governance and accountability

Workgroup 1: Early Childhood Education

- Expand full-day Pre-K at no cost for three- and four-year old children 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 school 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

Workgroup 5: Governance and Accountability

- The Independent Oversight Board will have authority to develop a comprehensive plan for implementing the Commission's recommendations and hold all the State and local institutions and agencies involved in that plan accountable for carrying out their assigned roles
- The Board will be composed of seven members, appointed by the Governor, drawn from a slate of candidates developed by a representative nominating committee
- The Commission Approved the recommendation of an Independent Advisory Board at their final meeting (12/19/18)

Recommendations Directly Affecting USM/Higher Education

- Prepare more early childhood teachers/directors
- $250,000 annually for teacher outreach and recruiting to MSDE (helps with our recruiting)
- Changes in the requirements for career ladder that will impact Master's degrees (prioritizing National Board Certification over Master's degrees for professional promotion)
- Fully fund last year's HB1415: $2 million year one for the Teaching Fellows scholarship, increased to $4 million in year 2, $8 million in year 3, $12 million in year 4, and $18 million in year 5 and thereafter
- Reforming teacher preparation to include a full-year internship, with $2.5 million in partnership "seed" grants (university/school district) to experiment with new models of teacher preparation
- UMB School of Social Work opportunities to partner with more Baltimore Community Schools

FY 2020 Funding Priorities - Down Payment on Commission Recommendations

		Cost ($ in millions)	
1	Expand full day preK for 4 year olds	29	expand full day preK funding formula to include all 4 year olds being served in full day setting by public school systems
2	Fund seed grants for teacher collaboratives	2.5	voluntary collaboratives of school systems, teacher preparation institutions, and others to implement higher teacher standards including National Board Certification requirement in future, full-year practicum for prospective teachers, teacher induction programs, career ladder, etc.
3	Teacher salary increase	75	State funds half of 3% increase - require local match
4	Begin Transitional Tutoring Program	23	State share (roughly half) of Y0 estimated cost
5	Begin Concentration of Poverty Grants	55	fund community school coordinator and health practitioner for schools with 80% or more concentration of poverty
6	Increase Health/Behavioral Health funding	2	total State increase is $10.5m
7	Special education placeholder weight	137.5	About 30% of recommended total State increase
8	Outreach/Training costs	1	plus $250k (500k FY19 and 20) mandated by HB 1415 of 2018
	Total	**325**	

notes: 2019 legislation should also extend declining enrollment grants and full day preK formula through FY21
CTE Innovation Grants mandated at $2.5m annually under current law

UNIVERSITY SYSTEM of MARYLAND

BOARD OF REGENTS

SUMMARY OF ITEM FOR ACTION, INFORMATION, OR DISCUSSION

TOPIC: Report on Extramural Funding – FY 2018

COMMITTEE: Education Policy and Student Life

DATE OF COMMITTEE MEETING: Tuesday, January 15, 2019

SUMMARY: This report provides information on extramural awards received by USM institutions in support of specific initiatives in research, education, or service in FY 2018. In addition to detailed information by institution and funding source for FY 2017 and FY 2018, the report also provides five years of summary data by institution for comparison purposes. It is important to note that while the report on extramural awards is consistent within the USM, it is not directly comparable with NSF accounting-based reports nor with expenditure data in System budget documents.

In FY 2018, the System received a total of $1,427,395,642.14 in extramural funding, a 10% increase from the FY 2017 total of $1,292,254,826.32. UMB and UMCP garnered the largest extramural funding totals among System institutions. BSU, TU, UB, UMB, UMCES, UMCP, and UMUC obtained higher levels of extramural funding than in FY 2017.

ALTERNATIVE(S): This is an information item.

FISCAL IMPACT: This is an information item.

CHANCELLOR'S RECOMMENDATION: This is an information item.

COMMITTEE ACTION: Information Only	DATE: January 15, 2019
BOARD ACTION:	DATE:
SUBMITTED BY: Joann A. Boughman 301-445-1992	jboughman@usmd.edu

University System of Maryland

USM Report on Extramural Funding
FY 2018

Major sources of support for the activities on the campuses of the USM institutions come from extramural sources, including grants and contracts. The faculty and staff of USM institutions obtain funding for research, education, and public service activities from many sources. This report shows how many proposals each institution generated, how many awards were received, and the total amount of funding received from external sources.

In FY 2018, the System received a total of $1,427,395,642.14 in extramural funding, a 10% increase from the FY 2017 total of $1,292,254,826.32. The proportion of the total FY17 budget accounted for by extramural funding was essentially equal to that accounted for by General Funds/HEIF. As noted on table 2, overall external funding to the USM has been steadily increasing since FY 2014. These increases are promising, although securing federal funding is still challenging.

Awards are counted in the year they are received. By contrast, reports issued by government agencies, such as the National Science Foundation provide data on expenditures, not awards, for research; expenditures may be verified by accounting procedures but the data lag behind the receipt of awards by years.

Table 1 shows how much income each institution generated in each of the past two years from grants and contracts from the federal government, Maryland state agencies, non-profit foundations, corporations, and other sources, such as non-governmental organizations. Table 1 also shows the number of proposals submitted to each type of funding source and the number of grants received. It should also be noted that in this report, the number of awards represents not only new awards but also amendments to existing awards that provide additional funding not previously accounted for. Institutions that receive a high percentage of awards funded in increments will have a higher number of awards than proposals, since one initial proposal could result in multiple funding actions. It should also be noted that some awards received were the result of proposals submitted in a prior fiscal year and that notification regarding the funding of some proposals submitted in FY 2018 were still pending as the fiscal year closed.

At every institution, extramural funding derives from a variety of sources. Although the federal government is the largest funding source for the System as a whole and the majority of our institutions, the state government, corporations and foundations, and other sources provide critical support on the same order of magnitude for several of our comprehensive universities.

Table 1
Extramural Funding for the USM – Fiscal Years 2017 and 2018

FY 2017

USM

Source	Award Amount	Awards	Proposals
Federal	$793,563,440.34	3,004	3,771
State	$187,779,852.84	1,426	983
Corporate	$106,334,186.34	1,821	1,169
Foundations	$109,445,636.73	988	863
Other	$113,221,839.26	2,569	1,896
TOTAL	**$1,310,344,955.51**	9,808	8,682
Total Less Other USM	**$1,292,254,826.32**		

BSU

Source	Award Amount	Awards	Proposals
Federal	$8,033,374.86	45	26
State	$575,548.00	5	8
Corporate	$5,300.00	1	1
Foundations	$135,800.00	5	4
Other	$0.00	0	1
TOTAL	**$8,750,022.86**	56	40
Total Less Other USM	**$8,750,022.86**		

CSU

Source	Award Amount	Awards	Proposals
Federal	$5,411,138.80	23	38
State	$1,461,307.00	18	25
Corporate	$459,767.80	12	19
Foundations	$433,650.20	11	22
Other	$170,000.00	8	11
TOTAL	**$7,935,863.80**	72	115
Total Less Other USM	**$7,765,863.80**		

FSU

Source	Award Amount	Awards	Proposals
Federal	$2,422,337.00	9	13
State	$5,301,229.00	21	24
Corporate	$0.00	0	0
Foundations	$71,866.00	8	11
Other	$370,672.00	11	20
TOTAL	**$8,166,104.00**	49	68
Total Less Other USM	**$7,818,382.00**		

SU

Source	Award Amount	Awards	Proposals
Federal	$1,261,354.00	8	15
State	$4,037,922.00	44	49
Corporate	$39,687.00	4	6
Foundations	$362,276.00	21	23
Other	$717,348.00	62	75
TOTAL	**$6,418,587.00**	139	168
Total Less Other USM	**$5,760,833.00**		

FY 2018

USM

Source	Award Amount	Awards	Proposals
Federal	$860,251,346.82	2,911	3,715
State	$188,248,025.77	1,560	842
Corporate	$105,895,202.21	1,699	1,243
Foundations	$148,929,850.30	981	850
Other	$146,047,175.04	2,468	1,965
TOTAL	**$1,449,371,600.14**	9,619	8,615
Total Less Other USM	**$1,427,395,642.14**		

BSU

Source	Award Amount	Awards	Proposals
Federal	$9,697,161.70	54	30
State	$138,298.50	4	8
Corporate	$75,000.00	1	0
Foundations	$115,500.00	3	0
Other	$28,196.00	3	4
TOTAL	**$10,054,156.20**	65	42
Total Less Other USM	**$10,025,960.20**		

CSU

Source	Award Amount	Awards	Proposals
Federal	$4,262,905.00	20	32
State	$1,153,458.71	17	22
Corporate	$641,842.21	16	26
Foundations	$465,970.30	12	24
Other	$730,044.00	14	18
TOTAL	**$7,254,220.22**	79	122
Total Less Other USM	**$6,524,176.22**		

FSU

Source	Award Amount	Awards	Proposals
Federal	$1,150,456.00	12	9
State	$867,174.00	17	19
Corporate	$10,000.00	1	1
Foundations	$11,414.00	6	9
Other	$397,273.00	7	11
TOTAL	**$2,436,317.00**	43	49
Total Less Other USM	**$2,041,543.00**		

SU

Source	Award Amount	Awards	Proposals
Federal	$1,602,025.00	7	15
State	$3,437,315.00	40	46
Corporate	$15,851.00	3	6
Foundations	$172,159.00	18	37
Other	$287,193.00	41	60
TOTAL	**$5,514,543.00**	109	164
Total Less Other USM	**$5,141,941.00**		

FY 2017

TU

Source	Award Amount	Awards	Proposals
Federal	$5,834,363.00	26	60
State	$3,338,216.00	67	95
Corporate	$503,447.00	18	30
Foundations	$258,090.00	8	22
Other	$915,826.00	35	70
TOTAL	**$10,849,942.00**	154	277
Total Less Other USM	**$10,439,414.00**		

UB

Source	Award Amount	Awards	Proposals
Federal	$1,572,845.00	6	8
State	$7,489,517.00	43	38
Corporate	$60,073.00	6	4
Foundations	$821,710.00	28	35
Other	$925,228.00	14	16
TOTAL	**$10,869,373.00**	97	101
Total Less Other USM	**$10,582,279.00**		

UMB

Source	Award Amount	Awards	Proposals
Federal	$285,099,637.66	887	1,160
State	$79,895,227.13	334	372
Corporate	$66,995,810.27	582	529
Foundations	$86,617,906.21	335	533
Other	$37,462,631.33	409	560
TOTAL	**$556,071,212.60**	2,547	3,154
Total Less Other USM	**$553,170,320.29**		

UMBC

Source	Award Amount	Awards	Proposals
Federal	$48,910,501.00	318	317
State	$33,687,694.00	160	94
Corporate	$1,934,158.00	45	36
Foundations	$2,696,184.00	37	35
Other	$11,956,082.00	136	146
TOTAL	**$99,184,619.00**	696	628
Total Less Other USM	**$92,193,683.00**		

UMCES

Source	Award Amount	Awards	Proposals
Federal	$12,320,268.28	163	184
State	$6,695,455.07	102	56
Corporate	$1,795,160.10	89	21
Foundations	$682,865.00	29	15
Other	$3,807,776.46	197	37
TOTAL	**$25,301,524.91**	580	313
Total Less Other USM	**$24,739,097.91**		

FY 2018

TU

Source	Award Amount	Awards	Proposals
Federal	$4,020,010.00	24	50
State	$6,476,578.00	87	77
Corporate	$949,619.00	27	35
Foundations	$1,092,400.00	6	20
Other	$657,561.00	32	55
TOTAL	**$13,196,168.00**	176	237
Total Less Other USM	**$12,953,604.00**		

UB

Source	Award Amount	Awards	Proposals
Federal	$6,653,753.00	9	10
State	$4,832,026.00	38	21
Corporate	$90,930.00	2	2
Foundations	$823,787.00	25	20
Other	$1,562,714.00	10	9
TOTAL	**$13,963,210.00**	84	62
Total Less Other USM	**$13,698,053.00**		

UMB

Source	Award Amount	Awards	Proposals
Federal	$336,079,522.00	816	1,280
State	$87,383,998.00	380	286
Corporate	$68,832,881.00	557	542
Foundations	$126,206,745.00	373	507
Other	$48,899,582.00	430	649
TOTAL	**$667,402,728.00**	2,556	3,264
Total Less Other USM	**$664,599,070.00**		

UMBC

Source	Award Amount	Awards	Proposals
Federal	$40,457,391.00	254	276
State	$28,227,746.00	114	90
Corporate	$2,241,196.00	53	26
Foundations	$754,356.00	10	37
Other	$14,533,517.00	163	113
TOTAL	**$86,214,206.00**	594	542
Total Less Other USM	**$77,180,308.00**		

UMCES

Source	Award Amount	Awards	Proposals
Federal	$16,481,299.21	171	132
State	$4,376,060.56	103	53
Corporate	$2,520,760.00	80	13
Foundations	$816,441.00	44	31
Other	$2,946,106.04	193	26
TOTAL	**$27,140,666.81**	591	255
Total Less Other USM	**$26,833,196.81**		

FY 2017

UMCP

Source	Award Amount	Awards	Proposals
Federal	$361,545,198.84	1,472	1,865
State	$44,985,537.43	623	212
Corporate	$34,369,180.49	1,055	518
Foundations	$17,154,616.32	488	142
Other	$56,692,963.47	1,691	953
TOTAL	**$514,747,496.55**	5,329	3,690
Total Less Other USM	**$509,225,381.67**		

UMES

Source	Award Amount	Awards	Proposals
Federal	$19,252,290.90	44	82
State	$295,200.21	7	8
Corporate	$143,602.68	5	1
Foundations	$154,673.00	14	17
Other	$123,312.00	4	6
TOTAL	**$19,969,078.79**	74	114
Total Less Other USM	**$19,728,417.79**		

UMUC

Source	Award Amount	Awards	Proposals
Federal	$41,900,131.00	3	3
State	$17,000.00	2	2
Corporate	$28,000.00	4	4
Foundations	$56,000.00	4	4
Other	$80,000.00	2	1
TOTAL	**$42,081,131.00**	15	14
Total Less Other USM	**$42,081,131.00**		

FY 2018

UMCP

Source	Award Amount	Awards	Proposals
Federal	$371,357,141.00	1,492	1,790
State	$50,104,546.00	738	195
Corporate	$30,019,623.00	952	587
Foundations	$17,947,107.00	469	144
Other	$75,885.690.00	1,571	1,014
TOTAL	**$545,314,107.00**	5,222	3,730
Total Less Other USM	**$538,013,239.00**		

UMES

Source	Award Amount	Awards	Proposals
Federal	$14,094,991.91	47	86
State	$1,215,219.00	20	23
Corporate	$445,000.00	3	1
Foundations	$303,971.00	10	16
Other	$39,299.00	2	5
TOTAL	**$16,098,480.91**	82	131
Total Less Other USM	**$15,601,753.91**		

UMUC

Source	Award Amount	Awards	Proposals
Federal	$54,394,691.00	5	5
State	$35,606.00	2	2
Corporate	$52,500.00	4	4
Foundations	$220,000.00	5	5
Other	$80,000.00	2	1
TOTAL	**$54,782,797.00**	18	17
Total Less Other USM	**$54,782,797.00**		

Table 2
Extramural Funding Summary
Fiscal Years 2014-2018

Institution	FY2014	FY2015	FY2016	FY 2017	FY 2018	% Change
						FY17-FY18
BSU	$7,532,575.52	$8,823,812.70	$8,033,222.39	$8,750,022.86	$10,054,156.20	+14.9%
CSU	$7,669,564.52	$7,666,276.66	$6,105,918.50	$7,935,863.80	$7,254,220.22	-8.6%
FSU	$3,578,720.00	$7,408,335.00	$3,783,294.00	$8,166,104.00	$2,436,317.00	-70.2%
SU	$5,019,735.00	$5,598,086.00	$5,108,180.00	$6,418,587.00	$5,514,543.00	-14.1%
TU	$14,447,113.00	$18,010,901.00	$16,970,018.00	$10,849,942.00	$13,196,168.00	+21.6%
UB	$6,095,525.00	$7,615,763.00	$7,901,178.00	$10,869,373.00	$13,963,210.00	+28.4%
UMB	$500,912,032.00	$499,638,679.00	$497,537,747.00	$556,071,212.60	$667,402,728.00	+20.0%
UMBC	$74,026,763.00	$76,159,624.00	$85,305,358.00	$99,184,619.00	$86,214,206.00	-13.0%
UMCES	$23,783,962.18	$25,425,607.42	$25,723,496.06	$25,301,524.91	$27,140,666.81	+7.3%
UMCP	$479,069,009.00	$550,384,755.00	$560,216,354.00	$514,747,496.55	$545,314,107.00	+5.9%
UMES	$17,629,598.00	$21,445,048.00	$18,150,421.00	$19,969,078.79	$16,098,480.91	-19.4%
UMUC	$53,091,189.00	$51,321,961.00	$52,172,670.00	$42,081,131.00	$54,782,797.00	+30.2%
Institutional Total	**$1,192,855,786.22**	**$1,279,498,848.78**	**$1,287,007,856.95**	**$1,310,344,955.51**	**$1,449,371,600.14**	**+10.6%**
USM Total (LESS OTHER USM)	**$1,177,693,708.76**	**$1,264,331,163.78**	**$1,265,909,656.95**	**$1,292,254,826.32**	**$1,427,395,642.14**	**+10.4%**

UNIVERSITY SYSTEM of MARYLAND

BOARD OF REGENTS

SUMMARY OF ITEM FOR ACTION, INFORMATION, OR DISCUSSION

TOPIC: Report: Intercollegiate Athletics FY 2018 Academic Summary Report

COMMITTEE: Education Policy and Student Life

DATE OF COMMITTEE MEETING: Tuesday, January 15, 2019

SUMMARY: The BOR Policy on Intercollegiate Athletics (V-2.10) requires institutions to submit reports to inform the Board of the academic and financial status of the athletic programs. In addition to status updates being made to the Board's Committee on Finance and Committee on Education Policy and Student Life, the Board's Workgroup on Intercollegiate Athletics (ICA) exists to deeply explore the wide range of ICA issues.

Today, on behalf of Regent Barry Gossett (chair of the ICA Workgroup), Dr. Zakiya Lee (Assistant Vice Chancellor for Academic and Student Affairs) and Mr. Chad Muntz (Assistant Vice Chancellor Institutional Research, Data & Analytics) will deliver the ICA FY 2018 Academic Summary Report, which reviews the student-athlete academic measures discussed by the Workgroup during FY 2018 for USM's institutions with Division I athletics. The summary includes the aggregated synthesis for the measures required by the policy and includes comparisons about the preparedness of incoming student-athletes, their ongoing academic success, and their graduation rates. A summary of the current NCAA APR status is provided. Due to small squad size and the potential to individually identify students, only summary information is presented publically. The regents, however, are privy to detailed information when requested.

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: January 15, 2019
BOARD ACTION:		DATE:
SUBMITTED BY: Joann A. Boughman	301-445-1992	jboughman@usmd.edu

ICA FY 2018 Academic Summary Report

Board of Regents' Committee on Education Policy and Student Life

January 15, 2019

Student athletes are first and foremost students, and it is the expectation of the Board of Regents that their academic performance and progress will be comparable to that of non athletes.

This report summarizes the student-athlete academic measures discussed by the University System of Maryland (USM) Board of Regents' Intercollegiate Athletics (ICA) Workgroup during FY 2018. Due to small squad size and the potential to individually identify students, only summary information is presented. The following summary includes the aggregated synthesis for the measures required by the Policy (V-2.10) and includes comparisons about the preparedness of incoming student athletes, their ongoing academic success, and their graduation rates. Finally, the report concludes with a summary of the current NCAA APR status.

Summary of Academic Performance by Institution:

Coppin State University and the University of Maryland Eastern Shore (UMES) student-athletes' performances tended to be superior to their peers. The student athletes had the same or, in many cases, better academic preparedness than their peer freshmen. Both SAT score and high school GPA were more often higher than the student body, which led to better academic performance as measured by mid-year credit hour completion and cumulative GPA. The student-athlete cumulative GPA average was higher than the peer average, and student athletes completed more fall credit hours than their peers. Finally, the student-athlete graduation rates were often higher than that of the student-body average. In summary, without student athletes and their higher academic achievement, the academic performance averages for Coppin and UMES's entire student bodies would be lower.

Towson University and the University of Maryland, Baltimore County (UMBC) student-athletes' results were more academically comparable to their non-athlete peers. For most of the student athletes, the trend was for comparable entering preparation as the student body. This preparation led to slightly higher cumulative GPA averages and credit-hour completion than the student body. Finally, the most recent graduation rates for the student athletes were mixed. The Towson student-athlete men and UMBC student-athlete women were below their peers, but the UMBC student-athlete men and the Towson student-athlete women were above their peers.

The University of Maryland, College Park (UMCP) has a student body that is in the upper echelon of all higher education institutions drawing some of the most academically-talented students across the country and across the world. For that reason, it is not surprising that the student athletes, who also are among the best athletes in the country, fell short of matching the lofty academic achievement of their non-athlete peers. In general, the University of Maryland student-athlete trend is for less academic preparedness than peer entering freshmen—about a one quarter of the entering student athletes were admitted under special admit criteria. The student-athlete academic performance, as judged by GPA and credit hour completion, tended to be below their peers as observed by the lower cumulative GPA and fewer credit hours completed--the student-athlete cumulative GPA average was below 3.0, and the fall credit hour completed was about one credit-hour less than non-athlete peers. The graduation rates of the student-athlete cohorts tended to be lower than the student-body average. In summary, while the UMCP student-athlete academic performance was generally below their peers, the UMCP student athletes performed academically similar to the general student body of other USM institutions.

Summary of Academic Performance by Gender:

In general, women tend to have higher high school GPA and graduation rates than men. Across the athletic programs and individual sports, the trend for women student-athletes is to have better academic achievement as well. The one exception is men, both students and student-athletes, tend to have higher SAT scores.

Summary of Academic Preparedness across USM Institutions:

The student-athlete's data cluster into three tiers: First, the regular admits at the University of Maryland, College Park and regular admits at UMBC were very similar with 3.75 or higher high school GPA and SAT scores above 1200. The second tier was regular-admit students at Towson and the regular-admit student athletes at Towson, UMCP, and UMBC who had high school GPAs above 3.4 and SAT scores ranging from 1000-1199. The third tier would be all regular admits at Coppin, regular admits at UMES, special admits at UMCP, special admits at UMBC, and special admits at Towson where the high school GPA was above 2.50 and SAT scores ranged from 800 to 999.

Summary of Academic Performance across USM Institutions:

Students' and student-athletes' academic success also clustered into three tiers. The first tier, with graduation rates between 67-88%, included UMCP men and women, UMCP student-athlete women, UMBC women, Towson men and women, Towson student-athlete women, UMBC student-athlete men, and UMES student-athlete men. The second tier, with graduation rates ranging from 55-61%, included UMBC men, UMBC student-athlete women, UMCP student-athlete men, UMCP special admit women, UMES student-athlete women, and Towson student-athlete men. Finally, the lowest graduation rates fell below 50% for all students and student athletes at Coppin, all students and student athletes at UMES, UMCP and UMBC special-admit men, and special-admit women at UMBC. All the student athletes participating in these sports met NCAA standards per academic eligibility and retention.

Summary of Meeting NCAA APR Expectations—Published Data

The Intercollegiate Athletics workgroup expects the institutions to monitor and alert the Board of Regents should any academic or retention issues negatively impact the Academic Progress Rate (APR) of any specific sport. This expectation has been met, and the institutions keep the regents informed about progress towards meeting the NCAA minimum standards. Since the ICA Workgroup has instituted regular and ongoing review, the APR scores have been steadily increasing, and the regents have been made aware of potential problems well in advance of major issues developing.

Most recently, the NCAA published the APR scores by sport based on the outcome of FY 2017. No USM sports fell below the NCAA minimum expectations.

Across the USM Division I institutions, the official NCAA APR score fell in the following ranges:

- UMBC 950 (MBB) to 989 (Women's Cross Country)
- Coppin 937 (Softball) to 1000 (Women's Tennis)
- Towson 973 (Women's Track and Volleyball) to 1000 (Women's Cross Country, Gymnastics, and Women's Tennis)
- UMCP 936 (Men's Wrestling) to 1000 (8 sports tied)
- UMES 934 (MBB) to 1000 (Men's Golf)

All USM sports will be eligible for post-season competition when the teams finish the regular season in 2018-2019. The USM and its Board of Regents continue to monitor academic progress and its impact on the NCAA APR scores in the interim and fully expect continued academic success for student athletes.

UNIVERSITY SYSTEM of MARYLAND

BOARD OF REGENTS

SUMMARY OF ITEM FOR ACTION, INFORMATION, OR DISCUSSION

TOPIC: Motion to Adjourn and Reconvene in Closed Session

COMMITTEE: Education Policy and Student Life

DATE OF COMMITTEE MEETING: Tuesday, January 15, 2019

SUMMARY: The Open Meetings Act permits public bodies to close their meetings to the public in special circumstances outlined in §3-305 of the Act and to carry out administrative functions exempted by §3-103 of the Act. The Board of Regents' Committee on Education Policy and Student Life will now vote to reconvene in closed session. As required by law, the vote on the closing of the session will be recorded. A written statement of the reason(s) for closing the meeting, including a citation of the authority under §3-305 and a listing of the topics to be discussed, is available for public review.

It is possible that an issue could arise during a closed session that the Committee determines should be discussed in open session or added to the closed session agenda for discussion. In that event, the Committee would reconvene in open session to discuss the open session topic or to vote to reconvene in closed session to discuss the additional closed session topic.

ALTERNATIVE(S): No alternative is suggested.

FISCAL IMPACT: There is no fiscal impact.

CHANCELLOR'S RECOMMENDATION: That the Board of Regents' Committee on Education Policy and Student Life vote to reconvene in closed session.

COMMITTEE ACTION:		DATE: January 15, 2019
BOARD ACTION:		DATE:
SUBMITTED BY: Joann A. Boughman	301-445-1992	jboughman@usmd.edu

UNIVERSITY SYSTEM of MARYLAND

STATEMENT REGARDING CLOSING A MEETING
OF THE
USM BOARD OF REGENTS

Date: Tuesday, January 15, 2019

Time: 11:45 a.m. (approximately)

Location: University of Maryland, Baltimore County

STATUTORY AUTHORITY TO CLOSE A SESSION

Md. Code, General Provisions Article §3-305(b):

(1) To discuss:

[X] (i) The appointment, employment, assignment, promotion, discipline, demotion, compensation, removal, resignation, or performance evaluation of appointees, employees, or officials over whom it has jurisdiction; or

[ ] (ii) Any other personnel matter that affects one or more specific individuals.

(2) [X] To protect the privacy or reputation of individuals with respect to a matter that is not related to public business.

(3) [ ] To consider the acquisition of real property for a public purpose and matters directly related thereto.

(4) [ ] To consider a preliminary matter that concerns the proposal for a business or industrial organization to locate, expand, or remain in the State.

(5) [ ] To consider the investment of public funds.

(6) [ ] To consider the marketing of public securities.

(7) [ ] To consult with counsel to obtain legal advice on a legal matter.

(8) [ ] To consult with staff, consultants, or other individuals about pending or potential litigation.

(9) [ ] To conduct collective bargaining negotiations or consider matters that relate to the negotiations.

(10) [ ] To discuss public security, if the public body determines that public discussions would constitute a risk to the public or public security, including:

(i) the deployment of fire and police services and staff; and

(ii) the development and implementation of emergency plans.

(11) [ ] To prepare, administer or grade a scholastic, licensing, or qualifying examination.

(12) [ ] To conduct or discuss an investigative proceeding on actual or possible criminal conduct.

(13) [ ] To comply with a specific constitutional, statutory, or judicially imposed requirement that prevents public disclosures about a particular proceeding or matter.

(14) [ ] Before a contract is awarded or bids are opened, to discuss a matter directly related to a negotiation strategy or the contents of a bid or proposal, if public discussion or disclosure would adversely impact the ability of the public body to participate in the competitive bidding or proposal process.

Md. Code, General Provisions Article §3-103(a)(1)(i):

[ ] Administrative Matters

TOPICS TO BE DISCUSSED: (List topics to be discussed)
The Committee on Education Policy and Student Life will discuss recommendations for Regents' Faculty Awards and nominations for honorary degrees.

REASON FOR CLOSING:
To maintain confidentiality of personnel-related and personal information of candidates for faculty awards and honorary degrees. (§3-305(b)(1) and (2)).