



## Cover Sheet for In-State Institutions New Program or Substantial Modification to Existing Program

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| Institution Submitting Proposal | University of Maryland, Baltimore |
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*Each action below requires a separate proposal and cover sheet.*

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| <input checked="" type="radio"/> New Academic Program New<br><input type="radio"/> Area of Concentration New<br><input type="radio"/> Degree Level Approval New<br><input type="radio"/> Stand-Alone Certificate<br><input type="radio"/> Off Campus Program | <input type="radio"/> Substantial Change to a Degree Program<br><input type="radio"/> Substantial Change to an Area of Concentration<br><input type="radio"/> Substantial Change to a Certificate Program<br><input type="radio"/> Cooperative Degree Program<br><input type="radio"/> Offer Program at Regional Higher Education Center |
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| Department Proposing Program                 | University of Maryland Graduate School   |  |
| Degree Level and Degree Type                 | Accelerated Bachelor/Masters of Science in Health Science  |  |
| Title of Proposed Program                    | Accelerated Bachelors/Masters of Science in Health Science   |  |
| Total Number of Credits                      | 120  |  |
| Suggested Codes                              | HEGIS:   | CIP:                                   |
| Program Modality                             | <input type="radio"/> On-campus <input type="radio"/> Distance Education ( <i>fully online</i> ) <input checked="" type="radio"/> Both |  |
| Program Resources                            | <input checked="" type="radio"/> Using Existing Resources <input type="radio"/> Requiring New Resources                                |  |
| Projected Implementation Date                | <input type="radio"/> Fall <input type="radio"/> Spring <input checked="" type="radio"/> Summer             Year: 2020                 |  |
| Provide Link to Most Recent Academic Catalog | URL: <a href="http://www.graduate.umaryland.edu/policies/">http://www.graduate.umaryland.edu/policies/</a>                             |  |
| Preferred Contact for this Proposal          | Name:  | Flavius Lilly, PhD, MA, MPH            |
|  | Title:   | Senior Associate Dean, Graduate School |
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| President/Chief Executive                    | Type Name: Bruce E. Jarrell, MD, FACS, Executive VP and Provost  |  |
|  | Signature:   | Date: 10/09/2018                       |
| Approval/Endorsement by Governing Board      | Type Name:   |  |
|  | Signature:   | Date:                                  |

Revised 5/15/18



BRUCE E. JARRELL, MD, FACS  
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October 9, 2018

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

Dear Chancellor Caret:

The University of Maryland Graduate School is requesting authorization from the University System of Maryland to offer a Master of Science in Health Science-Physician Assistant Concentration to include an Accelerated Bachelor of Science in Health Science.

The MSHS- PA concentration 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 students with the necessary tools to serve 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."

This proposal also has been submitted to the Maryland Commission on Higher Education for its review.

We appreciate your consideration. Please contact me should you have any questions.

Sincerely,

A handwritten signature in black ink that reads "Bruce E. Jarrell".

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

**UNIVERSITY OF MARYLAND, BALTIMORE (UMB) GRADUATE SCHOOL**  
Proposal for Modification of the Master of Science in Health Science-Physician Assistant  
Concentration to include an  
Accelerated Bachelor of Science in Health Science

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## A. Centrality to institutional mission statement and planning priorities

### Program description and centrality to the institutional mission statement

Physician Assistants (PAs) are health care professionals who practice medicine and work on inter-professional teams collaborating with physicians. Physician Assistants are educated in the medical model, trained as generalists in primary care; they work in clinics, hospitals, the federal government, and the military conducting physicals, evaluating patient's medical complaints, interpreting labs and studies, performing procedures and prescribing medications, they may specialize in any branch of medicine. PAs serve an essential role on a healthcare team, filling gaps in services that result from shortages of physicians and increased need for healthcare among Maryland's urban, rural and aging population. Effectively training and building a PA workforce is critical to Maryland's future supply of health care providers.

The University of Maryland Baltimore (UMB) Graduate School is committed to fostering partnerships and leading a more integrated approach to Physician Assistant education in the state of Maryland. The UMB Graduate School has a PA Program in collaboration with Anne Arundel Community College (AACC). Currently, there is only one other PA program in Maryland, a collaboration between Towson University and the Community College of Baltimore County (CCBC). However, Frostburg State University is provisionally accredited from the Accreditation Review Commission for PA Education (ARC-PA) to launch a new program.

The current Master of Science in Health Science-Physician Assistant (MSHS-PA) concentration consists of 30 UMB upper division credits taken over the course of two years in collaboration with the Anne Arundel Community College (AACC) Physician Assistant Department. AACC currently offers 86 credits for a total of 116 credits to earn the MSHS-PA degree. UMB intends to convert AACC's 86 credits from lower division courses offered at the 100-200 level to upper division courses offered by UMB. Combined with UMB's current 30 credits, the program will meet a new mandate of the Accreditation Commission on Physician Assistant Education. The mandate requires that all Physician Assistant Programs award a master's degree by 2020 that is awarded by the sponsoring institution eligible to grant the graduate degree and deliver all PA courses at the high level rigor, this change is consistent with the University of Maryland Baltimore's mission and expertise.

To accomplish the task of educating the next generation of Physician Assistants, UMB will leverage the Graduate School's extensive human services expertise, and students will build on existing health professional competencies gained through prior education. UMB intends to continue collaboration with Anne Arundel Community College by developing a 3+2 accelerated pathway to Physician Assistant Program completion. Historically, students completed a BS degree from any regionally accredited institution and competed for enrollment in the PA program. We propose two new alternative pathways for students to apply to the PA program :

1. Students complete a BA/BS degree from any regionally accredited institution and complete all pre-requisite course work and the interprofessional healthcare professions (IPH) certificate program taught at the 200 level from Anne Arundel Community College, meet the standards for acceptance and receive preferential conditional acceptance in the UMB PA program; or
2. Students complete the Pre-Med Associates Degree at AACC, all pre-requisite courses and the the interprofessional healthcare professions (IPH) certificate offered at the 200

level from Anne Arundel Community College, meet the standards for acceptance, receive preferential conditional approval and complete their Bachelors of Health Science during their first year of the Masters of Health Science while enrolled in the MSHS with a PA concentration through the University of Maryland Baltimore PA Program.

The MSHS- PA concentration 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 students with the necessary tools to serve 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." Furthermore, the degree is a strategic priority of UMB's Diversity Advisory Council in achieving its goal of creating diversity, inclusion, and equity educational opportunities for students, faculty, and staff.

#### 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 MSHS-PA concentration degree is designed for completion within two academic years and the pathways to enter increases its accessibility to students by limiting costs, providing knowledge, skills and patient clinical experience in Maryland to encourage student's success. The University has recognized the important 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 students with the strategies to effectively engage with various inter-disciplinary learners and faculty, but it also equips students with the inter-professional competencies.
- The theme, **Partnership, and Collaboration** encourage institutions, schools and departments to collaborate internally and externally to provide impactful education, services and expertise to benefit Maryland and society. This degree program is a model for innovative collaboration with community college partners to develop robust pipelines to health professions across the state, while lowering cost and improving time to degree.

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

## Alignment with the Maryland State Plan

There is a critical and compelling regional and statewide need for Physician Assistants that necessitates the creation of an inclusive healthcare environment and fosters a diverse workforce. The Maryland State Plan for Postsecondary Education 2017-2021 outlines several goals for institutions of higher education.

This degree program addresses:

**Goal 1: Access, Affordability-** by offering an affordable, accelerated Bachelor's and Master's degree program to be completed within five years. This collaboration between Anne Arundel Community College and the University of Maryland, Baltimore Graduate School to offer an accelerated pathway will encourage program completion and health workforce enhancement while lowering educational cost, resulting in a student with lower debt and a competent primary care workforce.

**Goal 2: Success** – this degree program builds upon a legacy PA curriculum that has consistently produced ethical, competent and compassionate providers for the last 20 years. The curriculum imparts the knowledge and skills to attain the core competencies for new Physician Assistant graduates and interact with other healthcare providers and interdisciplinary faculty in a culturally responsive manner is learning the skills of health communication and literacy, cultural humility, and self- awareness and professionalism.

**Goal 3: Innovation-** The University of Maryland System K-20 workgroup, convened in 2018, recommended the creation of a task force to address state-wide articulation agreements between and among programs to align pipeline programs to enhance diversity and completion while lowering costs. This innovative 3+2 accelerated Bachelor/ Master degree provides a model for future articulation agreements.

## Alignment with National Trends

According to the Maryland State Data Center, the State's population is projected to increase from 5,988,400 people in 2015 to 6,968,700 people in 2045. This net increase of close to 1,000,000 residents, in addition to a growing aging population, will increase the demand for healthcare services. The growth of the population means more need for health care services generally, and members of the large baby boom generation will require more medical care as they age. An increase in the number of patients with chronic diseases, such as diabetes, will also increase health care demand and, in turn, drive the need for healthcare providers including physician assistants who often provide preventive care and treat the sick. Additionally, research indicates an increase in the number of chronic conditions diagnosed in a single patient, requiring more complex disease management – a needed service for which physician assistants are skilled. Furthermore, increases in incomes may improve access to health care services, and advances in medical technology will continue to increase the number and types of treatments available.

Physician assistants can provide many of the same services as [physicians](#). PAs are expected to continue to have a growing role in providing health care services because they can be trained more quickly than physicians. Team-based health care provision models will continue to evolve and become more commonly used. Physician assistants will have growing roles in all areas of

medicine as states expand advanced procedures and autonomy, and as insurance companies expand their coverage of physician assistant services.

### Job Outlook

Employment of physician assistants is projected to grow 37 percent from 2016 to 2026, much faster than the average for all occupations.

| Quick Facts: Physician Assistants                       |  |
|---|--|
| <a href="#">2017 Median Pay</a>                         | \$104,860 per year<br>\$50.41 per hour |
| <a href="#">Typical Entry-Level Education</a>           | Master's degree                        |
| <a href="#">Work Experience in a Related Occupation</a> | None                                   |
| <a href="#">On-the-job Training</a>                     | None                                   |
| <a href="#">Number of Jobs, 2016</a>                    | 106,200                                |
| <a href="#">Job Outlook, 2016-26</a>                    | 37% (Much faster than average)         |
| <a href="#">Employment Change, 2016-26</a>              | 39,600                                 |

Bureau of Labor Statistics, U.S. Department of Labor, *Occupational Outlook Handbook*, Physician Assistants, on the Internet at <https://www.bls.gov/ooh/healthcare/physician-assistants.htm> (visited September 04, 2018).

C. Quantifiable and reliable evidence and documentation of market supply and demand in the region and state. In 2016, the Maryland Office of Primary Care Access completed a statewide primary care needs assessment. The Maryland Statewide Needs Assessment is based on the integration of two health data tracking methods, the federal Agency for Healthcare Research and Quality (AHRQ) Prevention Quality Indicators (PQI) and the State Health Improvement Process (SHIP). The needs assessment determined that Baltimore City had the greatest need for providers and increased access to care due to the worst prevention quality indicators. The positive correlation between health care access and health status emphasizes a need for an increased number of providers including Physician Assistants in areas where healthcare access is limited to improve health outcomes. Thirteen Medically Underserved Population (MUPs) in Maryland cover more than 142,000 residents. Ten of Maryland's 24 jurisdictions have a MUP designation. Among these 10 counties, three have multiple MUP designations; Anne Arundel County with two, and Prince George's County with three. The current UMB/AACC collaborative PA program resides as the nexus of these counties.



The Maryland Occupational Projections for 2016-2026 Workforce Information and Performance report projects a 22.2 % increase in employment with anticipated need growing to 3,446 position and current occupancy as of 2016 at 2,850. An additional 626 positions are projected.

Maryland Department of Labor, Licensing and Regulations, Employment projections 2016-2026, retrieved on September 19, 2018 from <https://www.dllr.state.md.us/lmi/iandoproj/maryland.shtml>

The 2017 State Occupational Employment and Wage Estimates for Maryland provide additional evidence for the need for Physician Assistant Education.

| Occupational code | Employed | Employment RSE | Employment per 1,000 | Location Quotient | Mean hourly wage | Annual mean wage | Mean wage RSE |
|-------------------|----------|----------------|----------------------|-------------------|------------------|------------------|---------------|
| 29-1071           | 3010     | 10.4%          | 1.130                | 1.48              | 49.82            | 103,150          | 2.8%          |

Primary Care Office, Office of Primary Care Access, Prevention and Health Promotion Administration, Maryland Department of Health and Mental Hygiene  
<http://phpa.dhmh.maryland.gov/OPCA/Pages/Home.aspx>

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

Currently, there are no Physician Assistant academic programs offered through Bowie State University, Coppin State University, Morgan State University, and the University of Maryland Eastern Shore that resemble the proposed BS/MSHS PA Concentration. In 2016, the University of Maryland Eastern Shore lost the accreditation of their Physician Assistant program. 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 due to the current program in place and the demonstrated need for healthcare providers.

#### 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. We do not believe that offering this program impacts the mission of HBIs.

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

**To determine the knowledge, skills, behaviors and attitudes that best describe the essential functions of PAs in practice the faculty of the PA program referenced the work of the PA New Graduate Competency task force created by the Physician Assistant**

**Education Association. This task force studied workforce trends and employer expectations of new PA graduates. They also performed a comprehensive literature review and examined the healthcare competency frameworks from across the healthcare professions. The curriculum listed below builds up on a successful 20 plus years of PA education and Anne Arundel Community College and includes additional course work to incorporate technology in the curriculum to include use of a telehealth, telemedicine, electronic health records and advanced imaging.**

UMB is committed to providing the best teaching and learning possible and excellence in all its courses. Every effort is made to ensure that coherence, cohesiveness, and academic rigor between programs offered in traditional instructional formats and those offered on-line are equivalent. Courses are designed to result in program 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.

| Course Title  | Course Description  |
|---|---|
| <b>MHS 465</b><br><br><b>Foundations of Physician Assistant Practice</b><br><br><b>Five credits</b> | Students practice using empathetic listening skills, medical terminology, and apply basic anatomy and physiology concepts while learning patient-centered interviewing techniques and physical examination skills. Students practice and perform physical exams using telemedicine platform and diagnostics and simulated patients in a laboratory setting. Students gain foundational knowledge of the Inter-professional competencies that guide team practice and the history of the Physician Assistant profession by covering professional issues in ethics, government, and law |
| MHS 470<br><br>Applied Medical Science<br><br>Seven credits   | Students review foundational anatomy, physiology, genetics, microbiology and immunology concepts are given a medical context. This course includes cadaver laboratory activity.   |
| MHS 600<br><br>Introduction to Library Resources and Scholarly Writing<br><br>One credit            | Graduate learners develop skills in both accessing relevant online library resources and engaging in scholarly writing. The portions of the course focusing on library resources teach and strengthen lifelong research and information competency skills by introducing the student to the nature of research and the role of the library in the research process. The scholarly writing portion of the course will emphasize organization,  |

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|  | effective conveyance of thoughts through written words, and writing for multiple types of audiences.   |
| MHS 602<br>Legal and Ethical Issues for Health, Human Services and Clinical Professionals<br><br>Two credits | Students explore ethical and legal issues that are timely and germane to health professionals. This course is based on the premise that to act in an ethical manner means to engage in conduct according to accepted principles, and to improve moral confidence and moral action we must prepare the next generation of health professionals with ethical resources, tools and skills. A case base learning design will be utilized to engage students in ethical discussion, exploration, analysis with the goal of determining ethical and legal action that is sound and logical. This course will prepare students to make ethical healthcare decision ins in the future. |
| MHS 512<br>Clinical Medicine 1<br>Eight Credits  | Introduces the art of medicine and science of evidence- based decision making using an organ system approach. Prevention and diagnosis of various disease states are discussed; including healthy behavior, clinical presentation, differential diagnosis, laboratory findings, and treatment modalities. The course examines health across the adult lifespan including gerontology. The laboratory component focuses on developing students' skills to incorporate patient-centered care techniques and use of equipment encountered various healthcare settings.  |
| MHS 514<br>Pediatric Medicine 1<br>Two Credits   | Students are introduced to the most common diseases of the pediatric population with an emphasis on prevention, clinical presentation, differential diagnosis, evaluation and treatment modalities. This course examines illnesses specific to the newborn and adolescent.   |
| MHS 515<br>Psychiatric Medicine<br>Three Credits   | Introduces students to an operational understanding of the DSM-5 Classification system of psychiatric illness. This course includes discussion of the most common psychiatric diagnoses, evaluation and management. Pharmacologic and non-pharmacologic treatment, referral and consultation of common psychiatric disorders encountered in primary care across the life span is explored.   |
| MHS 520<br>Pathophysiologic approach to Pharmacotherapeutics I   | Part one of a two-part course presenting a pathophysiological approach to pharmacotherapeutics, provides the student with an understanding of drug action within the framework of human physiology, biochemistry and pathophysiology. In this  |

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| Three Credits   | course the therapeutic and adverse actions of drugs are understood in the framework of the drugs mechanism of action. Clinical vignettes are used to illustrate pathologic processes that integrate the actions of drugs from the level of an individual molecular target to the level of the human patient. In addition students will learn about drug delivery methods and the drug approval process.   |
| MHS 615<br>Biostatistical Methods for Health Professionals<br>Three 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 518<br>Clinical Medicine 2<br>Eight Credits                             | Apply skills of evidence- based decision making using an organ system approach. Prevention and diagnosis of various disease states are discussed; including healthy behavior, clinical presentation, differential diagnosis, laboratory findings, and treatment modalities. Develop clinical critical thinking and decision-making skills while interpreting patient histories, physical exams, laboratory and imaging interpretation and surgical sub- specialty exam and practice. Topics include.  |
| MHS 522<br>Patient Evaluation<br>One credit                                 | Students will practice history, physical, and clinical diagnosis in the community throughout the semester. . Students must pass a practical examination to complete the course and advance into the clinical year.  |
| MHS 519<br>Pediatric Medicine 2<br>Two credits                              | Integrate critical thinking related to diseases of the pediatric population with an emphasis on prevention, presentation, differential diagnosis and treatment modalities. Investigate diseases specific to the newborn through adolescence.  |
| MHS 521<br>Emergency Medicine<br>Four Credits                               | Students advance their knowledge of emergency, disaster and priority clinical assessment, diagnosis and management of patients from infancy to geriatric age. The student is trained to recognize potentially life-threatening illnesses and injuries commonly encountered in emergency medicine. Students use simulation to practice assessment, interdisciplinary teamwork and problem solving skills in a laboratory setting. Students practice and demonstrate core and advanced procedures.  |

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|   | Imaging and laboratory indications and interpretation skills are emphasized.  |
| MHS 523<br>Pathophysiologic Approach to Pharmacotherapeutics II<br>Three Credits      | Examine drug actions within the framework of human physiology, biochemistry and pathophysiology. Therapeutic and adverse actions of drugs are understood in the framework of the drug's mechanism of action. Utilize clinical vignettes to analyze pathologic processes that integrate the actions of drugs from the level of an individual molecular target to the level of the human patient.   |
| MHS 551<br>Clerkship Boot camp<br>One Credit  | Review program clinical policies, time management, and self-care practices in preparation for clinical year placement. Practice electrocardiogram, ultrasound and radiology interpretations skills. Apply interdisciplinary communications strategies. Health information technology tools such as CRISP and electronic medical records for medical coding and billing practice to improve patient safety and care.   |
| MHS 630<br>Essentials of Chronic and Infectious Disease Epidemiology<br>Three Credits | In the past 15 years, we have seen a rise in chronic disease impacted by behavior and policy, infectious disease outbreaks and new mechanisms of spread never seen before in the US. Clinicians must consider the biosocial impact of globalization and environmental change upon health and disease. In this course, students are presented with fundamental concepts of epidemiology to assist the new clinician in their efforts to critically evaluate the health and medical literature, participate in monitoring and surveillance of disease, and interpret data in their individual practice, community and nation to improve care in their practice and professional sphere. |
| MHS 671<br>Clerkship 1<br>Four Credits  | Participate in supervised clinical experience designed to provide the student with an opportunity to obtain medical data, formulate and implement a medical diagnosis and treatment plan. The clinical experience will be in one the required specialties such as Internal Medicine. Engage in tutorial sessions and on-site evaluation by faculty to demonstrate clinical competence. Students must pass an examination to complete the course.  |
| MHS 672<br>Clerkship 2  | Participate in supervised clinical experience designed to provide the student with an opportunity to obtain medical data, formulate and implement a medical diagnosis and treatment   |

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| Four Credits  | plan. The clinical experience will be in one the required specialties such as Family Practice. Engage in tutorial sessions and on-site evaluation by faculty to demonstrate clinical competence. Students must pass an examination to complete the course.   |
| MHS 673<br>Clerkship 3<br>Four Credits                                      | Participate in supervised clinical experience designed to provide the student with an opportunity to obtain medical data, formulate and implement a medical diagnosis and treatment plan. The clinical experience will be in one the required specialties such as Emergency Medicine. Engage in tutorial sessions and on-site evaluation by faculty to demonstrate clinical competence. Students must pass an examination to complete the course.  |
| MHS 652<br>Communication and Leadership<br>Three Credits                    | Students learn effective management and communication skills through case study-analysis, reading, class discussion and role-playing. The course covers topics such as effective listening, setting expectations, delegation, coaching, performance, evaluations, conflict management, negotiation with senior management and managing with integrity.   |
| MHS 633<br>Clinically Applied Social and Behavioral Theory<br>Three Credits | This course will discuss the social determinants of health and will go beyond the individual risk factor approach to health and disease, applying multi-disciplinary models and social epidemiology to elucidate the economic, sociocultural, political, and behavioral context and processes underlying health care access and health outcomes. Using a problem based context will explore how nutrition, oral health, addiction and mental illness impact health and disease and explore how social and behavioral health theories can be applied in a clinical context. |
| MHS 674<br>Clerkship 4<br>Four Credits                                      | Participate in supervised clinical experience designed to provide the student with an opportunity to obtain medical data, formulate and implement a medical diagnosis and treatment plan. The clinical experience will be in one the required specialties such as Pediatric Medicine. Engage in tutorial sessions and on-site evaluation by faculty to demonstrate   |

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|  | clinical competence. Students must pass an examination to complete the course.   |
| MHS 675<br>Clerkship 5<br>Four Credits       | Participate in supervised clinical experience designed to provide the student with an opportunity to obtain medical data, formulate and implement a medical diagnosis and treatment plan. The clinical experience will be in one the required specialties such as OB/GYN Medicine. Engage in tutorial sessions and on-site evaluation by faculty to demonstrate clinical competence. Students must pass an examination to complete the course.   |
| MHS 676<br>Clerkship 6<br>Four Credits       | Participate in supervised clinical experience designed to provide the student with an opportunity to obtain medical data, formulate and implement a medical diagnosis and treatment plan. The clinical experience will be in one the required specialties such as General Surgery Medicine. Engage in tutorial sessions and on-site evaluation by faculty to demonstrate clinical competence. Students must pass an examination to complete the course.  |
| MHS 660<br>Applied Pharmacology<br>3 credits | By the end of this course, students will have an advanced knowledge in pharmacology used in the treatment of selected health conditions commonly encountered by healthcare providers. Students will apply principles of clinical pharmacology, therapeutics, pharmacokinetics, and drug metabolism learned in PHA 120 and PHA 123 as they focus on the pathophysiological approach to pharmacology. Course activities and resources will emphasize: the integration of pathophysiology and pharmacologic principles, mechanisms of action of drugs, side effects, adverse effects, drug interactions, and the pharmacologic application in clinical settings. Using case studies provided through electronic medical records, students will achieve competency in the decision-making processes used to safely and effectively prescribe and monitor Pharmacotherapeutics appropriate to specific patient needs through realistic, simulated, inter-professional interactions of healthcare providers. |

|   |  |
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| <p>MHS 608<br/>Research Seminar 1<br/>3 credits</p>                           | <p>This is a 3-credit seminar course designed to give students the basic information regarding health sciences research discoveries. It also provides students with the tools to approach translational research in their present and future work. The course covers the core competencies in clinical and translational research, and each session addresses a core thematic area. Students log-in once a week during the semester. Faculty members give a lecture, followed by a student-led presentation. The presentation is followed by a discussion in which all students are evaluated based on participation. Students are given a short essay assignment based on each lecture. The student presentations and short essays count toward the final grade. A research paper also is assigned.</p> |
| <p>MHS 677<br/>Clerkship 7<br/>Four Credits</p>                               | <p>Participate in supervised clinical experience designed to provide the student with an opportunity to obtain medical data, formulate and implement a medical diagnosis and treatment plan. The clinical experience will be in one the required specialties such as Psychiatric Medicine. Engage in tutorial sessions and on-site evaluation by faculty to demonstrate clinical competence. Students must pass an examination to complete the course.</p>   |
| <p>MHS 678<br/>Clerkship 7<br/>Four Credits</p>                               | <p>Participate in supervised clinical experience designed to provide the student with an opportunity to obtain medical data, formulate and implement a medical diagnosis and treatment plan. The clinical experience will be in one the required specialties such as Internal Medicine-Subspecialty. Engage in tutorial sessions and on-site evaluation by faculty to demonstrate clinical competence. Students must pass an examination to complete the course.</p>   |
| <p>MHS 622: Improving Quality of Care in Health Systems<br/>Three Credits</p> | <p>This 8-week, online course will explore health policy, finance and system issues that are timely and germane to health professionals. This course is based on the premise that to practice in today's complex healthcare environment, students must understand the economic and theoretical underpinnings of the health system. A case-based learning design will be</p>  |



|  |  |
|--|--|
|  | utilized to engage students in discussion, exploration, analysis with the goal of improving the safety and quality of care provided in health systems. This course will prepare students to make informed health care decisions related to health finance, and patient safety in the future.   |
| MHS 609<br>Research Seminar 2<br><br>Three Credits | This course is a continuation of the prior research seminar course. Students will be divided in small groups to work collaboratively, researching under the mentorship of a faculty member to discuss current clinical issues. Students will complete a literature search and propose a practice-based improvement plan. Final approval by a faculty mentor is required.   |
| MHS 679<br>Clerkship 9<br><br>Four Credits         | Participate in supervised clinical experience designed to provide the student with an opportunity to obtain medical data, formulate and implement a medical diagnosis and treatment plan. The clinical experience will be in one the required specialties such as Internal Medicine. Engage in tutorial sessions and on-site evaluation by faculty to demonstrate clinical competence. Students must pass a summative written and clinical examination to complete the course.   |
| MHS 680<br>Issues and Trends<br><br>Three Credits  | Demonstrate knowledge of current professional issues and the effects of law, ethics, and government on the Health care system. Appraise research and discuss issues of preventive, precision and evidence- based medicine and the impact on the role of the physician assistant. Perform critical analysis of assigned readings.   |
| MHS 700<br>Capstone<br><br>Credits                 | The capstone is designed to be a supervised health science learning experience and a demonstration of the substantive application of the knowledge and skills that have been acquired in the courses taken as part of the M.S. in Health Science Program. The capstone functions as both the practice experience and the culminating experience for the program. The M.S. in Health Science capstone experience includes the following components: development of a capstone proposal; delivery of an oral presentation at UMB, and at the field placement site as appropriate; and preparation of a capstone portfolio. |

### Implementation and Management

UMB will be responsible for the educational and administrative needs of all students enrolled in the MSHS-PA concentration in accordance with UMB policies and procedures. UMB will ensure that all course offerings will be entered in the UMB student registration system. UMB will

ensure that all course offerings appear correctly on student transcripts and student records; and will ensure that tuition fees are at the applicable rate.

Accordingly, students enrolled in the MSHS-PA concentration 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. Appropriate faculty have been identified and additional guest lectures will be identified as needed.

**Discuss how general education requirements will be met, if applicable.**

See Appendix A Anne Arundel Community College Transfer Studies Associates Degree and Inter-professional Health Professions Certificate. UMB will accept a total of 90 credits from AACC. 60 credits of Transfer Studies Associates degree and 30 additional credits offered at the 200 level transferred into UMB at the 300 level and award 30 additional credits 400-500 level coursework from the first three semesters of the PA program for a total or 120 credits to earn the Bachelor of Health Science Degree.

**Identify any specialized accreditation or graduate certification requirements**

University of Maryland Baltimore will seek transfer of sponsorship for the PA program from Anne Arundel Community College to assure ongoing compliance with the Accreditation Commission for Physician Assistant Education (ARC-PA)

**If contracting with another institution, provide a copy of the contract**

**H. Adequacy of articulation**

**I. Adequacy of faculty resources**

| Faculty Member Name         | Terminal Degree   | Full-Time or Part Time | Courses Taught   |
|-----------------------------|-------------------|------------------------|--|
| Theresa Neumann, MS<br>PA-C | Master of Science | Full-time              | MHS 465 Foundations of Physician Assistant Practice<br>MHS 512 Clinical Medicine<br>MHS 522- Patient Evaluation<br>MHS 671- Clerkship 1                            |
| Robert Cook MD              | MD                | Full-time              | MHS 470 Applied Medical Science<br>MHS 520 Pathophysiological approach to Pharmacotherapeutics I<br>MHS 523 Pathophysiological approach to Pharmacotherapeutics II |

|   |     |   |  |
|---|-----|---|--|
|   |     |   | Clerkship 675-Clerkship 5<br>MHS 700- Capstone   |
| Isabel May, PhD                             | PhD | Full-time<br>Director of the<br>Writing Center UMB<br>and Senior Lecturer                           | MHS 600- Research and<br>Scholarly Writing   |
| Sarah Archibald, PhD                        | PhD | Full-time<br>Director of the<br>Center for Health<br>and Human<br>Protection and<br>Senior Lecturer | MHS 602- Legal and<br>Ethical Issues for Health,<br>Human Services and<br>Clinical Professionals   |
| Tim Parker MS, PA-C                         | MS  | Full-time   | MHS 514 Pediatric<br>Medicine 1<br><br>MHS 519 Pediatric<br>Medicine 2<br><br>MHS 551<br><br>Clerkship Boot camp<br>MHS 672- Clerkship 2<br>MHS 676-Clerkship 6<br>MHS 676-Clerkship 7<br>MHS 677-Clerkship 8<br>MHS 678-Clerkship 9 |
| Cecelia Tang, MD                            | MD  | Part-Time   | MHS 515<br><br>Psychiatric Medicine  |
| Larry Magder, PhD<br>Assistant Professor    | PhD | Full-time   | MHS 615 Biostatistical<br>Methods for Health<br>Professionals  |
| Donny Ard, MHA, PA-C<br><br>Senior Lecturer | MHA | Full-time   | MHS 518<br><br>Clinical Medicine 2<br><br>MHS 622- Improving<br>Quality of Care in Health<br>Systems<br><br>MHS 673-Clerkship 3<br><br>MHS 700- Capstone   |

|   |                           |           |   |
|---|---------------------------|-----------|---|
|   |                           |           |   |
| *Cheri Hendrix DHEd,<br>PA-C            | DHEd,                     | Full-time | MHS 521<br>Emergency Medicine<br>MHS 674-Clekrship 4<br>MHS 680- Issues and<br>Trends   |
| Flavius Lilly PhD, MPH<br>Mary Jo Bondy | PhD<br>DHEd, MHS,<br>PA-C | Full-time | MHS 630<br>Essentials of Chronic<br>and Infectious Disease<br>Epidemiology<br>MHS 652<br>Communication and<br>Leadership<br>MHS 608- Research<br>Seminar 1<br>MHS 700- Capstone |
| Mirian Offenudu,                        | PhD SSW                   | Part-time | MHS 633- Clinically<br>Applied Social and<br>Behavioral Theory  |
| Larisa Odessky PharmD                   | PharmD                    | Full-time | MHS 609- Research<br>Seminar 2<br>MHS 660- Applied<br>Pharmacology<br>MHS 700- Capstone   |
|   |                           |           |   |

Lead Faculty

\*denotes program director

#### **J. Adequacy of library resources**

The University of Maryland, Baltimore's Health Sciences and Humans Services Library (HS/HSL) collection contains 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 web site by logging in with their University ID number. The library serves as the regional medical library for 10 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 provide 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 record of accomplishment 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 web site ([www.hshsl.umaryland.edu](http://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 in 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 is 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 10 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. Faculty have 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 accelerated BS/MSHS-PA 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 includes 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.

Currently the PA program is physically located in Hanover Maryland at the Regional Higher Education Center, This site offers state of the art learning environment for students at the nexus of the Prince Georges, Anne Arundel, Montgomery and Baltimore Counties. Just a short distance from Baltimore this location allows for ease of travel to clinical sites and AACC and UMB main campuses to access laboratories and standardized patient and simulation educational and inter-professional opportunities.

#### **L. Adequacy of financial resources with documentation**

Enhancement funds from UMB fund balance have been approved to support the program, specifically to assist with developing an infrastructure to support accreditation, clinical assignments. In addition funds were requested to develop a longitudinal telehealth and telemedicine curriculum to be shared across the state and integrated into all PA training. No new general funds from UMB will be required for implementation of the proposed accelerated MSHS-PA. The degree will be coordinated and administered fully through the Graduate School including supporting the 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 Budget Table provided in Appendix C this certificate is expected to be self-supported.

#### **M. Adequacy of provisions for evaluation of 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 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 and self-study. Additional evaluation includes tracking of student retention, grade distributions, and cost-effectiveness, with regular academic program reviews considering these factors.

Continuing accreditation requires annual reporting of program resources, budget, outcomes, and national certifying exam success and program faculty. In addition ongoing program review will be conducted by the three established committees run by faculty admissions, curriculum and progressions to assure ongoing assessment and adequacy of resources.

## **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 accelerated BS/MSHS-PA concentration degree aims to address both UMB’s and the State’s cultural diversity goals. First, the multimodal delivery of the courses in the program using face to face, clinical laboratory, community clerkships and distance learning technology will enhance student access to faculty and program mentoring, as it expands access and success for learners from diverse communities. For rural and isolated communities, multimodal 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 programs with internet-based degrees that embrace core values of social change and community engagement.

The second way the new BS/MSHS-PA concentration addresses diversity goals is that multimodal learning not only achieves “access,” but can also help ensure “success,” as the interactive nature of teaching with technology meets the needs of various learners and allows for student centric, individualized instruction. Essentially, with the proper use of its varied technology, multimodal 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 preferred learning environment grounded in outmoded ideas about one-size fits all educational pipelines, the varied types of interactions proposed in this program 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 effective collaborative learning values diversity (Palloff & Pratt, 2005; Brindley, Walti, & Blaschke, 2009).

Additionally, UMB realizes that it must not only embrace and celebrate diversity, but also provide opportunities to develop students and faculty who can promote cultural competence and intercultural leadership. The BS/MSHS-PA concentration uses a comprehensive approach to positively influence the climate for inter-professional collaboration and diversity, by modeling inter-professional collaboration via a multidisciplinary, multicultural faculty working collaboratively.

## **O. Relationship to low productivity programs identified by the Commission**

The proposed new BS/MSHS PA concentration 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**

## Context of Online Education at UMB

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. In addition, UMB emphasizes interdisciplinary education in an atmosphere that explicitly values civility, diversity, collaboration, and accountability. UMB expects to achieve its mission in education excellence and to be competitive; the Graduate School has designed and offered face to face and 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 multimodal 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 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.
- **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. Through online learning, institutions seek 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 program delivered largely or solely on a college campus. Faculty members who teach in online programs also have the ability to respond to individual student learning needs and styles in ways that cannot be duplicated in the face-to-face classroom. Major 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 face to face and distance education - this rubric helps faculty and instructional designers develop the courses, assess the readiness of the course and ensure that the courses are instructionally 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 online coursework included in the MSHS:

#### **Mary Jo Bondy, DHEd, PA-C | Assistant Dean, Academic Programs**

Dr. Bondy, administratively oversees multiple 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 Physician Assistant education, online education policy, curricular design, and program assessment.

#### **Kevin Engler, MA | Instructional and Curriculum Designer**

Mr. Engler holds a Master 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 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 faculty and to 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 trouble shoot 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 prompts 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 the courses for the accelerated Bachelor/of health Science Master of Health Science PA concentration will have an online component, and the majority will be delivered face to face. 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 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 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 enough to enable students to complete a certificate.

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### Appendix A: Conversion of AAAC Lower-Division Courses to UMB Upper Division Courses

| AAAC Course Title                                   | AAAC Credit Hours | AAAC Course Level | UMB Course Title  | UMB Credit Hours | UMB Course Level |
|---|-------------------|-------------------|---|------------------|------------------|
| Foundations of Physician Assistant Practice         | 5 credits         | 100               | Foundations of Physician Assistant Practice<br><br>Five credits | 5 credits        | 400              |
| Applied Medical Science                             | 7 credits         | 100               | Applied Medical Science   | 7 credits        | 400              |
| Clinical Medicine 1                                 | 8 credits         | 100               | Clinical Medicine 1   | 8 credits        | 500              |
| Pediatric Medicine 1                                | 2 credits         | 100               | Pediatric Medicine 1  | 2 credits        | 500              |
| Psychiatric Medicine                                | 3 credits         | 100               | Psychiatric Medicine  | 3 credits        | 500              |
| Pathophysiologic approach to Pharmacotherapeutics I | 3 credits         | 100               | Pathophysiologic approach to Pharmacotherapeutics I             | 3 credits        | 500              |
| Clinical Medicine 2                                 | 8 credits         | 100               | Clinical Medicine 2   | 3 credits        | 500              |
| Pediatric Medicine 2                                | 2 credits         | 100               | Pediatric Medicine 2  | 3 credits        | 500              |
| Emergency Medicine                                  | 4 credits         | 100               | Emergency Medicine  | 4 credits        | 500              |
| Pathophysiologic approach to                        | 3 credits         | 100               | Pathophysiologic approach to                                    | 3 credits        | 500              |

|                         |                          |                          |                            |                         |                         |
|-------------------------|--------------------------|--------------------------|----------------------------|-------------------------|-------------------------|
| Pharmacotherapeutics II |                          |                          | Pharmacotherapeutics II    |                         |                         |
| Patient Evaluation      | <b>1 credit</b>          | <b>100</b>               | Patient Evaluation         | <b>1 credit</b>         | <b>500</b>              |
| Clerkship Boot camp     | <b>1 credit</b>          | <b>200</b>               | <b>Clerkship Boot camp</b> | <b>1 credit</b>         | <b>500</b>              |
| Clerkship 1             | <b>4 credit</b>          | <b>200</b>               | Clerkship 1                | <b>4 credit</b>         | <b>600</b>              |
| Clerkship 2             | <b>4 credit</b>          | <b>200</b>               | Clerkship 2                | <b>4 credit</b>         | <b>600</b>              |
| AAAC Course Title       | <b>AAAC Credit Hours</b> | <b>AAAC Course Level</b> | <b>UMB Course Title</b>    | <b>UMB Credit Hours</b> | <b>UMB Course Level</b> |
| Clerkship 4             | <b>4 credit</b>          | <b>200</b>               | Clerkship 4                | <b>4 credit</b>         | <b>600</b>              |
| Clerkship 5             | <b>4 credit</b>          | <b>200</b>               | Clerkship 5                | <b>4 credit</b>         | <b>600</b>              |
| Clerkship 6             | <b>4 credit</b>          | <b>200</b>               | Clerkship 6                | <b>4 credit</b>         | <b>600</b>              |
| Clerkship 7             | <b>4 credit</b>          | <b>200</b>               | Clerkship 7                | <b>4 credit</b>         | <b>600</b>              |
| Clerkship 8             | <b>4 credit</b>          | <b>200</b>               | Clerkship 8                | <b>4 credit</b>         | <b>600</b>              |
| Clerkship 9             | <b>4 credit</b>          | <b>200</b>               | Clerkship 9                | <b>4 credit</b>         | <b>600</b>              |
| Issues and Trends       | <b>3 credit</b>          | <b>200</b>               | Issues and Trends          | <b>3 credit</b>         | <b>600</b>              |

## Appendix B. Sample Five-Year Plan of Study

## Years 1- 2

### AACC AA Transfer degree

[https://catalog.aacc.edu/preview\\_degree\\_planner.php?catoid=23&poic=8249&print](https://catalog.aacc.edu/preview_degree_planner.php?catoid=23&poic=8249&print)

After selective admission students who excel in all classes meeting a minimum cumulative GPA of 3.4 and earning a B or higher in all Science courses will be offered selective conditional acceptance to the BS/MS degree option and complete the 30 credits Inter professional health profession certificate (IPH).

### Year 3 – proposed curriculum for new certificate pending MHEC approval

#### Year 3: AACC Professional Certificate/Transition to BSHS degree

##### *Inter-professional Healthcare Professions (IPH) Certificate*

| Fall Semester   | New Course Number | Course Title   | Credit Hours |
|-----------------|-------------------|--|--------------|
|                 | IPH 240           | Spanish for Medical Professionals  | 3            |
|                 | HUS 275           | Human Services Practicum<br><i>with service learning/patient contact co-op component</i> | 3            |
|                 | IPH 262           | Clinical Hematology and Microbiology   | 4            |
|                 | IPH 260           | Behavioral Health  | 3            |
|                 | IPH 261           | Patient-Centered Healthcare  | 3            |
|                 |                   | Total Credit Hours   | <b>16</b>    |
| Spring Semester |                   |  |              |
|                 | IPH 263           | Principles of Diagnostic Procedures  | 2            |
|                 | IPH 265           | Statistics and Clinical Research Methods   | 3            |
|                 | IPH 264           | Legal & Ethical Issues for Healthcare Professionals                                      | 2            |
|                 | IPH 266           | Human Genetics as the Basis of Disease   | 3            |
|                 | IPH 267           | Foundations of Pharmacology and Pathophysiology  | 3            |
|                 | IPH 268           | Applied Anatomy through Imaging Modalities   | 3            |
|                 |                   | Total Credit Hours   | <b>16</b>    |

\*With the exception of IPH 240, Spanish for Medical Professionals, and HUS 275, Human Services Practicum, the new 200-level IPH courses are transferable as 300-level courses at UMB, for inclusion in their BSHS curriculum. Nancy Beier, AACC's registrar, approved the above course numbers.

Course numbering rationale at AACC: 100 = foundational courses, 200 and above = courses with prerequisites and/or high level course content, 260-279 = used for seminars, capstones, practicums, internships, and 280-299 = special topics. DO NOT use 280-299 as these will need to be used for remediation within the IPH certificate program.

### Course Descriptions: Professional Certificate in Health Sciences

SPA 240 Spanish for Medical Professionals 3 credit hours

Addresses the translation/communication needs of medical professionals with little or no experience with Spanish. Develop communication proficiency and accuracy in the use of the Spanish language in medical settings with Spanish speaking patients. Learn pertinent information about Hispanic cultures while participating in language tasks through listening, reading, writing, and conversation. Participants should be able to comprehend a medical history in Spanish by being able to elicit pertinent medical information in simple terms.

Prerequisites: MDA 100 BIO 233, HEA 150, BIO 234

HUS 275 Human Services Practicum 3 credit hours

This course must be taken in the same semester as IPH 342 Patient-Centered Healthcare. Earn credit for human services-related work. Develop specific learning objectives and explore healthcare professions career goals. Approved by the office of Education and Training for Addictions Services (OETAS).

Prerequisites: HUS 101 or permission from department chair

IPH/MLT 262 Clinical Hematology and Microbiology 4 credit hours

From a health practitioner's perspective, demonstrate understanding of the laboratory tests used to assess hemostatic, and hematopoietic pathogenic disease states and conditions. Identify white blood cell morphology in healthy states and blood dyscrasias. Demonstrate



knowledge of appropriate microbiological tests used to identify the characteristics of isolation and identification of pathogenic bacteria. Develop familiarity with virology, parasitology, and mycology and their associated laboratory assays. This course prepares students seeking a graduate degree as a healthcare provider (physicians, physician assistants, pathology assistant, etc.) with a basic background of hematology and clinical microbiology laboratory tests. Lab fee \$200.

Prerequisites: CHE 112 or CHE 113, BIO 223, BIO 233, BIO 234

IPH 260 Behavioral Health 3 credit hours

Examine current research and principles and theories of human growth and development while emphasizing terminology, classification, etiology, assessment, and treatment modalities of major disorders. Distinguish between normal and abnormal behavioral patterns. Provides an overview of the development of thinking, language, personality, motor behavior, and social behavior throughout the life span.

Prerequisites: MDA 100, PSY 111

IPH 261 Patient-Centered Healthcare 3 credit hours

This course must be taken in the same semester as HUS 275 Human Services Practicum. Explore healthcare delivery from a patient-centered perspective. Learn to account for social, ethnic, and religious sensitivities in the development, evaluation, and implementation of therapeutic goals. Strategies for patient education, counseling, and preventive measures will be weighed with regard to the areas of diversity and healthcare delivery to these populations. Issues include the recognition of boundaries in personal relations within the workplace and balancing role fidelity with personal integrity and cultural humility. This course includes the completion of volunteer service/participation hours in community service at underserved medical clinics and treatment facilities under direction of faculty clinicians and licensed human services professionals.

Prerequisites: MDA 100 PSYm111 Corequisites: HUS 275, IPH 240

IPH/MLT 263 Principles of Diagnostic Procedures 2 credit hours

From a health practitioner's perspective, demonstrate understanding of the principles of diagnostic procedures used to assess patient disease states and disorders. Areas to be covered include regulatory aspects of healthcare; phlebotomy, clinical laboratory procedures in the blood bank, hematology, chemistry, cytogenetics, microbiology, and molecular laboratories; electrocardiograms interpretation; and general health and/or trauma exams. This course prepares students seeking a graduate degree as a health care

provider (physicians, physician assistants, pathology assistant, etc.) with a basic background of the diagnostic procedures utilized by health care providers. Lab fee 200\$

Prerequisites: IPH 262

IPH 265 Introduction to Statistics and Clinical Research Methods 3 credit hours

Use meaningful data to explore concepts in probability and statistics including measures of central tendency and dispersion. Develop statistical literacy by studying graphical representations of data, discrete and continuous probability distributions, and sampling techniques and theory. Construct and interpret confidence intervals, find lines of best-fit, and perform hypothesis tests for means, proportions, and independence. Emphasis will be placed on the use, appropriateness, and understanding of common biostatistics methods and epidemiologic approaches employed by healthcare professions as a basis for clinical judgement. Empirical data regarding medicine and patient care, as well as those used in the surveillance and investigation of health-related states of events will be explored. Technology use is required throughout the course for statistical analyses.

Prerequisites: MAT 151

IPH 264 Legal-Ethics for Healthcare Professionals 2 credit hours

Learn the legal and ethical responsibilities of the healthcare worker, including laws, regulations, and industry standards. Explore the principles of moral, bioethical and health etiquette as they apply to current health care delivery, such as stem cell research, refusal of treatment, living wills and right to die issues. Study law related to death, dying and organ transplantation. Focus on the legal definition of death; competency; decision making regarding life-sustaining treatment; suicide; self-determination and procurement and allocation of organs.

Prerequisites: HUS 275, IPH 260, IPH 261

IPH 266 Human Genetics as the Basis of Disease 3 credit hours

Designed to provide a basic understanding of the concepts of molecular genetics and inheritance as the foundation of human genetics and disease states, this course prepares healthcare professions participants for later recognition, application, and workup of dysmorphology in the context of human motor and cognitive development. Learn effective methods to discover a patient's genetic predisposition and increased risk for disease development.

Prerequisites: MDA 100, BIO 223, BIO 233, BIO 234, PSY 111

IPH 267 Foundations of Pharmacology and Pathophysiology  
hours

3 credit

Healthcare professions students will learn principles of multisystem function and dysfunction at the cellular and molecular levels, specifically as they relate to homeostatic function. Attention will be given to physiologic changes that occur as a result of disease processes, the clinical manifestations indicative of altered health states, and the basis of drug therapies used to treat or affect these conditions. This course integrates anatomy, chemistry, microbiology, and physiology with introductory pharmacology, while focusing on their specific applications to clinical practice.

Prerequisites: BIO 223, BIO 233, BIO 234, CHEM 112 or CHE 113

IPH 268 Applied Anatomy through Imaging Modalities  
hours

3 credit

This course will broaden the healthcare student's knowledge of human anatomy through visual application using various imaging modalities. Body system functions, interactions, and locations of specific structures will be explored in depth by way of plain film, CT, MRI, sonography, nuclear medicine, and angiography studies. Emphasis will be placed on anatomic structure location and organ system function as related to a patient's past and current medical history with physical examination findings as the basis in providing sound clinical decision making.

Prerequisites: BIO 223, BIO 234, IPH/MLT 310

#### **Year 4**

Enter the MSHS PA-Concentration courses, successfully complete all courses with a B or higher and earn a program GPA of 3.0.

#### **Year 5**

Complete all MSHS-PA course work, Clerkship courses, earn a cumulative program GPA of 3.0 or higher successfully complete the capstone and summative exam to graduate with a Bachelor of Science in Health Science/Master in Health Science –PA concentration.

**Appendix C: Budget**

| <b>TABLE 2: PROGRAM EXPENDITURES:</b> |               |               |               |               |               |
|---------------------------------------|---------------|---------------|---------------|---------------|---------------|
| <b>Expenditure Categories</b>         | <b>Year 1</b> | <b>Year 2</b> | <b>Year 3</b> | <b>Year 4</b> | <b>Year 5</b> |
| 1. Faculty (b + c below)              | \$1,574,400   | \$1,621,632   | \$1,758,964   | \$1,884,134   | \$1,959,499   |
| a. Number of FTE                      | 9.4           | 9.4           | 9.4           | 9.4           | 9.4           |
| b. Total Salary                       | \$1,230,000   | \$1,266,900   | \$1,393,590   | \$1,449,334   | \$1,507,307   |
| c. Total Benefits                     | \$344,400     | \$354,732     | \$365,374     | \$434,800     | \$452,192     |
| 2. Admin. Staff (b + c below)         | \$492,800     | \$507,584     | \$553,448     | \$575,586     | \$598,609     |
| a. Number of FTE                      | 6.5           | 6.5           | 6.5           | 6.5           | 6.5           |
| b. Total Salary                       | \$352,000     | \$362,560     | \$389,752     | \$405,342     | \$421,556     |
| c. Total Benefits                     | \$140,800     | \$145,024     | \$163,696     | \$170,244     | \$177,053     |
| 3. Support Staff (b + c below)        | \$350,000     | \$360,500     | \$393,074     | \$408,797     | \$425,149     |
| a. Number of FTE                      | 3             | 3             | 3             | 3             | 3             |
| b. Total Salary                       | \$250,000     | \$257,500     | \$276,813     | \$287,885     | \$299,400     |
| c. Total Benefits                     | \$100,000     | \$103,000     | \$116,261     | \$120,912     | \$125,748     |

|                                    |                    |                    |                    |                    |                    |
|------------------------------------|--------------------|--------------------|--------------------|--------------------|--------------------|
| 4. Technical Support and Equipment | \$150,000          | \$ 200,000         | \$ 250,000         | \$ 262,500         | \$ 275,625         |
| 5. Library                         | \$50,000           | \$ 50,000          | \$ 52,000          | \$ 53,000          | \$ 54,000          |
| 6. New or Renovated Space          | \$250,000          | \$ 250,000         | \$ 250,000         | \$ 250,000         | \$ 250,000         |
| 7. Other Expenses                  | \$250,000          | \$ 300,000         | \$ 350,000         | \$ 375,000         | \$ 400,000         |
| <b>TOTAL (Add 1 – 7)</b>           | <b>\$3,117,200</b> | <b>\$3,289,716</b> | <b>\$3,607,486</b> | <b>\$3,809,016</b> | <b>\$3,962,882</b> |

**TABLE 1: PROGRAM RESOURCES**

| <b>Resource Categories</b>           | <b>Year 1</b> | <b>Year 2</b> | <b>Year 3</b> | <b>Year 4</b> | <b>Year 5</b> |
|--------------------------------------|---------------|---------------|---------------|---------------|---------------|
| 1. Reallocated Funds                 | \$648,250     | \$ 0          | \$ 0          | \$ 0          | \$ 0          |
| 2. Tuition/Fee Revenue (c + g below) | \$2,318,950   | \$3,945,825   | \$ 3,953,520  | \$ 4,032,590  | \$ 4,113,242  |
| a. Number of F/T Students            | 38            | 76            | 76            | 76            | 76            |
| b. Annual Tuition/Fee Rate           | \$50,000      | \$ 51,000     | \$ 52,020     | \$ 53,060     | \$ 54,122     |
| c. Total F/T Revenue (a x b)         | \$1,900,000   | \$3,876,000   | \$3,953,520   | \$4,032,590   | \$4,113,242   |
| d. Number of P/T Students            | 35            | 35            | 0             | 0             | 0             |
| e. Credit Hour Rate                  | \$665         | \$665         | \$ 0          | \$ 0          | \$ 0          |
| f. Annual Credit Hour Rate           | 18            | 3             | 0             | 0             | 0             |
| g. Total P/T Revenue (d x e x f)     | \$418,950     | \$69,825      | \$ 0          | \$ 0          | \$ 0          |

|   |             |             |              |              |              |
|---|-------------|-------------|--------------|--------------|--------------|
| 3. Grants, Contracts & Other External Sources | \$150,000   | \$ 0        | \$ 0         | \$ 0         | \$ 0         |
| 4. Other Sources                              | \$ 0        | \$ 0        | \$ 0         | \$ 0         | \$ 0         |
| TOTAL (Add 1 – 4)                             | \$3,117,200 | \$3,945,825 | \$ 3,953,520 | \$ 4,032,590 | \$ 4,113,242 |

Budget narrative: Year one and two of the program include revenues and expenses projected for the entire BS/MS program and revenue to be sponsored by UMB while teaching out existing cohorts of students under the current MOU with Anne Arundel Community College. External resources and reallocated funds will be used to support the transition as identified in program resources column 1. Graduate School Fund Balance (\$648,250) will be allocated to support the deficit in the first year of the program. It is expected that tuition starting in Year 2 will cover the costs of the program. Additionally, the Graduate School will contract with Anne Arundel Community College (\$150,000) to provide instruction and program administration for the remaining cohort of AACC students that will graduate in the summer of 2021.

<sup>1</sup> 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.

<sup>2</sup> 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.

<sup>3</sup> 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.