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January 23, 2019

James D. Fielder, Jr., Ph.D.  
Secretary of Higher Education  
Maryland Higher Education Commission  
Nancy S. Grasmick Building, 10th floor  
6 North Liberty St., Baltimore, MD 21201

Dear Secretary Fielder:

The University of Maryland School of Dentistry is seeking authorization to offer a Post-Baccalaureate Certificate (PBC) in Oral Health Sciences program.

This stackable Certificate program will satisfy the core content of a Master's in Oral Health Sciences program that currently is in development, should the student decide to prepare to be a leader in or to pursue innovation in healthcare delivery.

The School has made a payment of \$850 to MHEC for this review through R\*STARS. The Journal Entry number for the transaction is JE312580.

We appreciate your consideration of this request. If you have any questions, please contact me at 410-706-2304 or [bjarrell@umaryland.edu](mailto:bjarrell@umaryland.edu).

Sincerely,

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

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



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

Institution Submitting Proposal University of Maryland, Baltimore

Each action below requires a separate proposal and cover sheet.

- Radio button options for program types: New Academic Program, New Area of Concentration, New Degree Level Approval, New Stand-Alone Certificate, Off Campus Program, Substantial Change to a Degree Program, Substantial Change to an Area of Concentration, Substantial Change to a Certificate Program, Cooperative Degree Program, Offer Program at Regional Higher Education Center.

Payment Submitted: Yes/No, R\*STARS Type: Check, Payment Amount: \$850.00, Date Submitted: 03/01/2019

Table with program details: Department Proposing Program (School of Dentistry), Degree Level and Degree Type (Post-Baccalaureate Certificate), Title of Proposed Program (Post-Baccalaureate Certificate in Oral Health Sciences), Total Number of Credits (12), Suggested Codes (HEGIS, CIP: 51.0599), Program Modality (Both), Program Resources (Requiring New Resources), Projected Implementation Date (Fall, Year: 2020), Provide Link to Most Recent Academic Catalog (URL: http://dental-umaryland.smartcatalogiq.com/en/2018-2019/Catalog)

Preferred Contact for this Proposal: Name: Dr. Mary Beth Aichelmann-Reidy, Title: Associate Director, Postgraduate Periodontics Program, Phone: (410) 706-7153, Email: mreidy@umaryland.edu

President/Chief Executive: Type Name: Bruce E. Jarrell, MD, FACS, Executive Vice President and Provost, Signature: Bruce E Jarrell, Date: 01/23/2019

Date of Approval/Endorsement by Governing Board:

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**New Academic Program Proposal Prepared for the  
Maryland Higher Education Commission:  
Post-Baccalaureate Certification in Oral Health Science Program  
UNIVERSITY OF MARYLAND SCHOOL OF DENTISTRY**

**A. CENTRALITY TO INSTITUTIONAL MISSION STATEMENT AND PLANNING  
PRIORITIES**

Oral health is a vital component of overall health. Mounting evidence documents the adverse impact of oral infection on systemic health and patient healthcare outcomes. Nevertheless, dental caries (tooth decay) remains the most prevalent chronic disease in both children and adults, and chronic destructive periodontitis (gum disease) afflicts nearly 50% of all adults in the United States. With growing recognition that chronic oral infection contributes substantially to poor systemic health and to inferior patient healthcare outcomes, interprofessional healthcare teams are increasingly seeking knowledge in the oral health sciences, as reflected in the burgeoning number of formal courses offered at professional meetings across multiple fields of healthcare.

Interprofessional expertise, communication and team support of overall healthcare management will need to recognize the impact of oral health, and the necessity for oral health evaluation and intervention in order to achieve improved overall health outcomes. The University of Maryland School of Dentistry (UMSOD) is uniquely suited to train and educate healthcare professionals on the intricacies of oral health to overall patient care. Moving forward, an understanding of oral maxillofacial diseases and lesions is essential to the clinical application and guidance of optimal healthcare. And, given our extensive and proven portfolio of coursework and expertise in the oral health sciences, UMSOD can fill this need while striving towards our purpose of advancing oral health and improving lives.

The proposed post-baccalaureate Certificate in Oral Health Science program has been designed to meet the need of a regional and national oral healthcare gap. Under this novel integrative program, UMSOD will target and educate non-dental healthcare professionals - including nurses, physicians, physical therapists, occupational therapists, and speech pathologists throughout the state and the country. Through this innovative program, these non-dental healthcare professionals will gain applicable oral health knowledge and skills yielding enhanced patient care outcomes. The post-baccalaureate program is designed to prepare healthcare professionals for administration and patient care leadership roles in an emerging healthcare environment that places an increasing emphasis on the role of oral health's impact on general health.

This program builds core oral health competencies that will enable non-dental health professionals to better respond to patients' needs and more holistically manage patient care. Through the four-course, 12-credit curriculum, participants will garner the knowledge to recognize both chronic and acute oral conditions and diseases. More importantly, enrollees will gain an understanding of the impact of oral disease on healthcare delivery and the overall well-being and health of patients. Established evidence-based therapeutic, preventive protocols for the

promotion of oral healthcare delivery will be presented for assimilation within other healthcare communities. This graduate program will promote knowledge and expertise, as well as provide participants with communication and management tools needed within the integrative scope of interprofessional healthcare.

Course content will be delivered in an online hybrid format allowing for inclusion of simulation and observational experiences based at UMSOD and Universities at Shady Grove (USG). This is a stackable post-baccalaureate certificate program that satisfies the core content of the pending Master in Oral Health Sciences. UMSOD continues to design and develop the Master's program to further fulfill the need to prepare students to be leaders in and pursue innovation in healthcare delivery and outcomes; the stackable post-baccalaureate certificate in oral health is a stepping stone to the forthcoming submission of a new academic program proposal for the Master of Oral Health Sciences.

The Certificate in Oral Health Science program will join already-existing graduate programs offered by UMSOD and two sister schools of the University of Maryland, Baltimore (UMB): the University of Maryland School of Nursing (UMSON) and the University of Maryland School of Pharmacy (UMSOP). As a UMB school, the UMSOD adheres strongly to, and emphasizes the value inherent in, the university's mission, which is:

To improve the human condition and serve the public good of Maryland and society at-large through education, research, clinical care, and service.

The proposed program will further that mission, providing not only a first-of-its-kind oral health science degree program for non-dental health professionals to further oral health education, but a clinical component that will support the dental professionals' service to the underserved Shady Grove region. Along with the proposed CDHL program at Shady Grove, the post-baccalaureate certificate program is forward-thinking and progressive, facilitating UMSOD and USG on the cusp of a major transition in oral health delivery and medicine.

To our knowledge, UMSOD's proposed post-baccalaureate Certificate in Oral Health Science program will be the only one in the country that combines clinical and didactic oral health science expertise for non-dental healthcare professionals. Capitalizing on the resources at UMSOD, the first dental college in the world, top oral health experts will provide students with exemplary educational experiences that are clinically applicable to their healthcare profession.

UMSOD's Certificate in Oral Health Science is an innovative and accessible program exemplifying the School of Dentistry's commitment to this mission.

*Education:* An increasing body of evidence demonstrates that when healthcare professionals from different disciplines work collaboratively, as teams, the overall quality of patient care improves, along with patient quality of life. The proposed program will facilitate an understanding of the importance and impact of co-managing care and will

impart the knowledge and skills necessary for effective interprofessional communication and collaboration.

*Clinical Care:* Patients today often present with multiple and complex health needs that require intervention from multiple health disciplines. Meanwhile, there is also an increasing recognition of the adverse impact of oral infection on systemic health and healthcare outcomes. Therefore, improving skills, communication and coordination of health professionals in diverse domains can result in higher levels of clinical care. With a course curriculum that focuses on chronic and acute oral conditions and diseases, oral disease prevention and health promotion, participants will gain a fundamental understanding of the acute and chronic oral health conditions that interplay with systemic health and build competencies in the care and management of oral and dental disease for optimal patient care.

*Research:* The proposed program provides fertile ground for collaborative, interprofessional research; the prime location of USG further supports the opportunity. UMSOD strives to expand our interprofessional research on improved healthcare delivery and outcomes through further integration of oral health science expertise.

*Service:* Health inequities and disparities often limit access to care, particularly among vulnerable populations, and a lack of attention to on-going oral healthcare needs often leads to complex oral health conditions with critical impact on systemic health interventions. UMSOD's Certificate in Oral Health Science program will help build awareness and bring greater sensitivity to the unique need for healthcare integration among vulnerable populations as well as foster a shared collaborative imperative among healthcare professionals from different disciplines.

The Certificate in Oral Health Science program also aligns with UMB's 2017-2021 Strategic Plan, which articulates six key tenets that are mirrored in the proposed.

*Health, Justice and Social Impact:* UMSOD's proposed Certificate in Oral Health Science program will add to the School's enduring legacy of service to those who have been historically underserved. One example of this includes UMSOD's participation, since 2016, with the Mission of Mercy (MOM), which has served nearly 2,000 dentally underserved residents statewide through volunteerism and the donation of such critical services as extractions, restorations and cleanings. Through philanthropic efforts, the School also has instituted oral health programs that 1) help survivors of domestic violence re-enter the workforce and care for their families and 2) give survivors of human trafficking the confidence to regain control over their lives. Similarly, the proposed Certificate in Oral Health Science program advances these initiatives through the establishment of a competent and empowered cadre of interprofessional healthcare providers poised to broaden access to integrated healthcare and improve overall health outcomes to those who need it most.

*Research and Scholarship:* Graduates of the Oral Health Science Certificate program will be positioned to provide essential insights into research aimed at the identification and development of innovative strategies for improving oral and systemic health outcomes.

*Student Success:* A primary objective of the proposed program is to prepare participants for leadership roles – whether at the direct patient care level or in administrative functions – in the new integrated healthcare delivery paradigm. The course’s leadership and faculty have been selected, based not only on their subject matter expertise, but on documented teaching strengths as well as those who stand out in inspiring high levels of student performance and success.

*Inclusive Excellence:* Not unlike students enrolled in other UMSOD programs, Certificate in Oral Health Science students will be instrumental to the broader interprofessional environment. Participants will follow the Interprofessional Educational Collaborative (IPEC) guideline, which focuses on continuous development of interprofessional competencies by health professionals as part of the learning process (<https://www.ipeccollaborative.org>)<sup>1</sup> The guidelines are related to four key domains:

1. Values and ethics;
2. Respect for roles and responsibilities;
3. Communication across professions; and
4. Teamwork for effective interprofessional practice.

Moreover, the entire UMB community has embraced and holds itself accountable to a set of core values, which includes commitment to a culture that is enriched by diversity and inclusion in the broadest sense.

*Efficiency, Effectiveness and Assessment:* UMSOD’s Certificate in Oral Health Science program is expressly designed to maximize the effectiveness of healthcare professionals by leveraging the resources of the entire UMB operation and drawing upon its cutting-edge professional education, its commitment to translational research, clinical care and service.

*Partnership and Collaboration:* The cornerstone of UMSOD’s Certificate in Oral Health Science program is building effective, mutually-rewarding partnerships and collaborations among multidisciplinary providers that leads to improved patient outcomes. This, fundamentally, is the measure of the program’s success.

## **B. CRITICAL AND COMPELLING REGIONAL OR STATEWIDE NEED AS IDENTIFIED IN THE STATE PLAN**

Current research has further intertwined the association and demonstrated links between oral and systemic health. The research suggests that multidisciplinary health professionals working collaboratively, as teams, enhances provider effectiveness and promotes comprehensive, patient-centered care. The widespread adoption of the integrated model of health delivery will result in a growing demand for skilled healthcare professionals with interdisciplinary skills and knowledge. Failure to prepare for this trend could result in shortages in interprofessional expertise and adversely impact patient care outcomes. Furthermore, due to oral disease and conditions having significant socio-economic impact in regard to healthcare costs, as well as individual's daily life and self-esteem, it is critical to incorporate oral health into the general health agenda to yield optimal overall health and well-being. In order to close the identified gap between the management of oral and systemic health, a long-term and sustainable oral health strategy is necessary to focus on health promotion and disease prevention by controlling common modifiable risk factors<sup>2</sup>.

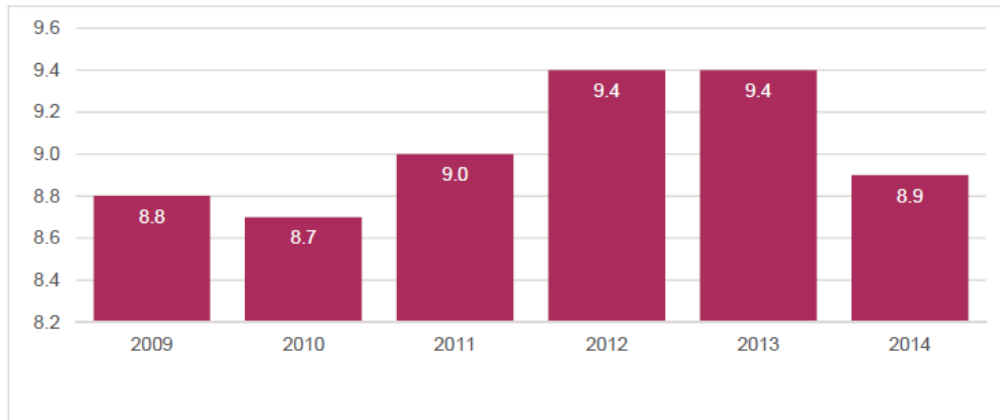
The Certificate in Oral Health Science program responds directly to the need for a workforce pipeline that can meet the growing regional and statewide need for integrated, interprofessional health delivery. It's four-course curriculum addresses the fundamental knowledge needed by non-dental health professionals to ascertain oral health assessments for their patients and to effectively coordinate and manage patient care.

For example, in 2015, over 40,000 emergency department (ED) visits for oral complaints were reported in Maryland. Figures 1 and 2 provide further information on the prevalence of oral health concerns in the state's emergency departments<sup>3</sup>. Unfortunately, many Marylanders still lack access to oral health care and experience preventable oral disease. Graduates of the Certificate in Oral Health Science program will strive to serve this need through the following, but not limited to: (a) assessment of oral health promotion in a hospital setting, (b) recognition of the impact of oral health; (c) identification of the necessity for oral health evaluation and intervention to achieve improved overall health outcomes; and (d) dissemination of relevant information to colleagues in medicine, administration, and beyond.

Furthermore, the nation's aging population will present new challenges and increased demand for oral health support. Senior citizens will comprise a fifth of the U.S. population by 2030; already, 1.3 million Americans reside in long-term care facilities for the elderly. As the Institute on Aging notes, "[c]hronic

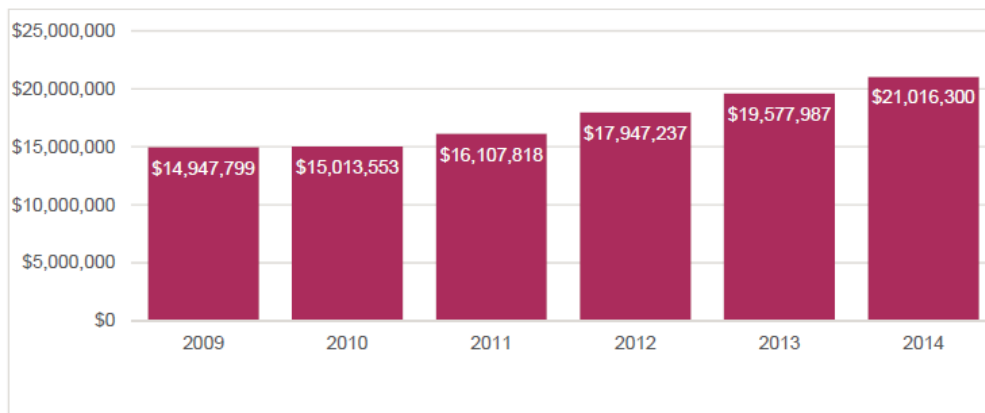


**Figure 1:** Total Outpatient Dental Emergency Department Visits per 1,000 Individuals in Maryland, Fiscal Years 2009-2014



Source: Maryland Health Services Cost Review Commission Hospital Data.

**Figure 2:** Total Dental Expenditures for Outpatient Emergency Department Visits in Maryland, Fiscal Years 2009-2014



Source: Maryland Health Services Cost Review Commission Hospital Data. Notes: Total charges were adjusted to 2014 dollars using the GDP deflator.

illness has replaced acute illness as the major health problem of older adults — and increasingly so as medicine evolves.”<sup>4</sup> A grayer United States will need healthcare professional with oral health expertise to tackle the unique issues and conditions of these growing communities and the plurality of chronic disease.

The proposed certificate program is aligned with the Maryland State Plan for Postsecondary Education 2017-2021 by supporting many principles, such as “access,” “success,” and “innovation.”<sup>5</sup> Graduates will support Maryland’s professional and technical workers (27.2 percent), already the second-highest among all states. Our proposed program adheres to the principles of public higher education in Maryland, accepting credits from all of Maryland’s accredited institutions and thus fostering and valuing diversity. The program’s administrators will also reach out to other schools within the University System of Maryland (USM) in order to prioritize diversity within the program.

In summation, UMSOD has an opportunity to bridge the gap between regional and statewide present and future demand through pioneering the Certificate in Oral Health Science program. UMSOD’s established credibility in providing pre-eminent education, patient care, research, public service, and global engagement, results in our graduates possessing the elevated knowledge, skills, and abilities to close regional and statewide gaps.

### **C. QUANTIFIABLE AND RELIABLE EVIDENCE AND DOCUMENTATION OF MARKET SUPPLY AND DEMAND IN THE REGION AND STATE**

We are dedicated to the development of our healthcare workforce, which will serve growing regional, national, and global needs. The intend of the Certificate in Oral Health Science program is to provide a workforce that supports the identified needs through comprehensive high-level care, leadership roles that shape comprehensive healthcare delivery and policy, and professionally accountable healthcare leaders that can educate and collaborate with other health professionals.

UMSOD reached out to three Directors of Nursing at the University of Maryland Medical Center in order to demonstrate market demand and the UMSOD’s unique suitability to answer such demand. The Director of Nursing in the Greenebaum Comprehensive Cancer Center, Director of Nursing in Surgical & Cardiac Surgical Services, and the Director of Nursing in Women’s and Children’s Health were asked to disseminate a survey to their staff. The survey participants of primarily (95%) Clinical Nurses acknowledged that oral health assessments are not always provided to patients and some are uncomfortable with the training and education they have received in this area: Only 42% answered that they always or very frequently provide oral health assessments to patients, while only 23% answered that they feel somewhat uncomfortable or very uncomfortable in the training and education received in oral healthcare. Moreover, the majority of survey participants believe that their recognition of oral and dental diseases will enable them to provide better patient care and management (73% agreed somewhat or totally

agreed) as well as enhance their ability to improve patient healthcare outcomes within their department (58% agreed somewhat or totally agreed).

More specifically to the proposed program, 25% of survey participants somewhat agreed or totally agreed that if an Oral Health Post-Baccalaureate Certificate program was offered by UMSOD, they would consider applying within the next three years. (For additional details on the survey, refer to Appendix C.) From this finding we can extrapolate that among the 80,000 nurses in the state of Maryland alone, nearly 20,000 would acknowledge a need for and interest in pursuing greater oral health knowledge and education. Five percent of the 4.2 million active nurses in the country would represent a market potential of 210,000 program participants.

Additional market research was conducted by the Educational Advisory Board (EAB) for the proposed UMSOD program. EAB strived to assess the market viability of the Certificate in Oral Health Science through quantitative data analytics, interviews with program administrators, and secondary research. The outcome of the market research produced results in: (1) Comparable Program Characteristics; and (2) Employer Demand Trends. (For additional details on the reports, refer to Appendix C.)

Within the EAB Comparable Program Characteristics report, prioritization of the development of a post-baccalaureate certificate is highlighted. The opportunity for a non-dental healthcare professional to acquire a post-baccalaureate certificate is attractive because of the relevance and access to oral health skills, as well as financial cost and quick time to completion. Furthermore, an online or hybrid format is recommended to meet the needs of working professionals or students already involved in other healthcare programs.

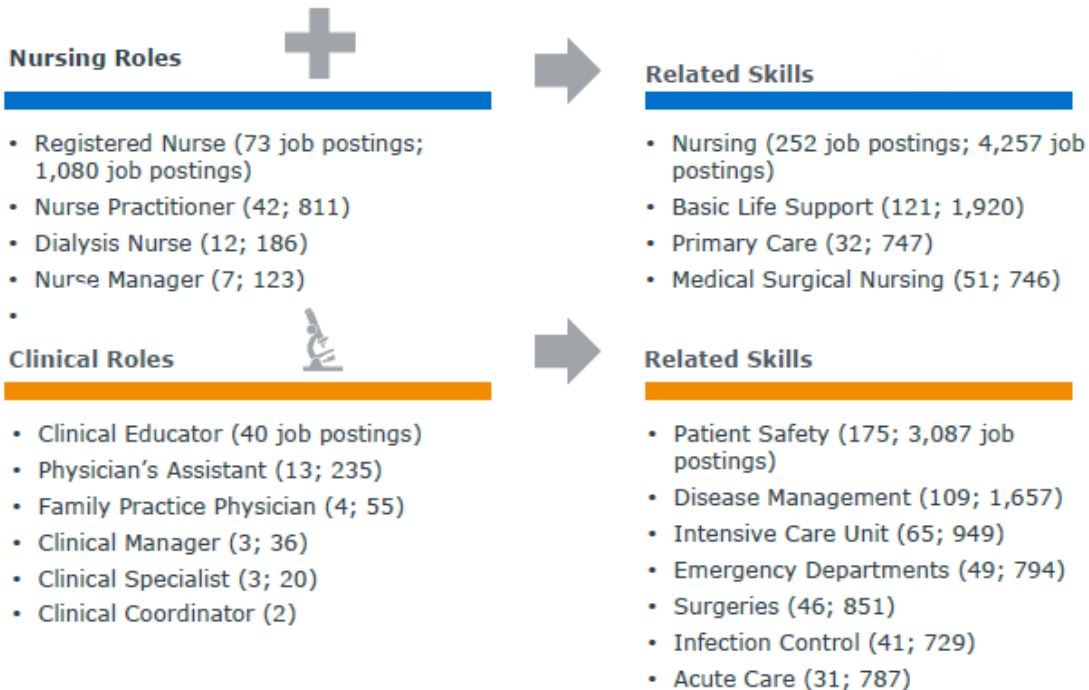
The EAB Employer Demand Trends report reinforced the regional and national employer demand for non-dental healthcare professionals with oral health expertise. From September 2016 to August 2018 the regional demand for non-dental healthcare professionals with oral health expertise increased by 70%. Similarly, the national demand for non-dental healthcare professionals with oral health expertise increased by 31% from September 2016 to August 2018. Furthermore, faster than average employment growth is projected for non-dental healthcare professionals with oral health expertise, including but not limited to: 'registered nurse' and 'nurse practitioner' employment increases 16% and 36%, respectively, nationally from 2017 to 2027. Figure 3 below summarizes both regional and national employer data on non-dental healthcare nursing and clinical professionals with oral health expertise and related skills.

FIGURE 3:

### Top Titles and Skills for Non-Dental Health Care Professionals with Oral Health Expertise

September 2017-August 2018, Regional and National Data<sup>13</sup>

n(regional)=2,308 job postings; n(national)=5,437 job postings



#### D. REASONABLENESS OF PROGRAM DUPLICATION

With respect to the proposed Certificate in Oral Health Science, there are no similar programs in the state or geographical area. UMSOD offers the only Doctor of Dental Surgery (DDS) in the state of Maryland; Postgraduate Dental certificate programs in Advanced Education in General Dentistry (AEGD), Endodontics, Oral and Maxillofacial Surgery, Orthodontics, Pediatric Dentistry, Periodontics, Prosthodontics and Oral and Maxillofacial Pathology; only Dental Hygiene Bachelor of Science in the state of Maryland and (recently proposed and pending approval) dual degree Clinical Dental Hygiene Leader program. Our progressive curriculum provides a higher level of learning and a broad perspective that produces tomorrow's leaders, motivators, and educators in the field of oral health. Given the established and credible programs in the oral health sciences, the UMSOD is uniquely suited to offer a post-baccalaureate certificate program to prepare healthcare and social support professionals for emerging leadership roles in a rapidly changing healthcare environment.

### **E. RELEVANCE TO HIGH-DEMAND PROGRAMS AT HISTORICALLY BLACK INSTITUTIONS (HBIS)**

There is no duplication of a similar program at any HBI.

### **F. RELEVANCE TO THE IDENTITY OF HISTORICALLY BLACK INSTITUTIONS (HBIS)**

There is no duplication of a similar program at any HBI.

### **G. ADEQUACY OF CURRICULUM DESIGN, PROGRAM MODALITY, AND RELATED LEARNING OUTCOMES**

#### **1. Describe how the proposed program was established, and also describe the faculty who will oversee the program.**

UMSOD's proposed Oral Health Science Program has been designed to meet the needs of non-dental healthcare professionals who wish to gain oral health expertise in order to better serve their unique patient populations. Curriculum content will fulfill a demonstrated need for the recognition and co-management of oral health concerns as influenced by and within other realms of healthcare delivery. Course content will be delivered in an online hybrid format that allows for inclusion of both simulation and observational experiences based at the University of Maryland School of Dentistry and the Universities at Shady Grove. This is a stackable certificate program that satisfies the core content of a Masters in Oral Health Sciences program should the participant decide to become a leader in or pursue and explore innovation in health care delivery.

Courses will be taught and led by experienced graduate faculty members and academicians who have excelled at teaching in traditional, continuing education and online formats. Table 1 provides the faculty course masters for the proposed program. They are all subject matter experts in their disciplines and experienced in the delivery of educational content in multiple platforms in graduate and dental education.

Faculty represent UMSOD's departments of Advanced Oral Sciences and Therapeutics, Dental Public Health, Oncology and Diagnostic Sciences and Pediatrics.

Table 1. Certificate in Oral Health Science Program Design

**Faculty Resources**  
**Program Director, Mary Beth Aichelmann-Reidy**

Course Title	Course Master
<b>Oral Infection and Disease: Foundations for Recognition</b>	John Brooks
<b>Contemporary Oral Therapeutics in Oral Medicine and Dentistry</b>	John Brooks
<b>Complex Interplay: The Relationship between Oral Health and Systemic Disease</b>	Harlan Shiau
<b>Prevention and Oral Health Promotion</b>	Mark Macek

*All courses are 3 credit hours.*

**2. Describe educational objectives and learning outcomes appropriate to the rigor, breadth, and (modality) of the program.**

UMSOD's Certificate in Oral Health Science Program will be a post-baccalaureate program for non-dental healthcare professionals who seek greater expertise in oral health as well as becoming a team player in the scope of its management. Participants will garner the knowledge to recognize both chronic and acute oral conditions and diseases. More importantly, enrollees will gain an understanding of the impact of oral disease on healthcare delivery and the overall well-being and health of patients. Established evidence-based therapeutic, preventive protocols for the promotion of oral health care delivery will be presented for assimilation within other healthcare communities. This graduate program will promote knowledge and expertise and provide these trained professionals with the tools needed for better communication and collaboration as integrated teams as well as improved patient care outcomes through the co-management of care within the scope of interprofessional health care.

UMSOD's Certificate in Oral Health Science Program objectives align with attainment of foundational knowledge of oral health and its management. More specifically, each participant will be able to:

- Recognize normal anatomic structures of the oral and maxillofacial region and distinguish and identify common oral lesions and disease.
- Identify oral anatomy and the dental terminology to define and describe the oral cavity, including soft and hard tissues.

- Describe common dental restorative materials, their utilization and prostheses for tooth, oral hard and soft tissue replacement.
- Identify the etiology and pathophysiologic mechanisms implicated in diseases of the oral and maxillofacial area.
- Review the clinical measures and available technologies to establish a working diagnosis of various pathologic processes.
- Discuss clinical methods employed for the management of common diseases and pathologic disorders within the oral and maxillofacial region.
- Discuss methods for treatment of infection, disease, and pathology, and pain management of diseases and pathology of the oral and maxillofacial region.
- Discern possible adverse events or outcomes that may occur with the reviewed therapeutic regimens and treatment.
- Identify intraoral clinical presentations that may be manifestations of underlying systemic disease.
- Describe biologic pathways, including inflammation, in which oral disease has the potential to influence the course of systemic disease or conditions.
- Utilize the evidence and strength of literature which describes the association and mechanism of the relationship between oral conditions and: diabetes, cardiovascular disease, preterm/low-birth weight pregnancy, respiratory conditions, rheumatoid arthritis, and cancer.
- Describe the factors that support access to and utilization of oral healthcare services
- Discuss private and public sources of oral healthcare financing
- Describe current and emerging workforce models of oral healthcare
- Knowledge of how to conduct a comprehensive examination of the head and neck region
- Discuss the epidemiology of common oral diseases and conditions
- Describe the principles of oral disease prevention and health promotion
- Learn how to manage the oral healthcare needs of patients in acute- and long-term care
- Discuss interdisciplinary care models
- Introduce common oral hygiene aides and over-the-counter therapeutics

The intended learning outcomes of UMSOD's Oral Health Science Certification Program:

- Participants will be able to recognize and describe common pathology and diseases of the oral and maxillofacial region
- Students will be knowledgeable of the etiopathologic pathways that promote various diseases of the oral and maxillofacial area

- Students will be able to assess, triage needs and implement avenues of patient referral for appropriate care
- Students will be familiar with the range of therapeutic options for pathologies and anomalous conditions of the oral and maxillofacial area
- Students will be able to recognize adverse side-effects consequent to therapeutic management of orally-related disorders
- Students will be able to articulate their knowledge of common oral presentations that reflect potential underlying systemic disease
- Students will become familiar with and be able to describe the biologic mechanisms that govern oral-systemic interactions
- Students will be able to appraise new and developing scientific literature on the interrelationship between periodontitis and systemic disease or conditions.
- Students will acquire the knowledge and skills necessary to competently provide oral health education and supportive oral care to acute- and long-term care patients.
- Students will acquire the knowledge and skills necessary to interact with other members of the interdisciplinary healthcare team to ensure that the oral healthcare needs of patients are effectively managed.
- Students will acquire the knowledge and skills necessary to serve as a point of contact for healthcare professionals to learn more about oral health care in the medical care setting.

**3. Explain how the institution will:**

- a) provide for assessment of student achievement of learning outcomes in the program**
- b) document student achievement of learning outcomes in the program**

Learning outcomes are defined for each course and presented in detail in each course syllabi. The course grading schema, educational presentation format, and description of grading criteria are also clearly presented in each course syllabi. Course content, educational resources, learning activities, and assessment mechanisms are in alignment with course outcomes and provide a pathway for achieving competence in all components of the graduate curriculum. Exams, assignments, quizzes, projects, papers, written and oral presentations, clinical experiences, and other assessments contain clearly defined evaluation criteria and procedures. Courses are periodically reviewed by the Advanced Dental and Graduate Education (ADGE) Committee to assess for sufficient depth, scope, sequence of instruction, and quality to ensure achievement of the program's defined learning outcomes.

UMB has optimal educational resources at the campus level as well as within the individual professional schools to provide the best teaching and learning experiences possible and to enable the achievement of excellence in all of its programs. Courses are designed with learning outcomes that are appropriate to the rigor and depth of graduate coursework, and faculty



members strive for consistency, coherence, equivalency, and academic excellence among the courses offered in both traditional and online instructional formats. All courses assess student achievement of defined learning outcomes through regular and formal educational assessments. Student achievement of learning outcomes is documented in Blackboard, the course management system used at UMB. Students have access 24/7 to individual course assessment grades, grading rubrics, and course information.

A systematic review of curriculum also occurs on an ongoing basis at UMSOD by the ADGE committee, which is comprised of dental post graduate faculty, student representatives, and administrators at the school. Additionally, confidential student feedback is obtained by UMSOD's Office of Instructional Evaluation near the end of each semester and provided by the Director of Instructional Evaluation to the Department of Advanced Oral Sciences and Therapeutics' chair, Program Director, relevant faculty and the associate dean for academic affairs.

**4. Provide a list of courses with title, semester credit hours and course descriptions, along with a description of program requirements.**

*Oral Infection and Disease: Foundations for Recognition – 3 credits*

This course will provide translational knowledge of the anatomic features of the oral and maxillofacial complex in health and disease. Proficiency in identification and recognition of normal oral structures and common anatomic variations, as well as recognition of abnormal findings will be garnered. The histology and function of oral and maxillofacial features will be described and related to more common pathological lesions within this region. The student will learn the identification of the risk factors and etiologies of oral hard and soft tissue diseases and disorders, dental caries, periodontal disease, infection, and common syndromes. The relevant clinical measures and current technologies available to attain diagnosis of these processes will be described and reviewed, providing participants with the applicable direction for patient referral. Case-based resources, observational, and hands-on experiences will provide the student opportunity for assimilation and skill development for performance of intraoral and extraoral examinations structures of the head and neck.

*Contemporary Oral Therapeutics in Oral Medicine and Dentistry– 3 credits*

This course describes current evidenced-based therapeutic modalities of clinical care implemented for a range of the more common pathologic disorders (benign and malignant tumors; developmental and reactive lesions; infectious processes, particularly involving the human papillomavirus; medically-induced disease, such as graft-versus-host disease, oral mucositis, osteonecrosis and osteoradionecrosis; anomalous formations; and syndromes within the oral and maxillofacial region.) Management of oral health and disease and the impact on patient health care outcomes will also be described. The use, rationale, and mechanisms of action of established pharmacologic agents, chemotherapeutics, surgical procedures, radiotherapy, laser surgery, immunotherapy, and lymphoedema therapy in the management of

oral conditions and-disease will be presented.

*Complex Interplay: The Relationship between Oral Health and Systemic Disease*– 3 credits

The course will explore the interrelationship of oral and systemic diseases and the impact they have on one another. Emphasis is on the manifestation of systemic disorders revealed upon basic examination of the oral cavity. Such findings would be indicative of or at least warrant proper referral and management of an underlying systemic condition. A second core component of the complex interplay between oral and systemic health is the appreciation of periodontitis and its associations with systemic conditions. The prevailing precept of periodontal-systemic interactions is the notion that periodontal inflammation and the periodontal microbiome add to the overall liability of systemic inflammation that would influence incidence, severity and progression of chronic inflammatory diseases or conditions. Recent advances in scientific methodology and experimental studies that contribute to our understanding of oral-systemic interrelationships will be reviewed.

*Prevention and Oral Health Promotion (Epidemiology)* – 3 credits

This course introduces the student to the foundational knowledge and skills necessary to support oral healthcare in acute- and long-term care settings. Characteristics of the oral healthcare system in the United States, including financing, workforce models, and access, are discussed. A variety of therapeutic options, including over-the-counter medications and oral hygiene aides, are also introduced. This course focuses on disease prevention and health promotion principles that are particularly suited to nursing care, community health centers and interdisciplinary approaches to providing oral healthcare to patients with a variety of health conditions across the lifespan. The student will learn how to guide the management of oral health in the context of overall health to improve patient healthcare delivery and outcomes.

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

Participants will have completed general education requirements prior to entering this post-baccalaureate certificate program. Enrollees are admitted after completion of a baccalaureate degree in another health-related or health management field. The program is designed primarily for nurses but other non-dental healthcare professionals are encouraged to apply and their transcripts will be reviewed to ensure basic science coursework, including histology, anatomy, pathology, and pharmacology. Credential review and verification will occur as a part of the administrative process.

**6. Identify any specialized accreditation or graduate certification requirements for this program and its students.**

The University of Maryland, Baltimore (UMB) - which houses the University of Maryland School of Dentistry as well as other professional schools on the campus - is accredited by the Middle States Commission on Higher Education, the DOE-recognized regional accrediting body

for colleges and schools. The most recent reaffirmation of Middle States accreditation occurred on June 23, 2016.

**7. If contracting with another institution or non-collegiate organization, provide a copy of the written contract.**

N/A

**8. Provide assurance and any appropriate evidence that the proposed program will provide students with clear, complete, and timely information on the curriculum, course and degree requirements, nature of faculty/student interaction, assumptions about technology competence and skills, technical equipment requirements, learning management system, availability of academic support services and financial aid resources, and costs and payment policies.**

The UMSOD maintains active webpages informing students of admissions, program, and degree requirements; course and curriculum information; expectations and requirements regarding use of computers and educational technology applications to be used in the program; and updated policies that are linked to the Office of Academic Affairs, Office of Admissions, and the Department of Advanced Oral Sciences and Therapeutics. Faculty members work closely with the UMSOD's web moderator team and have a process in place for timely updates of web and orientation materials.

A new student orientation program conducted online using Blackboard, the UMSOD's course management system, and in-person delivery formats will convey timely information to incoming students before they begin the program. The orientation program conveys support services, educational technology, tuition and fees, student financial aid, UMSOD dress code and uniform, technical standards, and resources to students prior to the start of classes.

The orientation program is modeled after existing new-student programs for UMSOD students but includes Oral Health Science Certificate-specific program orientation information on curriculum, faculty and student communication and interaction, trainings on educational technology use, as well as mandatory UMSOD- and UMB-specific trainings on clinical technology and campus technology practices.

**9. Provide assurance and any appropriate evidence that advertising, recruiting, and admissions materials will clearly and accurately represent the proposed program and the services available.**

The UMB Cross-Functional Services Consortium, consisting of the UMB bursar, UMB registrar, the assistant vice president for university student financial assistance and enrollment services, and the assistant director of student enterprise applications, provides support and guidance for submitting new program materials encompassing student support services, including federal and state financial aid.

Upon program approval, UMSOD will focus on recruitment and admissions by advertising the new Certificate in Oral Health Science program on the UMSOD website; in print recruitment materials distributed to feeder institutions and academic advisers in USM institutions; and will advise prospective students about the start date for the program. Furthermore, UMSOD will adhere to UMB-approved mechanisms for recruitment and advertising, and comply with federal guidelines for program establishment enabling the awarding of financial aid.

## **H. ADEQUACY OF ARTICULATION**

The program's location at Shady Grove and UMSOD provides vast opportunities for state university partnerships. In addition to the UMSON and UMSOP programs at USG, the campus houses more than 80 undergraduate and graduate programs from the following state universities: Bowie State University; Salisbury University; Towson University; University of Baltimore; University of Maryland, Baltimore County; University of Maryland, College Park; University of Maryland Eastern Shore; and University of Maryland University College. The USG collaborative environment yields elevated options for students who have previously obtained a baccalaureate degree in another USG program, such as B.S. in Nursing (RN-to-BSN), B.S. in Nursing (Traditional Option), and Doctor of Nursing Practice, as well as providing a student pipeline.

Furthermore, this being primarily a distance education certificate program is a unique professional opportunity for current employed clinical healthcare professionals. As a humbled member of the University System of Maryland, UMSOD will facilitate partnerships and student pipelines with University of Maryland Medical System Member Hospitals: University of Maryland Medical System; University of Maryland Medical Center; UMMC Midtown Campus; UM Baltimore Washington Medical Center; UM Capital Region Health; UM Charles Regional Medical Center; UM Rehabilitation & Orthopedic Institute; UM St. Joseph Medical Center; UM Shore Regional Health; UM Upper Chesapeake Health; and Mt. Washington Pediatric Hospital.

## **I. ADEQUACY OF FACULTY RESOURCES**

Four highly-qualified full-time UMSOD faculty members will manage the curricular components of UMSOD's Certificate in Oral Health Science Program. One faculty member will serve as overall program director and three will serve as course directors. The backgrounds and qualifications of each are provided here for your reference.

### **Program Director**

#### **Mary Elizabeth Aichelmann-Reidy, DDS**

Rank: Clinical Associate Professor

Administrative Positions: Division Chief, Division of Periodontics; Director of Smiles for Success Donated Care; Director, Advanced Program in Periodontics for Internationally-Trained Dentists

Department: Advanced Oral Sciences and Therapeutics

Other:

- Certificate, Advanced Education in Periodontics
- Diplomate, American Board of Periodontology
- Diplomate, International Congress of Oral Implantologists
- Regular Faculty, Graduate School

A. Course Director for the Following Courses (directed in the last 5 years):

- PERI 538 Advanced Clinical Periodontics (8 credits)
- PERI 588B: Biological and Molecular Basis of Periodontology (3 credits)
- PERI 568A, 568C, 568E: Diagnosis, Prognosis, and Treatment Planning Seminars (4 credits)
- PERI 579A: Advanced Surgical Seminars (3 credits)
- PERI 579B: Periodontics-Orthodontics Seminar (Co-Course Director) (1 credit)
- PERI 578A, 578C, 578E: Periodontal Literature Review (1 credit)

B. Lecturer in the Following Courses (provided in the last 5 years):

- PERI 518: Introduction to Periodontics, Predoctoral Periodontics, 4 lecture hours
- PERI 528: Introduction to Periodontal Therapy, Predoctoral Periodontics, 4 lecture hours
- PERI 538: Advanced Clinical Periodontics, Predoctoral Periodontics, 12 hours
- PERI 548: Clinical Periodontics, Predoctoral Periodontics, 2 hours
- PERI 588B: Introduction to Periodontal Therapy and Molecular Biology, Post-graduate Periodontics, 12 hours

(Note, seminars are not included above as they involve guiding residents and not specific lectures)

C. Experiences with Distance and/or On-line Teaching (provided in the last 5 years):

- Quality Resource Guide: Periodontal Regeneration, 3rd edition, [www.metdental.com](http://www.metdental.com), 2017 (CE course)

### **Course Directors**

**John K. Brooks, DDS**

Rank: Clinical Professor

Department: Oncology and Diagnostic Sciences

Course Director for the Following Courses (directed in the last 5 years):

- Oral Infection and Disease: Foundations for Recognition (3 credits)
- Oral Therapeutics in Oral Medicine and Dentistry (3 credits)

Lecturer in the Following Courses (provided in the last 5 years):

- GPAT 512 General Pathology (16 hours)
- OPAT 528 Oral Pathology (20 hours)
- DPAT 613 Problems in Oral Pathology (2 hours)

Oral Pathology-Advanced Education in General Dentistry (2 hours)

**Harlan Shiau, DDS, DMed Sc**

Rank: Clinical Associate Professor

Department: Advanced Oral Sciences and Therapeutics

Other:

- Certificate, Advanced Education in Periodontics
- Diplomate, American Board of Periodontology
- Regular Faculty, Graduate School

Course Director for the Following Courses (directed in the last 5 years):

- PERI 518 Introduction to Periodontology
- PERI 538 Clinical Periodontology
- PERI 548 Clinical Periodontology
- PERI 578A-C-E Periodontal Literature Review
- PERI 588B Introduction to Periodontal Therapy: A Biological Basis
- PERI 568A-C-E Diagnosis, Prognosis, and Treatment Planning

Lecturer in the Following Courses (provided in the last 5 years):

- PERI 518 Introduction to Periodontology
- PERI 528 Clinical Periodontology
- PERI 538 Clinical Periodontology
- PERI 548 Clinical Periodontology
- PERI 578A-C-E Periodontal Literature Review
- PERI 588B Introduction to Periodontal Therapy: A Biological Basis
- PERI 568A-C-E Diagnosis, Prognosis, and Treatment Planning
- MICP 522 Infectious Diseases
- TXPL 528 Treatment Planning
- PERI 587B Implant Literature Seminar

Experiences with Distance and/or On-line Teaching (provided in the last 5 years):

- Converted traditional course format of Periodontics 518 to a hybrid instructional format that utilized an increasing amount of asynchronous, online learning content. Several physical lectures utilized interactive polling and audience responses to reinforce learning

objectives. The course also employed the use of discussion boards to achieve course learning objectives.

**Mark D. Macek, DDS, DrPH**

Rank: Professor

Administrative Positions: Director, Office of Instructional Evaluation; Director, DDS-MPH Combined Degree Training Program

Department: Dental Public Health

Other:

- Diplomate, American Board of Dental Public Health
- Certificate, Dental General Practice Residency
- Associate Faculty, Graduate School

Course Director for the Following Courses (directed in the last 5 years):

- DHYG 416: principles of Scientific Evidence (Co-Director with Dr. Mary Ann Rizk) (2 credits)
- OHCS 511: Perspectives in Oral Health Care Delivery (1 credit)
- EBDM 511: Principles of Scientific Evidence (Co-Director with Dr. Mary Ann Rizk) (2 credits)

Lecturer in the Following Courses (provided in the last 5 years):

- DBMS: Biostatistics (3 hours)
- PH 610: Foundations of Public Health (3 hours)

Experiences with Distance and/or On-line Teaching (provided in the last 5 years):

- “Critical Analysis of the Literature” (Six 1-hour sessions) – Distance education course delivered to dental public health residents by way of *BlueJeans* videoconference software (Sponsor: NYU-Langone Health System, Brooklyn, NY)

## **J. ADEQUACY OF LIBRARY RESOURCES**

The HS/HSL, located on the UMB campus, is one of the largest health sciences libraries in the United States, with a track record of user-centered innovative services and programs. Fifty-seven employees, including 27 faculty librarians, staff the library, including a librarian liaison are assigned to UMSOD. 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; gallery; and multiple technology-enhanced meeting spaces. Through HS/HSL’s website, the UMB community has access to a full range of resources and services.

The HS/HSL supports the university's students, faculty members, and staff members in the schools of Dentistry, 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. Faculty librarians have many years of instructional experience in the classroom, community, and the online environment. For over 30 years, the HS/HSL has provided liaison services, in which faculty librarians are assigned to work with specific user communities, such as UMSOD. These dedicated faculty librarians provide the following services to students: Individualized research assistance for papers and projects; An overview of the library's resources; and Small-group or individual workshops on tools, such as citation managers or specific databases.

A dedicated webpage for dental resources and oral health librarian support is available. In fiscal 2017, faculty librarians reached over 3,500 faculty members, staff members, and students through online and in-person instructional sessions offered through the curriculum and in library-sponsored workshops.

In that same year, the HS/HSL licensed 112 databases, 4,252 journals, 359,911 books (print), and 17,381 e-books. One hundred percent of the current journal subscriptions literature 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 (USMAI) library consortium, the National Library of Medicine's DOCLINE service, and the Online Computer Library Committee (OCLC), among others.

Students in this program will also have the opportunity to utilize the Priddy Library, located on the USG campus. The dedicated health and life sciences librarian will be their primary library contact on that campus. The Priddy Library is jointly administered by USG and the UMCP libraries as an off-site branch library. Students and faculty of the nine university partners that teach at the USG campus receive research, instruction, and curriculum support and services. UMCP is a member library of the USMAI library consortium, and therefore Priddy Library participates in consortium-wide resource sharing.

## **K. ADEQUACY OF PHYSICAL FACILITIES, INFRASTRUCTURE AND INSTRUCTIONAL EQUIPMENT**

The physical facilities, infrastructure, and instructional equipment are adequate to support the program. The physical facilities, infrastructure, and instructional equipment that will support the program will be comprised of existing equipment already located at UMSOD's Baltimore location and brand-new equipment that is being purchased to outfit the facility on the Shady



Grove campus. Furthermore, our facilities, infrastructure, and equipment will support the distance learning needs of the certificate program. All hands-on experiences will take place at the USG location in the new 15-unit simulation lab or the new 24-chair clinical space. A high-speed internet connection will be present between the two facilities to allow for access to all academic resources located at UMSOD's Baltimore location. There will be nine offices for faculty and a large telemedicine room for communication services between the two sites.

Students will use the same hardware and software systems that current UMSOD students use. Email will be through our Office 365 environment; library accounts and complete journal searching ability will be via PubMed. More specifically, our educational technology systems will be:

1. Blackboard, a learning management system;
2. QuestionMark, a secure assessment system, and
3. Mediasite, a didactic capture software.

Information technology staffing will be provided by the existing 22 staff members at UMSOD in Baltimore, new staff members located at the USG site, and existing USG staff.

## **L. ADEQUACY OF FINANCIAL RESOURCES WITH DOCUMENTATION**

The Oral Health Sciences Certificate program will be coordinated and administered by the UMSOD. Program Director and faculty for each content area have been identified. Tuition will be administered through the University of Maryland Graduate School. Tuition and general funds from the USM will constitute the basis of cost to deliver the curriculum. UMSOD does not foresee funding changes and anticipates the ongoing intention of funding provided as described in the MOU between USM, USG, and UMB. Please note all building, facilities and infrastructure costs will be provided by the USM to Shady Grove. Financial resource adequacy to deliver curriculum costs can be seen in Tables 2 and 3 and supporting notes, as well as the accompanying MOU between USM, USG, and UMB.

## **M. ADEQUACY OF PROVISIONS FOR EVALUATION OF PROGRAM**

Every 10 years, UMB undergoes a reaffirmation of its accreditation with the Middle States Commission on Higher Education. The review process provides an opportunity to strengthen the university through an independent comprehensive evaluation. Under the established university's holistic institutional assessment model, we will ensure that the program is:

1. Responsive and accountable to its stakeholders;
2. Advances the university's mission and vision; and
3. Utilizes assessment data and other relevant information to evaluate the effectiveness of its programs, both at the macro and micro levels.

UMSOD has numerous checks and balances in place to ensure quality control and student achievement. The procedures that will be employed for evaluating courses, faculty, and student learning outcomes will follow well-established guidelines. Upon course completion, courses, course directors and individual faculty lecturers will be evaluated by students through an anonymous web-based survey software program, as currently utilized for other UMSOD educational programs. These evaluation data are administered through the Office of Academic Affairs and are reviewed by the program director, course directors, individual lecturers and department administrators.

The criteria for student grading will be outlined within each course syllabus. Every student enrolled in the certificate program will be assigned a faculty advisor to facilitate success. Program orientation will contain a series of web conferences that will include descriptions of available resources, including access to the UMB library. Overall, student progress will be monitored by the program director, who will work with the student and his or her assigned advisor to ensure continuous oversight.

## **N. CONSISTENCY WITH THE STATE'S MINORITY STUDENT ACHIEVEMENT GOALS**

The University of Maryland, Baltimore institutionally is committed to fostering an environment that recognizes and values each member of the community, enabling members to function at their highest potential to achieve their personal and professional goals. This theme of diversity, a component of UMB's 2017-2021 Strategic Plan, forms the framework and compass for all components within—including the School of Dentistry (UMSOD). This past year (2018), UMSOD warmly welcomed a DDS student body that contains the highest percentage of underrepresented minorities in all United States dental schools, excluding Historically Black Institution (HBI) dental schools, Meharry Medical College and Howard University. Reflecting this philosophy, the current programs at UMSOD embrace diversity and student development of cultural competence. This same philosophy is a crucial thread of the foundational fabric for our proposed post-baccalaureate program.

Importantly, there are elements of this proposed post-baccalaureate program that support the goals of the Maryland State Plan for Postsecondary Education (2017-2021), which includes innovation in higher education to improve access and student success. This program positively contributes to the improvement of student access and accomplishment for traditionally educationally disadvantaged groups. The proposed graduate program, by embracing a hybrid learning andragogy, will pave the road to success for life-long learners from diverse communities. First, distance technology will be the platform for much of the course delivery. Distance learning provides educational opportunities for students who otherwise might not be able to participate in a traditional classroom environment. This is an especially important factor for the core audience of this program—life-long learners who are typically in full-employment as health care professionals (e.g. nursing, physicians' assistant, etc.). For example, diversity in the profession of nursing is already an established critical need.<sup>6</sup> Therefore, the design of any

advanced educational opportunities, such as this post-baccalaureate program, should in no manner discourage or interfere with existing diversity initiatives of the profession. In this case, a program for the life-long learner can be completed while maintaining employment; in many cases individuals, due to socio-economic factors, do not have the luxury of becoming a “full-time” student. Furthermore, online-based degree programs embracing core values emphasizing social change and community engagement have been highly attractive to historically underrepresented groups.<sup>7</sup> Distance learning, as an educational modality, eliminates the barrier of geography and space between teachers and students, notably for rural and isolated communities. Distance learning not only achieves access, but can also help ensure success, as the technology of distance learning meets the needs of various learners, addresses different learning styles, and provides for various instructional approaches. Essentially, with the proper use of its varied technology, distance learning can address the needs of all diverse populations. Emphasizing interactive learning, distance technology embraces a shift from passive to active learning and from competition to collaboration. In the end this type of effective collaborative learning values diversity.<sup>8,9</sup>

#### **O. RELATIONSHIP TO LOW PRODUCTIVITY PROGRAMS IDENTIFIED BY THE COMMISSION**

The proposed program is not directly related to an identified low-productivity program.

#### **P. ADEQUACY OF DISTANCE EDUCATION PROGRAMS**

UMSOD has designed the Certificate in Oral Health Science utilizing a strategic hybrid approach to support both clinical learning and online didactic learning, while advancing the design and development of student engaging courses. As a result, we look forward to achieving the following distance education objectives:

1. Improve student learning outcomes due in part to an agile 12 credit curriculum and cost-effective modeling.
2. Improve access and opportunity for diverse student populations by offering part time and non-residential programing.
3. Timely re-emergence to the healthcare workforce, allowing for efficient translation of knowledge and skills.
4. Flexibility and portability of a stackable certificate.<sup>10</sup>

A mostly distance education delivery model, incorporating both online and face-to-face clinical experience learning, will strategically support the innovative program. In order to facilitate educational objectives and learning outcomes, UMSOD will deliver premier practices of distance

education principles in compliance with the Council of Regional Accrediting Commissions (C-RAC).<sup>11</sup>

### **Mission and Purpose Alignment**

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. In alignment and support of our parent school, UMB, the UMSOD strives toward preeminence through excellence and innovation with a targeted focus on education, patient care, research, public service, and global engagement.

### **Online Education Curricula**

In order to support the rigorous curriculum, students will be exposed to synchronous, asynchronous, and face-to-face clinical experience education modes. Through UMSOD's learning management system, Blackboard, course curricula for all modes of learning will be available. For example, a synchronous conferencing software, Blackboard Collaborate, will be used to engage learners in live activities such as presentations and live class sessions. Additionally, video cameras, webcams, and an interactive smart board are available (with support) to faculty members.

It is important to note that this unique, part-time program includes face-to-face clinical experience at Shady Grove, as well as fully online courses; as a result, the program will be clearly communicated as such to enable transparency and student clarity.

### **Academic Oversight and Evaluation of Online Learning**

UMSOD will continue to ensure that the rigor and quality of instruction are at the same levels, and, in some cases enhanced, compared to face-to-face programs. Through the utilization of our current academic evaluation process and oversight by the program director, we will deploy best practices for distance education.

The historically successful UMSOD curriculum review and evaluation process will continue to be employed, as well as additional distance education evaluation practices. To assure we are providing our students significant quality education, the following evaluation actions, as shown in Table 4, will be deployed for the proposed program.

**Table 4: Evaluation Actions to Be Used in Certificate in Oral Health Science**

Oversight Resource	Evaluation Action and Support
Program director, course directors, faculty, students, faculty in the Office of Instructional Evaluation, and administrators	Ongoing and open collection of feedback.
Advanced Dental and Graduate Education (ADGE) Committee	Meetings on discussion, actions, and proposals related to courses being taught, areas of concern, coordination of instruction, ongoing faculty calibration, planning for subsequent semesters, long-range planning of curriculum direction in relationship to the program, its missions and those of the school and campus.
Department of Advanced Oral Sciences and Therapeutics, and Office of Academic Affairs	Meetings offer faculty development educational workshops and seminars for updating course methodology and updating course content to meet student needs; curriculum matters continually are raised and discussed.
UMSOD Faculty Council	Meetings on oversight of all policies, procedures, curricular and clinical business connected to faculty responsibilities to UMSOD.
Office of Educational Technology	Conducts yearly surveys with students to assess their utilization of and opinions on the quality and effectiveness utilized by the course director; shares the survey analyses with the Advanced Dental and Graduate Education (ADGE) Committee.
Program Director	Administers surveys, analyzes data, and disseminates a variety of reports that address curricular issues; assists with long-range programmatic planning; and assesses alumni and employer opinions, patient satisfaction, student opinions, and student documentation. Reports monthly to the ADGE Committee.

Furthermore, using the Specific Review Standards from the Quality Matters Higher Education Rubric, Sixth Edition,<sup>12</sup> the course directors, program director, and instructional designer will assess the course overview and introduction, learning objectives (competencies), student assessment and measurement, instructional materials, learning activities and learner interaction, course technology, learner support, and accessibility and usability for each course.

### Qualified and Supported Faculty

Our collective and collaborative team of faculty and staff have experience in distance education that encompasses experienced distance education faculty, dedicated instructional technology,

multimedia, and instructional design support and training, and a premier faculty development program that includes development in these areas.

Furthermore, as a team, we continue to enhance our distance education competences and plan to provide a combination of synchronous and asynchronous education, including, but not limited to, a virtual collaboration platform and a cloud-based online examination platform to engage students. Our robust faculty development program is inclusive of distance learning andragogy best practices, as well as new educational technology proficiency and applicability.

### **Development and Sustainment**

The UMSOD administration, faculty members, and staff members are committed to developing and sustaining the Certificate in Oral Health Science. In addition to explicitly stating distance education as a priority in our strategic plan, we have assigned programmatic ownership and expectations aligned to a budget plan and technology plan. In the future, the innovative and student-centric program will be taken into consideration for expanded scope to include clinical experiences face-to-face at the UMSOD Baltimore campus.

### **Student Support in Online Learning**

The program's hybrid delivery model combines the use of online courses and in-person clinical experiences. Full transparency with students regarding online and in-person clinical course expectations, requirements, and responsibilities is essential to deliver this hybrid model successfully. In addition, a certain level of student technology experience, knowledge, and skill will support student success in online and hybrid courses. Moreover, regardless of the course format, students need consistent access to academic and technical support services. For details on how UMSOD administrators, faculty, and staff will provide distance education student support see Table 5.

<b>Table 5: Distance Education Support</b>	
<b>UMSOD administrators, faculty, and staff will provide distance education student support by:</b>	<ul style="list-style-type: none"> <li>▪ Communicating the nature of online learning, specifically the applicability to the program, prior and throughout the student lifecycle.</li> </ul>
	<ul style="list-style-type: none"> <li>▪ Confirming enrolled students have reasonable and adequate access to the range of student services to support their learning.</li> </ul>
	<ul style="list-style-type: none"> <li>▪ Confirming accepted students have the background, knowledge, and technical skills needed to undertake the program.</li> </ul>
	<ul style="list-style-type: none"> <li>▪ Communicating the availability of the library's student services for access to research databases, online catalog of books and media, electronic interlibrary loan, librarians, and more.</li> </ul>

### **Online Education Integrity**

As reinforced and strengthened in our core values of accountability, civility, collaboration, diversity, excellence, knowledge, and leadership, institution integrity is of the utmost importance. To assure distance education integrity specifically for the Certificate in Oral Health Science, administrators, faculty members, and staff members at UMSOD will continue to convey established policies, procedures, and practices, including, but not limited to:

- The UMB Policy on Faculty, Student, and Institutional Rights and Responsibilities for Academic Integrity;
- Educational technology security safeguards and procedures;
- Online learning academic integrity discussions during student orientation and throughout semesters; and
- The online course student agreement to further establish expectations and responsibilities.

## REFERENCES

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<sup>11</sup> Council of Regional Accrediting Commissions. Interregional Guidelines for the Evaluation of Distance Education. 2011. Washington. Accessed June 12, 2018. <http://www.nc-sara.org/files/docs/C-RAC%20Guidelines.pdf>

<sup>12</sup> Quality Matters. Specific Review Standards from the Quality Matters Higher Education Rubric, Sixth Edition. 2008. Annapolis, Maryland. Accessed September 7, 2018. <https://www.qualitymatters.org/sites/default/files/PDFs/StandardsfromtheQMHigherEducationRubric.pdf>

## APPENDIX C

# Oral Health Post-Baccalaureate Certificate

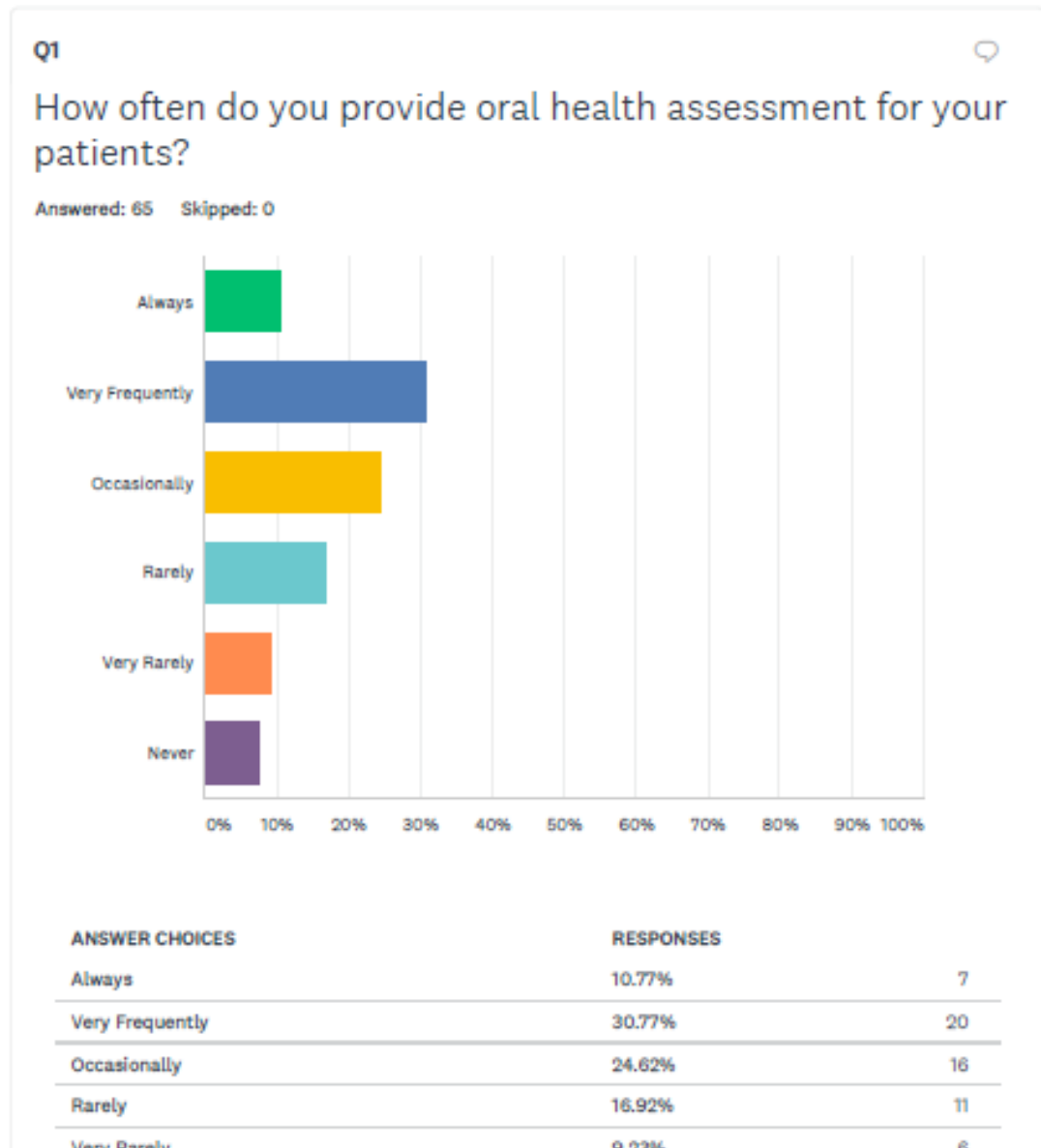
Oral Health Post-Baccalaureate Certificate

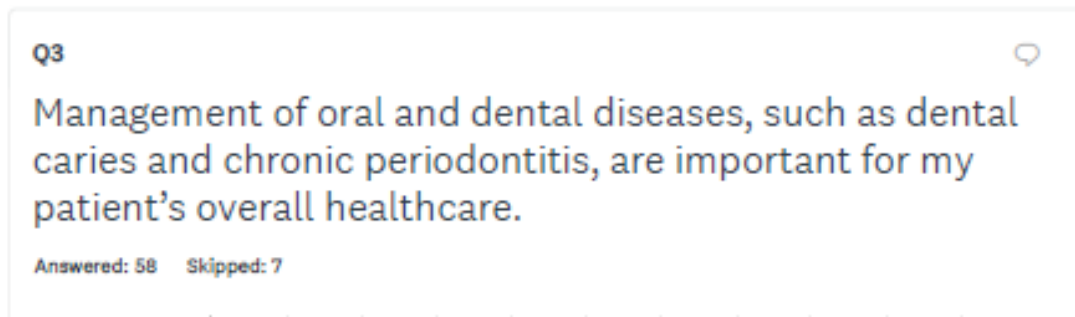
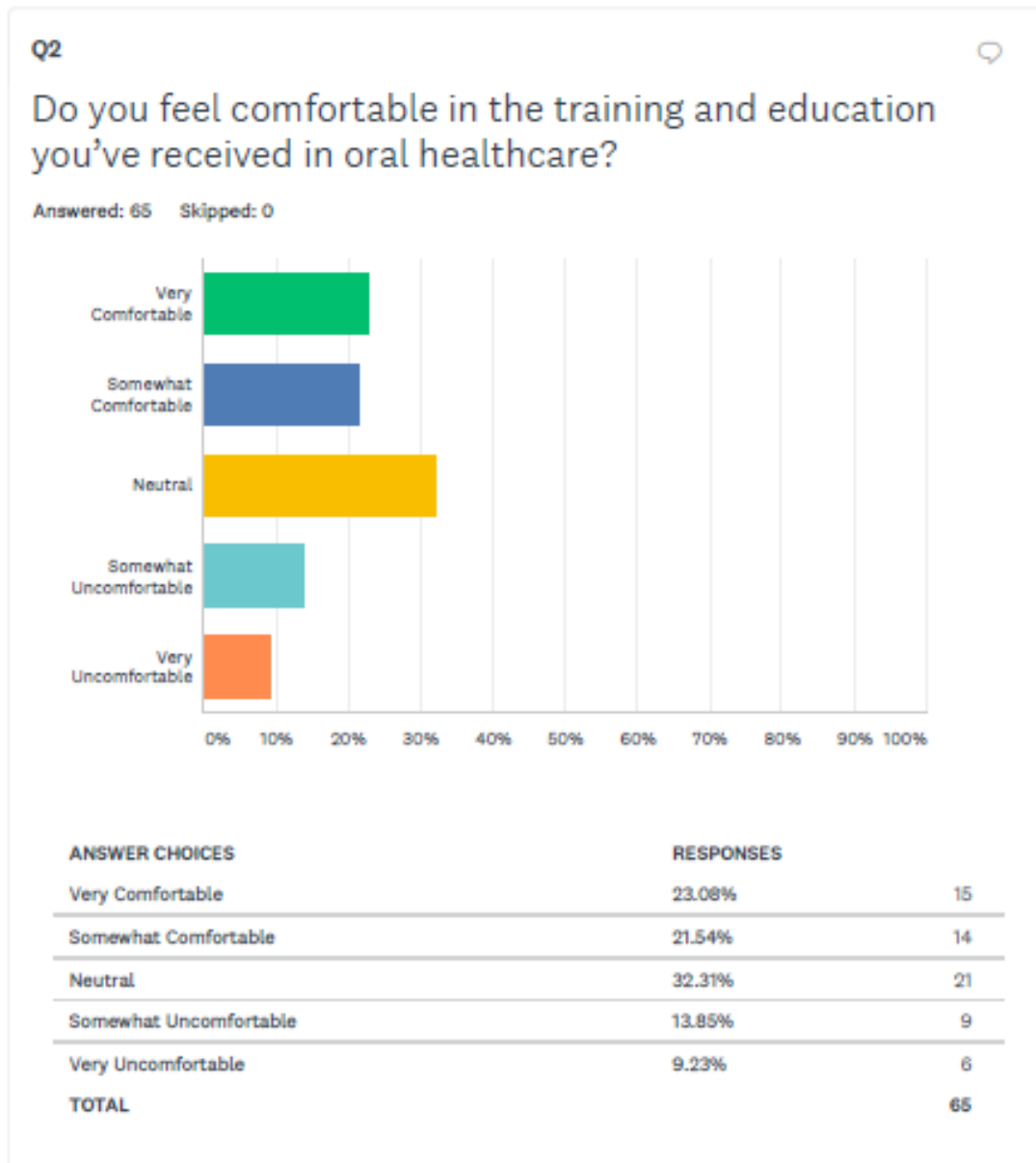
QUESTION SUMMARIES

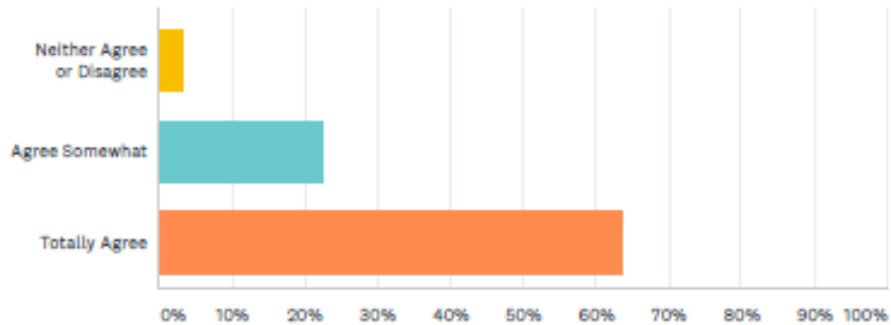
DATA TRENDS

INDIVIDUAL RESPONSES

All Pages ▾





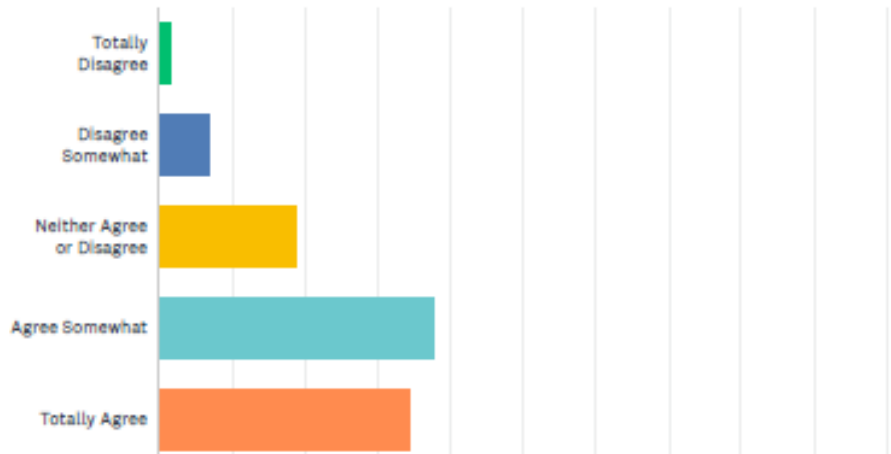


ANSWER CHOICES	RESPONSES	
Totally Disagree	6.90%	4
Disagree Somewhat	3.45%	2
Neither Agree or Disagree	3.45%	2
Agree Somewhat	22.41%	13
Totally Agree	63.79%	37
<b>TOTAL</b>		<b>58</b>

Q4

My recognition of oral and dental diseases, such as dental caries and chronic periodontitis, will enable me to provide better patient care and management.

Answered: 58 Skipped: 7

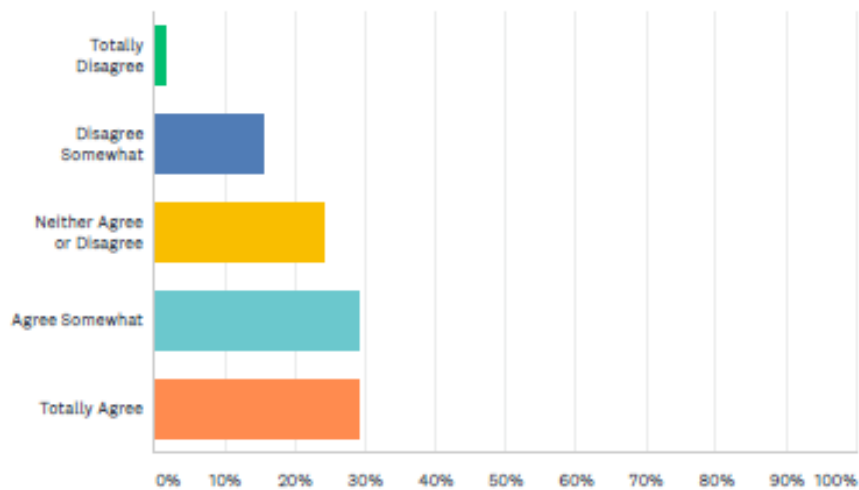


Totally Disagree	1.72%	1
Disagree Somewhat	6.90%	4
Neither Agree or Disagree	18.97%	11
Agree Somewhat	37.93%	22
Totally Agree	34.48%	20
<b>TOTAL</b>		<b>58</b>

Q5

My recognition of oral and dental diseases, such as dental caries and chronic periodontitis, will enhance my ability to improve patient healthcare outcomes within my department.

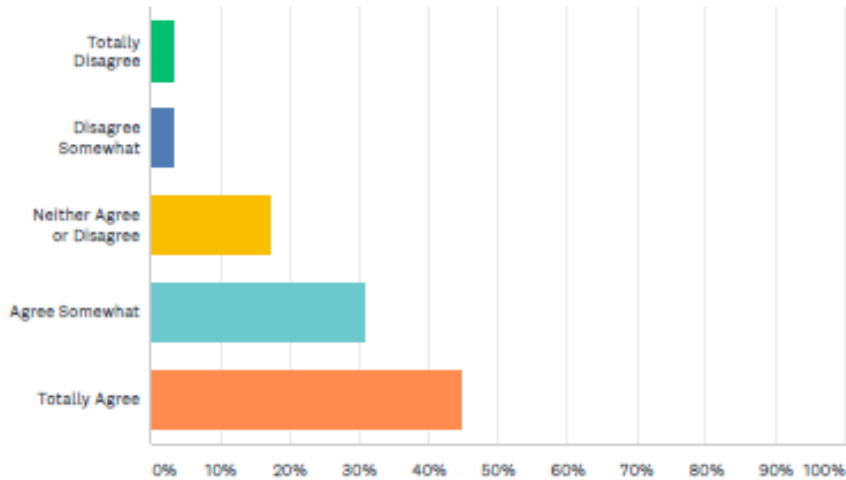
Answered: 58 Skipped: 7



ANSWER CHOICES	RESPONSES	
Totally Disagree	1.72%	1
Disagree Somewhat	15.52%	9
Neither Agree or Disagree	24.14%	14
Agree Somewhat	29.31%	17
Totally Agree	29.31%	17

I want to enhance my professional development and employment opportunities in clinic patient care, public health, academics, research, and/or administration.

Answered: 58 Skipped: 7



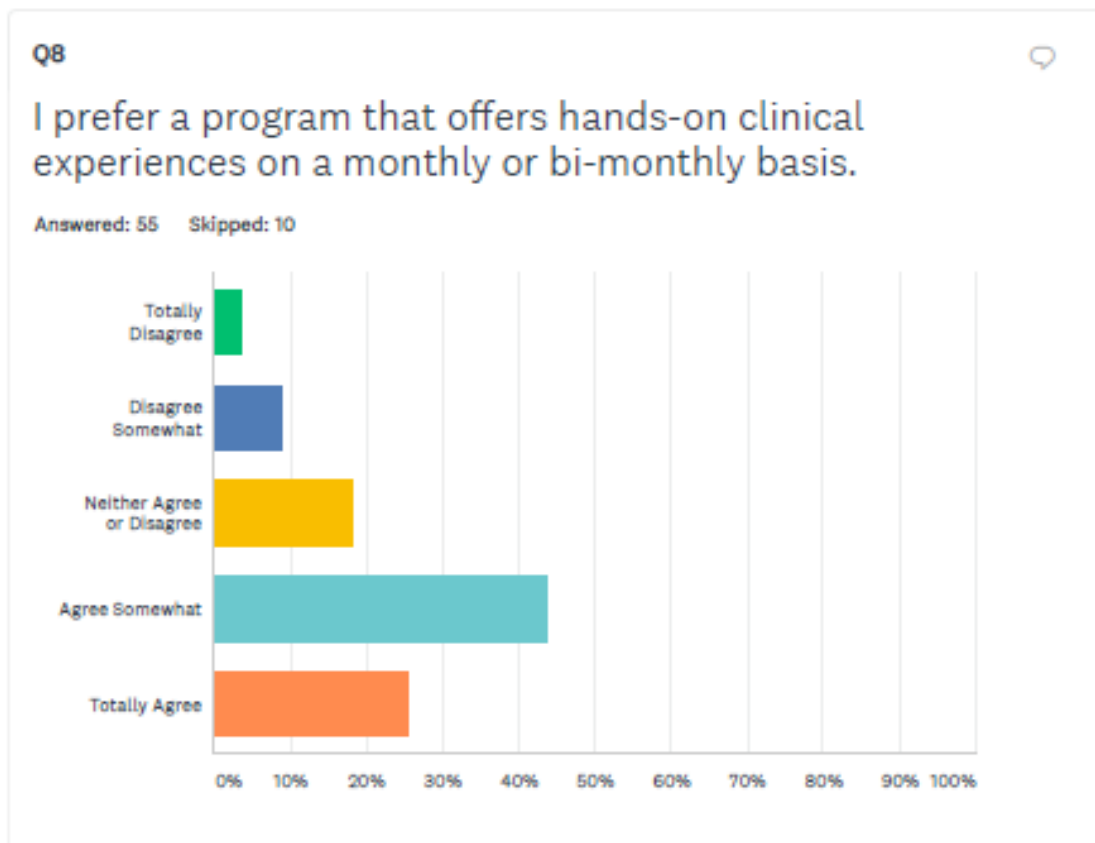
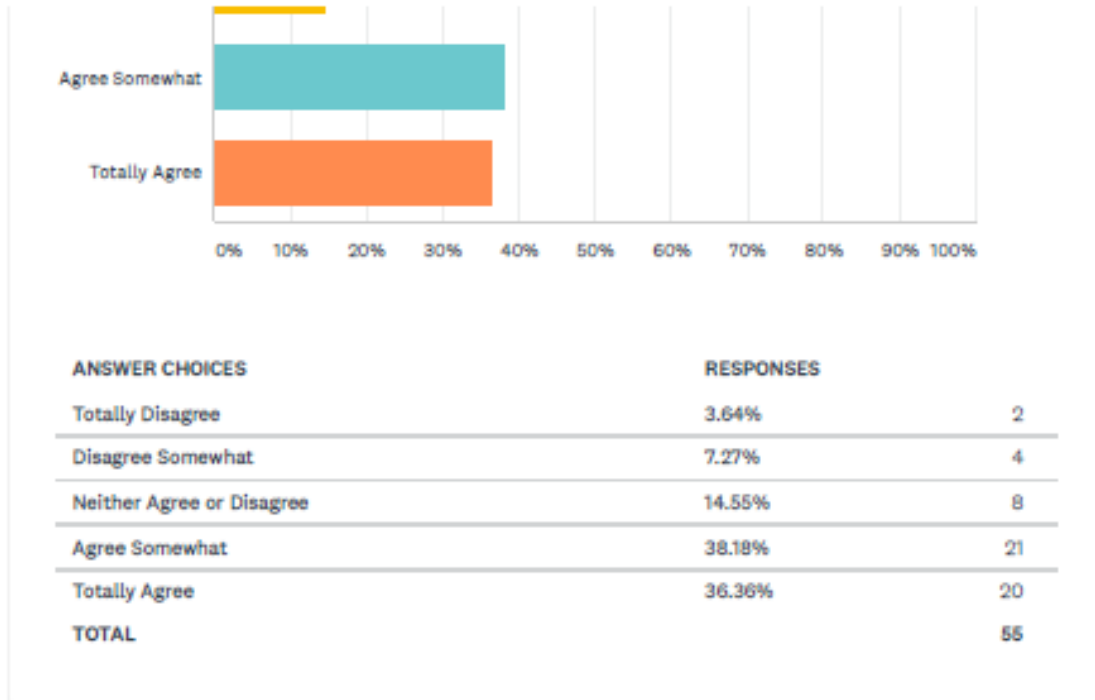
ANSWER CHOICES	RESPONSES	
Totally Disagree	3.45%	2
Disagree Somewhat	3.45%	2
Neither Agree or Disagree	17.24%	10
Agree Somewhat	31.03%	18
Totally Agree	44.83%	26
<b>TOTAL</b>		<b>58</b>

Q7

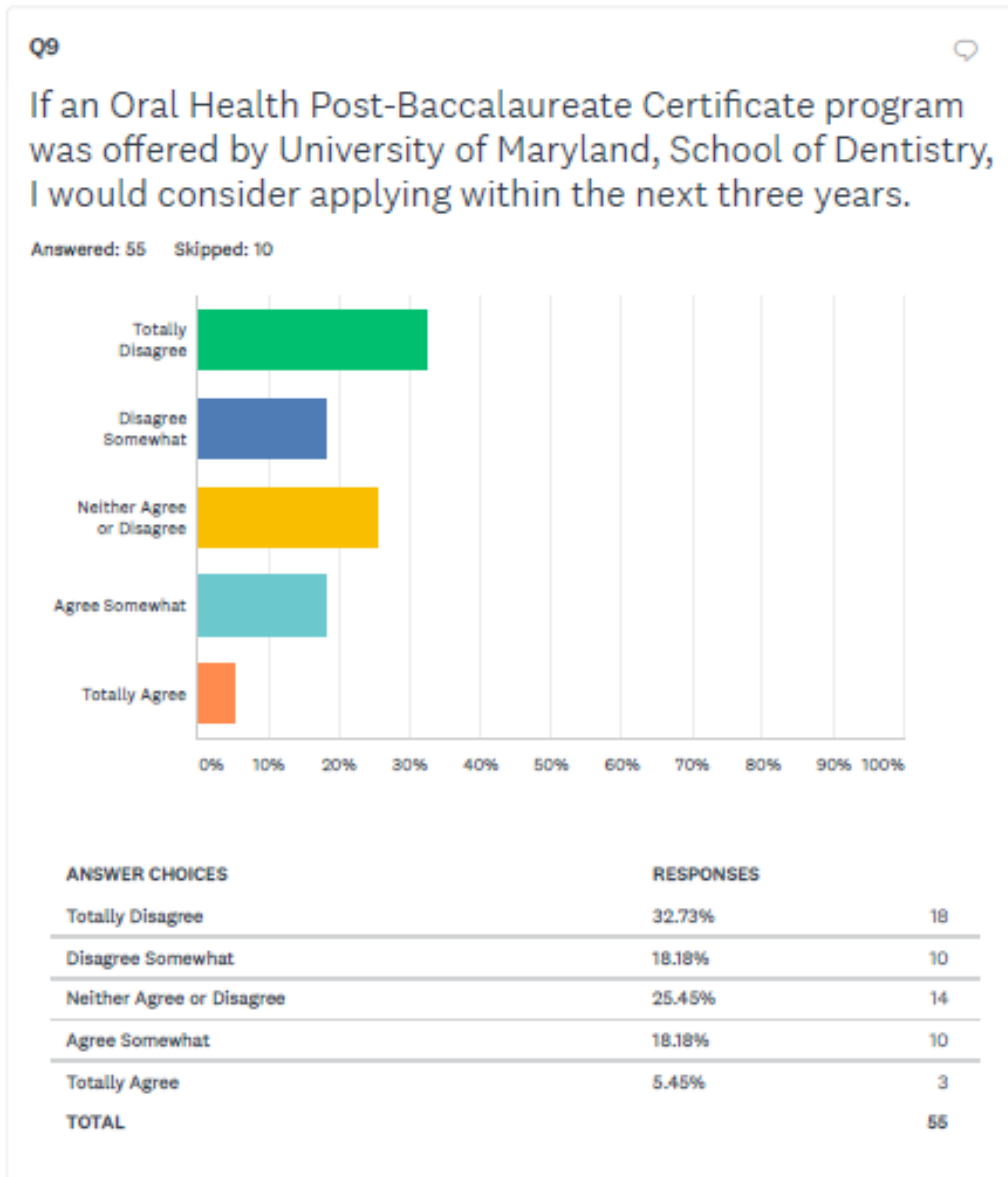
I prefer a program that offers hybrid (mix of face to face and online) courses and hands-on clinical practice.

Answered: 55 Skipped: 10



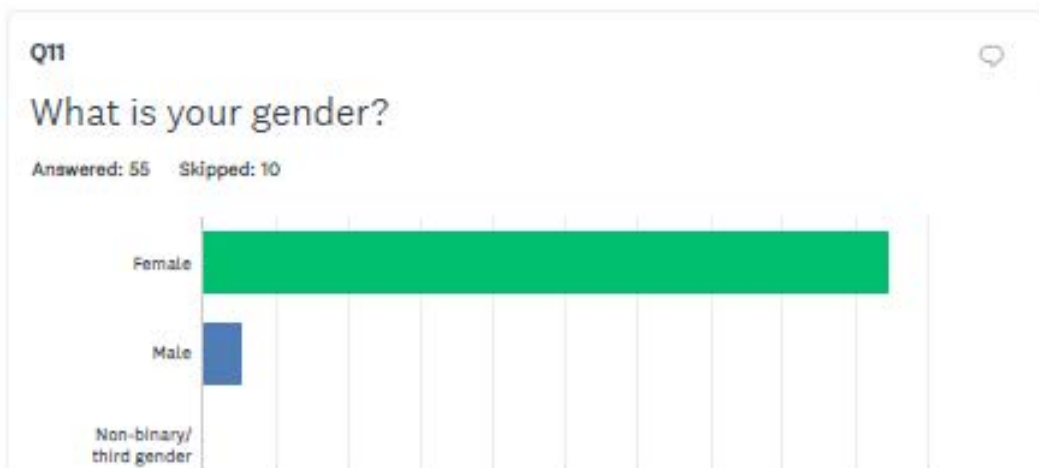
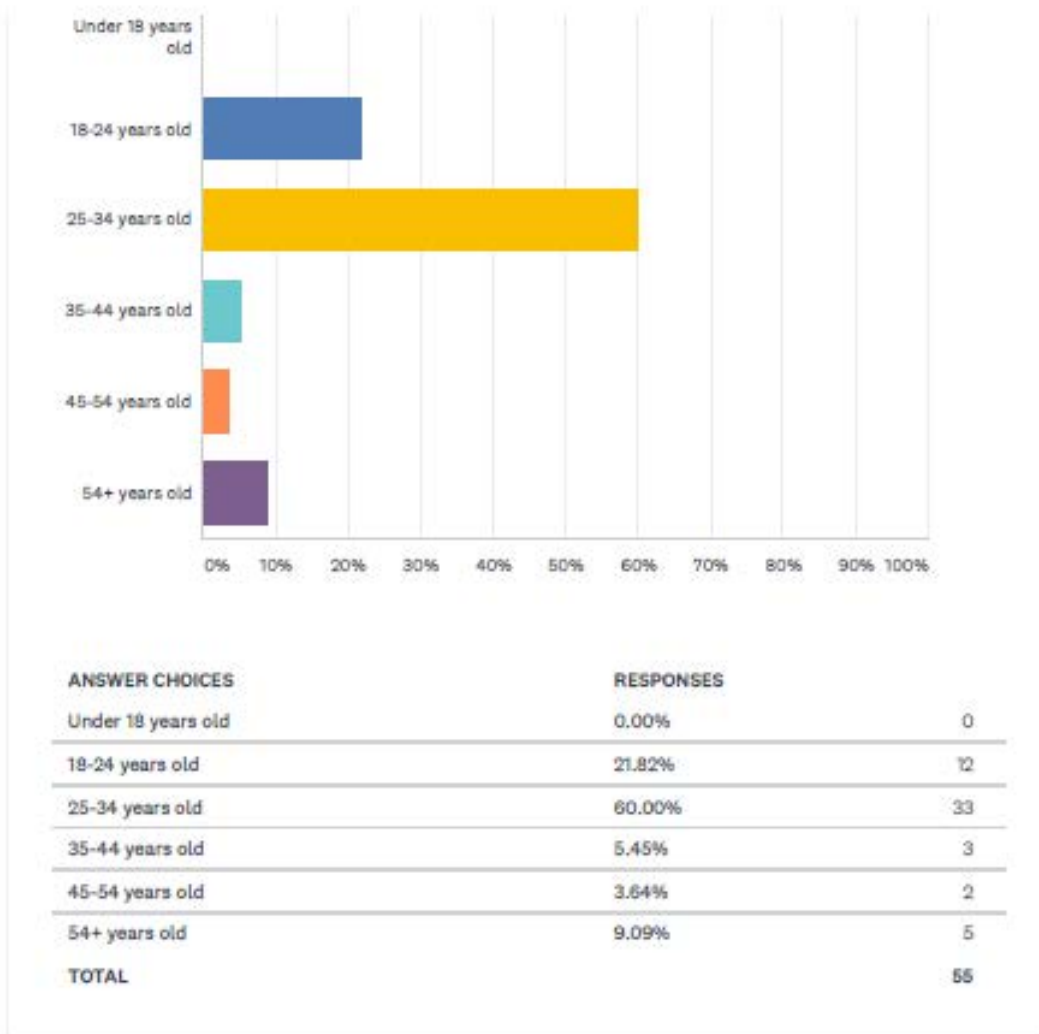


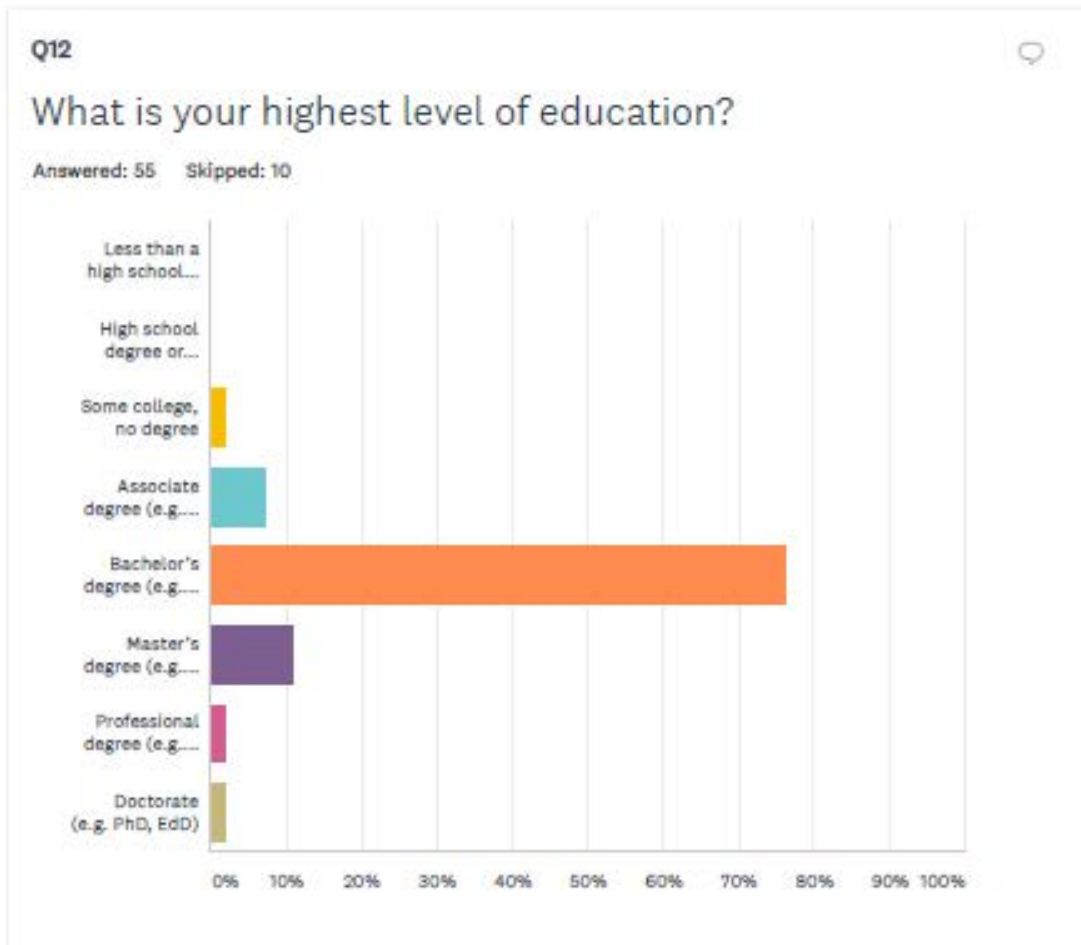
Agree Somewhat	43.64%	24
Totally Agree	25.45%	14
<b>TOTAL</b>		<b>55</b>



**Q10**





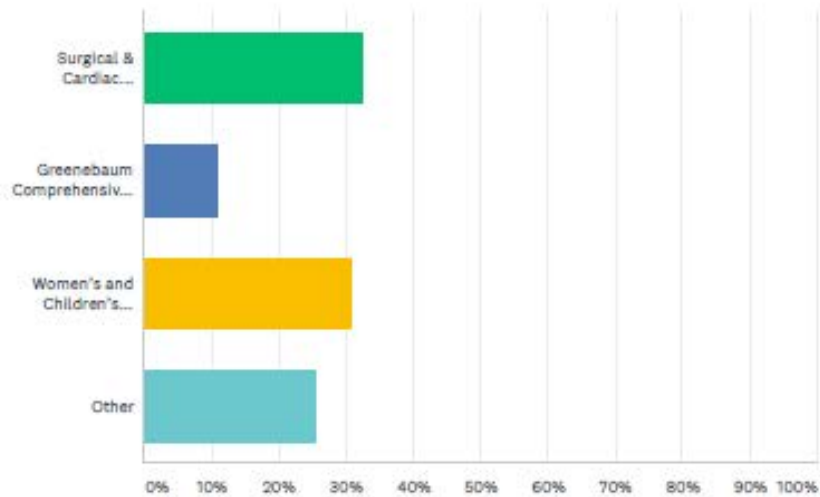


Bachelor's degree (e.g. BA, BS)	76.36%	42
Master's degree (e.g. MSN, MA, MS, MEd)	10.91%	6
Professional degree (e.g. DNP, MD, DDS, DVM)	1.82%	1
Doctorate (e.g. PhD, EdD)	1.82%	1
<b>TOTAL</b>		<b>55</b>

Q13

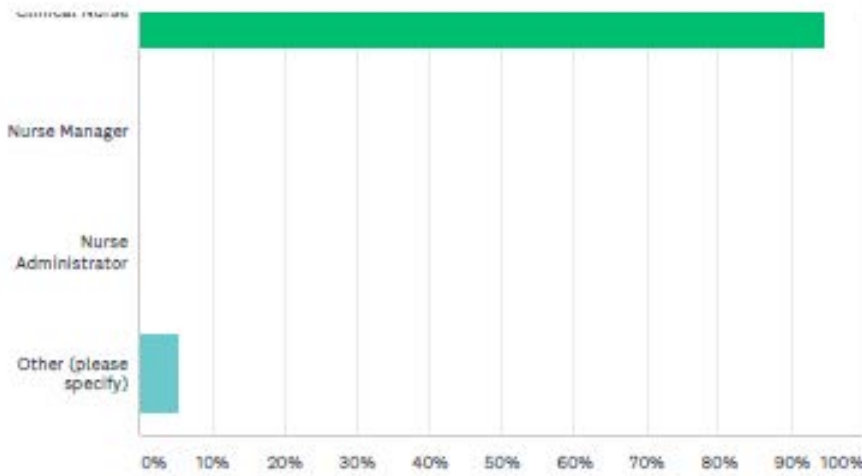
What department at UMMC do you work in?

Answered: 55 Skipped: 10



ANSWER CHOICES	RESPONSES	
Surgical & Cardiac Surgical Services	32.73%	18
Greenebaum Comprehensive Cancer Center	10.91%	6
Women's and Children's Health	30.91%	17
Other	25.45%	14
<b>TOTAL</b>		<b>55</b>

Q14



ANSWER CHOICES	RESPONSES	
Clinical Nurse	94.55%	52
Nurse Manager	0.00%	0
Nurse Administrator	0.00%	0
Other (please specify)	5.45%	3

Ambulatory setting

11/26/2018 2:26 PM

PCT

11/15/2018 8:53 PM

nurse coordinator

11/12/2018 9:18 PM

Section C:

Market Research by Educational Advisory Board (EAB): Comparable Program Characteristics

**Program Characteristics**

**A Post-Baccalaureate Certificate May Appeal to Prospective Students from a Variety of Disciplines**

Should administrators at the **University of Maryland-Baltimore** develop a standalone program, prioritize the development of a post-baccalaureate certificate. Administrators at **Institution A** emphasize the relevance of oral health skills for non-dental health care professionals and note students in a range of health care programs should have access to oral health content. Allowing students to complete a post-baccalaureate certificate in oral health may appeal more than a full master's degree program, due to less financial cost and quicker time to completion.

Consider offering the proposed program in an online or hybrid format to meet the needs of working professionals or students already involved in other health care programs (e.g., nursing, physician assistant programs). New York University launched the Oral Health Nursing Education and Practice (OHNEP) program in 2011 as a partnership between the nursing program and the College of Dentistry and began offering free content online. The **University of Southern California** offers relevant master's-level and certificate programs online; the institution advertises that students typically continue to work while enrolled.

Of profiled programs, the **University of Illinois at Chicago** and the **University of Southern California** advertise capstone experiences for enrolled students. However, neither program publishes faculty-to-student ratios for these programs.

**Post-Baccalaureate and Master's Oral Health Programs for Non-Dental Health Care Professionals: Program Characteristics**

*Profiled Programs*

Institution	Program Title	Modality	Advertised Tuition and Fees	Advertised Credentials	Capstone Requirement?
New York University	<a href="#">Oral Health Nursing Education and Practice Program</a>	Online	Free	N/A	No
University of Southern California	<a href="#">Master in Community Oral Health</a>	Online	\$1,863 per unit	N/A	Yes
	<a href="#">Certificate in Oral Health</a>	Online	\$1,863 per unit	N/A	No
Boston University	<a href="#">Master of Science in Dental Public Health</a>	Not reported	<ul style="list-style-type: none"> <li>\$52,816 annual tuition</li> <li>\$664 annual fees</li> </ul>	American Dental Association Continuing Education Recognition Program	No
University of Illinois at Chicago	<a href="#">Master of Science in Oral Sciences</a>	Not reported	<ul style="list-style-type: none"> <li>In-state: \$5,830 per credit</li> <li>Out-of-state: \$11,950 per credit</li> </ul>	N/A	Yes

Market Research by Educational Advisory Board (EAB): Employer Demand Trends

**Demand over Time**

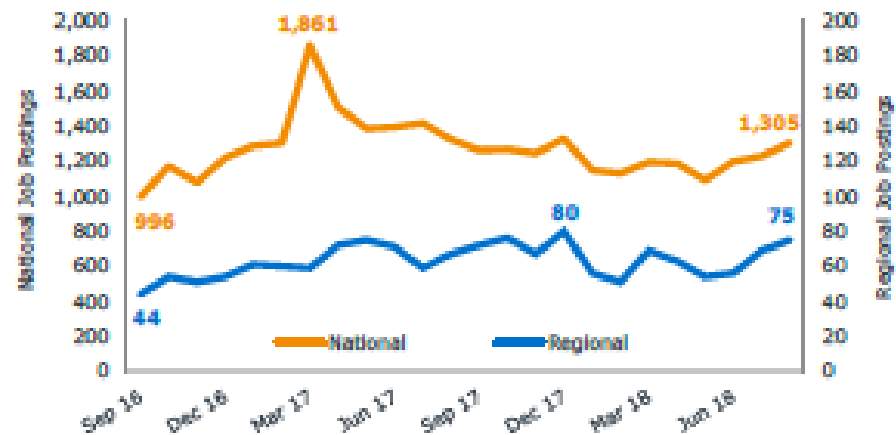
**Regional and National Demand for Non-Dental Health Care Professionals with Oral Health Expertise Increased 70 and 31 Percent from September 2016 to August 2018**

Regional employers express demand for non-dental health care professionals with oral health expertise in 75 job postings in August 2018, a 70 percent increase from the 44 relevant job postings in September 2016. Regional demand for non-dental health care professionals with oral health expertise peaked in December 2017, with 80 job postings; this represents an 82 percent increase from the 44 jobs posted in September 2016. Similarly, national demand for non-dental health care professionals with oral health expertise rose from 996 job postings in September 2016 to 1,305 relevant job postings in August 2018 (i.e., 31 percent increase in demand).

Emsi projects faster than average employment growth for top occupations for non-dental health care professionals with oral health expertise. For example, Emsi projects employment of 'registered nurse' and 'nurse practitioner' professionals to increase 16 and 36 percent, respectively, nationally from 2017 to 2027. Additionally, Emsi projects 36 percent employment growth for the 'physician assistant' occupation between 2017 and 2027. These rates of growth significantly outpace the 10 percent projected average employment growth for all occupations in the same time.

**Historical Demand for Non-Dental Health Care Professionals with Oral Health Expertise**

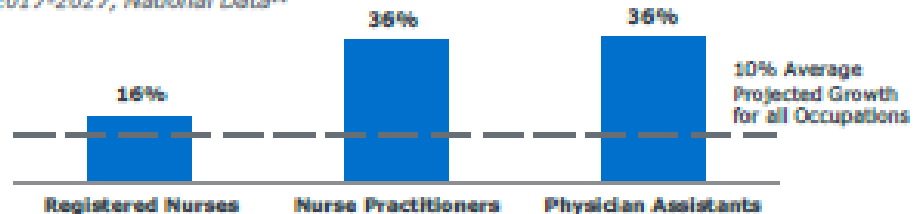
September 2016-August 2018, Regional and National Data<sup>10</sup>



Administrators should note not all professionals employed in these occupations will seek oral health training.

**Occupational Trends for In-Demand Occupations**

2017-2027, National Data<sup>11</sup>



<sup>10</sup> Emsi Analyst<sup>TM</sup>  
<sup>11</sup> Emsi Analyst<sup>TM</sup>

## Top Titles and Skills

### Target Nursing Professionals to Enroll in the Proposed Program to Meet Employer Demand and Align with Peer Programs

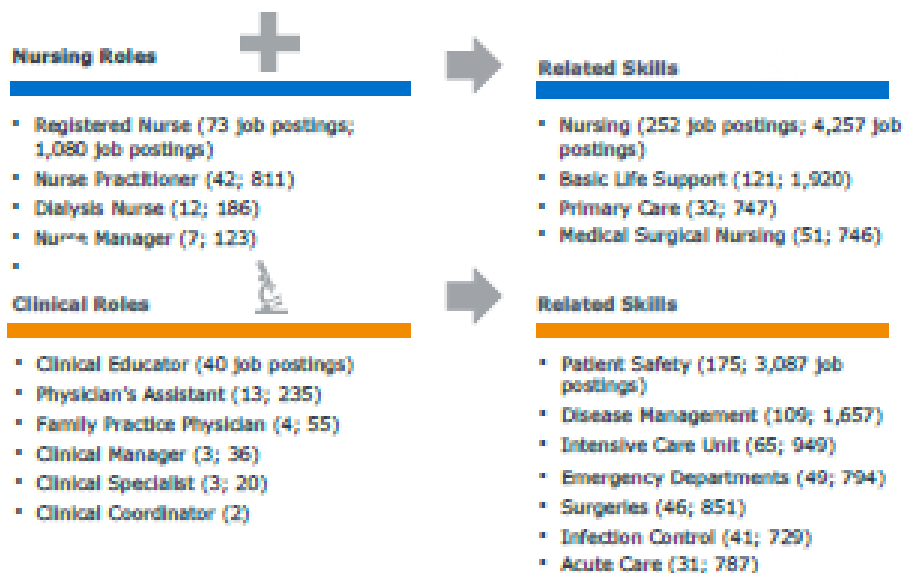
Employers frequently express demand for nursing professionals with oral health expertise to fill roles such as 'nurse practitioner,' 'dialysis nurse,' and 'nurse manager.' Regional employers seek non-dental health care professionals with oral health expertise to fill 'registered nurse' positions in 73 job postings in the last 12 months (i.e., three percent of relevant job postings). Smiles for Life, a national education initiative, reports 47 percent of students registered for the Smiles for Life curriculum in 2017 identified as nurses (e.g., compared to 26 percent for physician assistant students).<sup>13</sup>

Regional and national employers also express demand for non-dental health care professionals with oral health expertise to fill clinical and specialized roles such as 'clinical manager,' and 'emergency medical technician.' Regional employers seek non-dental health care professionals with oral health expertise with 'disease management' and 'surgeries' skills in 109 and 46 job postings, respectively.

### Top Titles and Skills for Non-Dental Health Care Professionals with Oral Health Expertise

September 2017-August 2018, Regional and National Data<sup>13</sup>

n(regional)=2,308 job postings; n(national)=5,437 job postings



## Top Employers

### Davita Inc. Demonstrates the Most Demand for Non-Dental Health Care Professionals with Oral Health Expertise

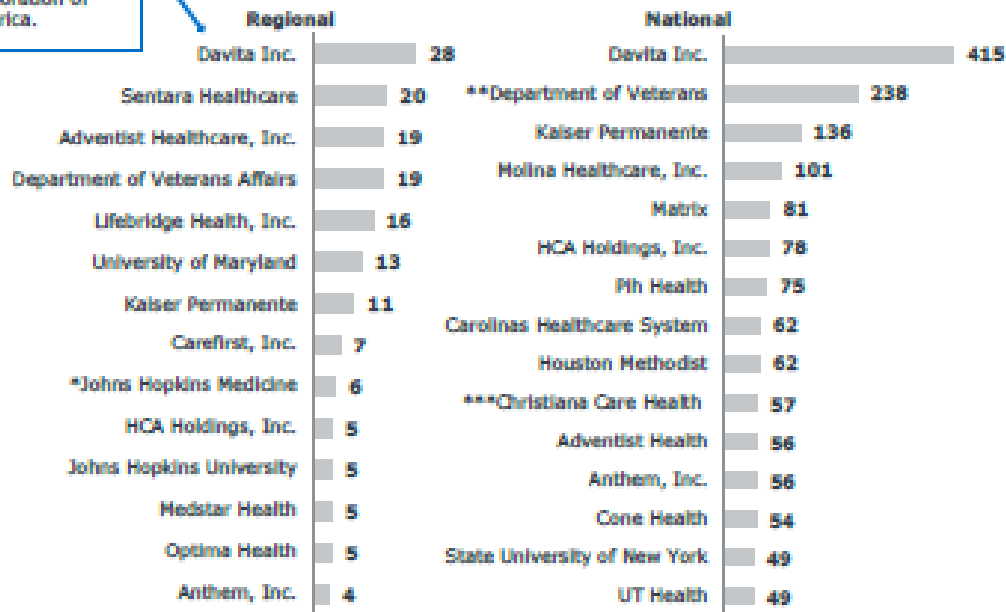
As expected, health care companies and insurance agencies frequently seek non-dental health care professionals with oral health expertise. For example, Kaiser Permanente, a health care company, seeks non-dental health care professionals with oral health expertise in 136 job postings during the past year (i.e., three percent of relevant postings). Davita Inc., a health care company focused on kidney care, represents the regional and national employer with the greatest demand for non-dental health care professionals with oral health expertise during that time.

The Department of Veterans Affairs represents the only government employer to rank among the top 15 regional and national employers with highest demand for non-dental health care professionals with oral health expertise. Nationally, the Department of Veterans Affairs posted 238 job postings in the past 12 months for non-dental health care professionals with oral health expertise.

- Matrix refers to MatrixCare, a skilled nursing solution company.
- HCA Holding Inc. refers to Hospital Corporation of America.

### Top Employers for Non-Dental Health Care Professionals with Oral Health Expertise

September 2017-August 2018, Regional and National Data<sup>14</sup>  
n(regional)=2,308 job postings; n(national)=5,437 job postings



<sup>14</sup>Johns Hopkins Medicine International, L.L.C.

\*\*Department of Veterans Affairs

\*\*\*Christiana Care Health Services, Inc.



## APPENDIX L

TABLE 1: PROGRAM RESOURCES					
Resource Categories	Year 1	Year 2	Year 3	Year 4	Year 5
1. Reallocated Funds	\$0	\$0	\$0	\$0	\$0
2. Tuition and Fee Revenue (c + g below)	\$36,394	\$55,653	\$66,192	\$67,480	\$78,622
a. Number of F/T Students	0	0	0	0	0
b. Annual Fee Rate	\$500	\$505	\$510	\$515	\$520
c. Total Fee Revenue (d x b)	\$2,000	\$3,030	\$3,570	\$3,606	\$4,162
d. Number of P/T Students	4	6	7	7	8
e. Credit Hour Rate	\$717	\$731	\$745	\$760	\$776
f. Annual Credit Hours	\$12	\$12	\$12	\$12	\$12
g. Total P/T Revenue (d x e x f)	\$34,394	\$52,623	\$62,622	\$63,874	\$74,459
3. Grants, Contracts & Other External Sources	\$0	\$0	\$0	\$0	\$0
4. Other Sources	\$ 89,725	\$ 156,775	\$ 166,696	\$ 170,030	\$ 164,123
5. TOTAL (Add 1-4)	\$ 126,120	\$ 212,429	\$ 232,888	\$ 237,510	\$ 242,744

\*Please see notes on next page

**Notes to Table 1: Program Resources**

1. UMSOD currently does not expect to reallocate existing funds due to anticipated funding from the pending MOU between USM, USG, and UMB

2a. The Oral Health Sciences Certificate program is a part-time program, therefore, fulltime enrollment is non-applicable

2b-c. Fees reflect part time student costs for student kit sterilization and consumption of disposable materials

2e. Credit hour rates and fees are based on current and historical credit rates and fees for existing programs at UMSOD and University of Maryland Graduate School

4. Funding data is based on the current Shady Grove MOU comprised of shared resources to support the B.S./M.S. Clinical Dental Hygiene Leader Dual-Degree program and Graduate Certificate in Oral Health Sciences (12 credits) program. In addition, funding will support anticipated rotation of Advanced General Dentistry students. UMSOD does not foresee funding changes and anticipates the ongoing intention of funding provided as described in the MOU between USM, USG, and UMB.

<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)	\$ 154,044	\$ 157,112	\$ 175,985	\$ 179,505	\$ 183,095
a. Number of FTE	1.1	1.1	1.2	1.2	1.2
b. Total Salary	\$ 122,160	\$ 124,593	\$ 139,560	\$ 142,351	\$ 145,198
c. Total Benefits	\$ 31,884	\$ 32,519	\$ 36,425	\$ 37,154	\$ 37,897
2. Admin Staff (b+c below)	\$ 51,261	\$ 52,286	\$ 53,332	\$ 54,399	\$ 55,487
a. Number of FTE	0.4	0.4	0.4	0.4	0.4
b. Total Salary	\$ 36,720	\$ 37,454	\$ 38,203	\$ 38,968	\$ 39,747
c. Total Benefits	\$ 14,541	\$ 14,832	\$ 15,129	\$ 15,431	\$ 15,740
3. Support Staff (b+c below)	\$0	\$0	\$0	\$0	\$0
a. Number of FTE	0	0	0	0	0
b. Total Salary	\$0	\$0	\$0	\$0	\$0
c. Total Benefits	\$0	\$0	\$0	\$0	\$0
4. Technical Support and 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	\$2,000	\$3,030	\$3,570	\$3,606	\$4,162
<b>TOTAL (Add 1-7)</b>	<b>\$ 207,305</b>	<b>\$ 212,429</b>	<b>\$ 232,888</b>	<b>\$ 237,510</b>	<b>\$ 242,744</b>

**\*Please see notes next page**

**Notes to Table 2: Program Resources**

3. Support staff needs for two week rotations will be absorbed by existing staff that will be supporting the B.S./M.S.

Clinical Dental Hygiene Leader (CDHL) Dual-Degree Program

4. Technical Support and Equipment will be provided from the MOU between USM, USG, and UMB and is an integral component of the funding. Please refer to the MOU document.

5. Please reference section J of the proposal for further information

6. USM is providing facilities at The Universities at Shady Grove Biomedical Sciences and Engineering Education (BSE) Facility and is on schedule to complete construction by May 2019. This facility will serve as the primary location for the Oral Health Sciences Certificate program two week clinical rotations. Please view link to website containing specific information regarding the facility: <https://www.shadygrove.umd.edu/news-events/BSE-education-facility>

7. Other Expenses include non-labor expenses such as maintenance and sterilization of student kits and disposable supplies

**Memorandum of Understanding  
between University System of  
Maryland (USM) and University of  
Maryland, Baltimore (UMB) and The  
Universities at Shady Grove (USG)  
December 2018**

**1. Purpose**

This Memorandum of Understanding (“MOU”) constitutes an agreement between the University System of Maryland (“USM”), University of Maryland, Baltimore (“UMB”) and the Universities at Shady Grove (“USG”) to support offering a dual degree Bachelors of Science/Master of Science degree in Clinical Dental Hygiene, and an Advanced Education Program in General Dentistry (“AEGD”) at USG and a dental community clinic. This MOU was jointly developed and includes the duties and obligations of each party and relevant resource requirements to launch and operate these programs (“the Programs”) at USG.

**2. Rationale for Proposed Programs**

The University of Maryland School of Dentistry’s (UMSOD) Clinical Dental Hygiene Leader (CDHL) program will be a unique offering at the forefront of dental hygiene education, preparing exceptional students for a dynamic oral health landscape. The two-year dual-degree program, to be housed at the Universities at Shady Grove (USG), will enable students to obtain both a bachelor of science in dental hygiene and a master of science. Requiring an initial bachelor’s degree for admission (in addition to prerequisites), the program is geared toward students with a science background who have decided to specialize in dental hygiene and/or those who want a primary role in facilitating and responding to change in the oral health field. As a UMB school, the UMSOD and by extension, the CDHL program adheres strongly to, and emphasizes the value inherent in, UMB’s mission, which is: To improve the human condition and serve the public good of Maryland and society at-large through education, research, clinical care, and service. The CDHL program will further that mission, providing not only an innovative and first-of-its-kind dual-degree program that leads the way in oral health education, but a large clinical component serving not only the Shady Grove region, but the state and mid-Atlantic region as a whole. This workforce model is consistent with goals (“Aims for Improvement”) outlined in the 2001 report by the Institute of medicine to promote a more effective, efficient, equitable, and patient-centered health care system. Since prevention is a key component of the collaborative model, long-term costs for health care could decline if extensive curative measures could be curtailed. This dual-degree workforce can help resolve significant unmet oral health needs in citizens of Montgomery County and Maryland. It is expected that dual-degree professionals will meet with high employability in a variety of health care settings.

The AEGD Program, a one-year post-graduate dental education program, is accredited by the Commission on Dental accreditation (“CODA”) and awards a certificate upon completion. The program builds on the understanding that oral health is an integral and interactive part of overall health. It is designed to expand the scope and depth of dental knowledge and skills necessary to provide comprehensive oral health care to a wide range of population groups, as well as to function effectively and efficiently in multiple health care environments within interdisciplinary health care teams. This program will allow for a highly integrative model of interprofessional education, engaging students in dentistry, dental hygiene, nursing, and pharmacy. The program in general dentistry also

offers a unique opportunity for students to partner with surrounding hospitals in care delivery. Pilot programs in several states have demonstrated the effectiveness of this type of Emergency Department (ED) program, targeting patients who present to an ED with an oral health related complaint. Diverting patients from EDs also has the benefit of reducing costs to hospitals and taxpayers.

AEGD programs must provide clinical training to ensure upon completion of training, that residents are able to assess, diagnose and plan for the provision of multidisciplinary oral health care for a wide variety of patients, including patients with special needs. It is anticipated that the dental clinic at USG will need to be operational for 24-36 months to determine treatment needs of the community receiving care at USG. If the treatment needs do not support accreditation requirements for an AEGD program, then UMSOD residents in the AEGD program will be assigned primary rotations at USG. Regardless, AEGD residents will actively participate in inter-professional initiatives and experiential learning opportunities with other programs at USG.

In addition to the CDHL and AEGD programs, the dental students and dental hygiene students from the UMSOD will rotate to the clinical facility at USG. In an effort to enhance the dental and dental hygiene students’ clinical experiences in a community-based setting, UMSOD will partner with the dental clinic to meet the ever increasing demands for access to dental care and to provide graduates with varied practice experiences including providing care in a community setting to un-insured and under-insured patients.

### **3. USM’s General Funding Principles for Support of New or Expanded High-Cost Programs at USG**

The USM, in concert with USG and its institutional partners, has developed a set of guiding principles to help establish a general framework by which new, high-cost programs, or expansion of current programs, being proposed for USG can be successfully mounted and sustained to the mutual benefit of the participating institutions and USG (and the citizens and businesses in Montgomery County served by them). This framework is used when the financial and operational model(s) by which USM institutions have traditionally developed and implemented programs at USG cannot adequately support the development or expansion of key programs, such as high-cost, resource-intensive programs in engineering, technology, and the life/health care sciences.

These principles include:

- The cost of establishing and operating programs will be shared between USG and the institutions.
- Costs will be apportioned according to the details of MOUs to be negotiated between USG and the individual institutions.
- Each MOU will include (or authorize the development of) appropriate performance metrics, negotiated and agreed upon by both the participating institutions and USG, which will be used to help assess the program's progress, effectiveness, and viability.

To provide the financial and operational stability institutions need to plan and build successful programs—and to allow USG to maximize the resources available to it in support of its mission—the MOUs should specify a guaranteed period of funding for each program that will continue on a rolling basis so long as each program meets the terms and conditions agreed upon by the institutions and USG. In the event that any program funded through the MOU process is required to cease operations at USG, both the institution and USG will work together to plan and implement an orderly and effective phase out of the program, including completion of all teach-out requirements and the transition of faculty as needed and appropriate per the requirements of state, Regent, and accreditor policies.

- Faculty staffing and workload decisions/requirements related to programs operating within the BSE will remain the sole responsibility of the home institution. Both the USG and the USM recognize that campuses require flexibility in how they holistically structure, administer and support their programs both on campus and at the regional centers if they are to be successful long term. However, an underlying principle of the MOUs is that funding supplied by USG or USM to the institutions to cover “gap costs” -- those ongoing structural deficits associated with operating high cost programs that cannot be recouped through the revenue models traditionally employed by campuses in support of their operations at USM's regional centers -- should go primarily to build and support the educational quality of the programs and instruction being offered.
- Institutions and USG are expected to work together to identify and achieve efficiencies in academic programs and support services as appropriate and practice these general principles.

It is the determination of the USM and USG that based on the information provided, the Programs meet the definition of high-cost programs envisioned under this framework.

Therefore the principles outlined above have been used to develop this MOU, which outlines the financial and operational expectations/requirements for the deployment and operation of the Programs at USG.

#### **4. Financial and Operational Expectations/Requirements for the Programs at USG**

##### 4.1 Funding

Funding for the Programs under the five years of operation covered by this MOU will come from a variety of sources, including: tuition and fee revenue generated by students enrolled in the program at USG, dental clinic revenue, and FY 2019 enhancement funding provided by the USM and USG to UMSOD for the support of the Programs. A breakdown of the revenue and expenses (including those tied to instruction, support, supplies and equipment, marketing, and space) is provided in the attached schedule developed by UMSOD. The enrollment projections from which these revenue/expense estimates are derived are included as well.

The revenue/expense data provided by UMSOD for FY 19 (year one) through FY 23 (year five) can be broken down into three parts:

- Projected tuition and fee revenue that will be generated by enrollment within the Programs at USG;
- Projected dental clinic revenue;

Program expenses that will be covered by using tuition and fee revenue and dental clinic revenue. These expenses are split between both instructional personnel costs (faculty, staff, residents) and operating expenses and will be covered by UMSOD using tuition and clinic revenues (this category includes the administrative indirect charge applied by UMB); Importantly, it is the expectation of USM and USG—based on agreements made with the UMB leadership—that any tuition revenue generated from the Programs at USG that exceeds the expenses identified in section 2 of the schedule shall be used by UMSOD to reinvest in programming at USG either through new programs, enhanced capacity of existing programs, or other improvements.

For a breakdown by year of the amount of funding committed by USM/USG to the Programs, see the attached schedule.

- As supplement to all tuition and fee revenue generated by the expanded enrollment, the USM will provide additional funds to UMSOD to help cover the projected gap through the FY 23 period. After that point, progress under the program, including revenue and expenses, will be reviewed by all parties and a new and/or revised MOU negotiated as appropriate.
- USM will provide the amount shown in the attached schedule for five years, beginning in FY 19, to develop and deliver the UMSOD program at Shady Grove. Should the program be terminated prior to the end of the five-year period,



- payments will cease at the end of the fiscal year in which the program is discontinued. Should gap funding be terminated prior to the 5<sup>th</sup> fiscal year, the program will be discontinued.
- Should USG's state appropriation to support the delivery of the UMSOD program be reduced during this five-year period, hindering USM and USG's ability to transfer these funds, progress will be reviewed and the budget will be renegotiated.
  - Should enrollments grow substantially beyond those projected, such that additional course sections must be offered to accommodate the program growth, the parties agree to review and renegotiate the amount of gap funding necessary to deliver the program.
  - It is expected that gap funding will continue, with review on a rolling bases as outlined in section 4.3, as long as the program continues to operate successfully.
  - Total programmatic costs were knowingly understated in the initial proposal since the true costs of space maintenance (e.g. classroom, offices, lab, and clinic charges) and equipment replacement could not be known at that time. UMSOD and USG will capture this information in the first 3 years of operation.
  - A reconciliation of financial needs will be undertaken by all parties at end of year 3 to assure adequacy of funding to support the program through start-up period due to uncertainty of clinic revenues expected to be generated at USG as well as costs related to maintenance of facilities/equipment, facilities fees and equipment replacement cost. Review will include UMSOD, USG, and USM. Revision of programmatic funding will be necessary.

After the initial five years of operation (beginning with FY 24), the USM commits to ensuring sufficient funds are available to support the Programs, including the faculty expenses USM/USG have agreed to cover in the paragraph above, per the terms of the duties, obligations, and performance expectations set forth below.

#### 4.2 Enrollment and Graduate Production

In return for the funding support outlined above, UMSOD is expected to:

- Successfully plan and implement the UMSOD programs in line with the proposal put forward to USM and USG (attached) and the terms and conditions of this MOU.
- Enroll at least 26 students in the UMSOD programs at USG by Fall 2020.
- By Fall 2023, aim to enroll and retain at least 45 students at USG annually, and produce at least 40 SOD graduates per year.

#### 4.3. Funding Start Date, Transfer to USG, and Program Review and Evaluation Requirements

Initial transfer of funds from USM/USG to UMSOD, per the terms of this MOU and the schedule provided, is expected to occur in FY 19. This will allow UMSOD to begin needed hiring under the Programs prior to accepting enrollment.

This agreement becomes effective upon signature by authorized representatives of UMB, USG and USM. It remains in effect unless modified or terminated in writing by executives from all three parties. This MOU may be modified only by mutual written agreement of all parties, subject to final approval by the Chancellor.

#### **5. Other Key Duties and Obligations Under the MOU**

UMSOD will:

- Share data and information necessary to plan, develop, and operate the program and ensure its success. This includes data and information related to the SOD pathway (e.g., curriculum changes), including recruitment/acceptance of students (e.g., number of qualified applications, waitlist, acceptance rates), program enrollments and projections, retention and graduation rates, market demand and career pathways for graduates of the program, and other metrics as deemed appropriate by mutual consent. These metrics as well as a milestone schedule are articulated in a separate addendum.
- Share data and information required by USG to maintain campus-wide safety and security as well as the provision of student and academic services as identified in the current slate of student services provided by USG.
- Meet with USG annually to review and discuss progress under the program and any additional challenges/opportunities that the program has encountered. This will include reviewing progress toward enrollment projections, any challenges/opportunities that the program has encountered and other agreed upon metrics (e.g., demand for the program, degree outputs).
- This “informal” status review would be separate from the more comprehensive 5-year review articulated in section 4.3.
- Meet with USG and USM at the end of year 3 for financial review (as indicated in section 4.1).
- Partner with USG on mutually beneficial development efforts to support the program including grant and scholarship funding opportunities as they may arise to enhance and support the UMSOD programs and its students.

- Recruit, hire and manage faculty and staff for the program at USG. Staff hired to support the facilities and IT at USG the (e.g., lab technicians, managers, IT support) will work in partnership with USG to effectively manage and optimize the use of these resources.
- Honor all previously executed or subsequently executed agreements with USG including agreements on: counseling services, the delivery of student and academic services, support for students with disabilities, student information and data sharing.
- Partner with USG to identify and achieve efficiencies in academic programs and support services as appropriate and practice these general principles.
- Encourage the development of entrepreneurial and innovation co-curricular initiatives.
  - Actively encourage faculty, students and staff to participate in inter-professional initiatives, course sharing, curriculum and experiential opportunities with other programs at USG.
  - UMSOD recognizes that the specialized equipment under its control maybe part of these collaborative activities.
  - Adhere to the current funding policy and fee schedule for all programs at USG including auxiliary student fees, technology fees and parking fees for students, faculty and staff.
  - Will be responsible for supplying the disposables used in delivering the curriculum for these SOD programs as is current standard practice at USG.
  - Will be responsible for maintaining the specialized and technical program equipment as outlined in the USG Operational addendum.
  - Will be responsible for purchasing supplies and gases moving forward utilizing SOD expertise and knowledge.
  - Will be responsible for notifying USG when purchasing, obtaining, or installing specialized and technical equipment to ensure compliance of federal, state and university regulations
  - Will be responsible for notifying USG before constructing and moving specialized and technical equipment to ensure compliance of environmental, health and safety requirements.
  - Will be responsible for providing personal protective equipment for clinic personnel within the clinical space under the control of UMSOD.
  - Will maintain a complete inventory of all equipment and instruments for the clinical space under the control of UMSOD.
  - Will be responsible for safety, training, certifications, environmental safety,

regulatory licenses, annual reporting and medical emergencies within the clinical space under the control of UMSOD.

- Will be responsible for required periodic inspections and audits for space under the control of UMSOD.
- Continue to follow existing policy and procedures for establishing a new academic program at USG including timely MHEC filings as well as the required submittals and approvals with regard to the academic program proposal at USG according to the current submission and approval procedures.

USG will:

- Provide funding to UMSOD to offset the projected gap costs associated with developing, implementing, and operating the UMSOD programs at USG for FY 19 through FY 23 per the requirements identified in Section 4.
- Meet with UMSOD annually to review and discuss progress under the program and any additional challenges/opportunities that the program has encountered. This will include reviewing progress toward enrollment projections and other agreed upon metrics (e.g., demand for the program, degree outputs). The annual review would be separate from the more comprehensive 5-year review articulated in section 4.3.
- Meet with UMSOD and USM at the end of year 3 for financial review (as indicated in section 4.1).
- Ensure that suitable office and classroom spaces are available to the program to support its effort, under the standard conditions of approved USG space policy
- As is current standard practice, USG will purchase and maintain the equipment used by the UMSOD programs in the USG labs and classrooms.
- USG recognizes that the simulation and clinical areas are under the control of UMSOD with understanding that all specialized technical program equipment obtained by USG is owned by USG.
- Partner with UMSOD on mutually beneficial development efforts to support the program including grant funding and scholarship opportunities as they may arise to enhance the program and its students.
- Honor all previously executed or subsequently executed agreements with UMSOD including agreements on: counseling services, the delivery of student and academic services, support for students with disabilities, student information and data sharing.
- Partner with UMSOD to identify and achieve efficiencies in academic programs and support services as appropriate and practice these general principles.

- Continue to provide current funding policy and fee schedules and invoices to UMSOD that include auxiliary student fees, technology fees, facility fees, room charges and parking fees for students, faculty and staff in accordance with standard existing procedures at USG for all USG partner institutions. If the funding policy and fee schedules change and are approved during this MOU term, the revised fee schedules will be used.
- Continue to follow existing policy and procedures for establishing a new academic program at USG including the required submittals and approvals with regard to the academic program proposals.
- Will be responsible for accepting the delivery of purchased supplies and gases.
- Will be responsible for housekeeping maintenance of and medical waste removal from the clinical spaces consistent with appropriate standards of a health care facility.
- Will be responsible for providing patient parking to ensure adequate parking is available for UMSOD clients.
- Will be responsible for providing and maintaining information technology services that support the specialized technology needs provided by UMSOD.

USM will:

- Provide the enhancement funds requested by USG for the Programs beginning in FY 19 and continuing through FY 23, as identified in Section 4 above.
- Work with USG to solve any funding needs that may require modification in the FY19-FY23 period.
- For the period that begins in FY 24, work with USG and UMB to ensure the continued adequacy of funds to cover the costs of the Programs as identified and agreed upon by the three parties.

## **6. Program Contacts**

UMB and USG designate the following individuals as those with the responsibility of coordinating the MOU implementation in general terms:

- **UMB:** Br. Bruce Jarrell, Chief Academic & Research Officer, Dr. Mark Reynolds, Dean School of Dentistry, Dr. David George, Chief of Staff, School of Dentistry
- **USG:** Dr. Stewart Edelstein, USG Executive Director and Associate Vice Chancellor for Academic and Student Affairs, USM, Mary Lang, Chief Strategy Officer, Ms. Nico Washington, Chief Operating and Financial Officer

- USM: Ms. Ellen Herbst, Chief Operating Officer and Vice Chancellor for Administration and Finance, Dr. Joann Boughman, Senior Vice Chancellor for Academic and Student Affairs

**7. Date and Signatures of MOU and Authority to Execute**

This MOU shall be effective upon the date of the final signature by the authorized representatives of the parties. The undersigned individuals represent and warrant that they are expressly and duly authorized by their respective institutions to execute the MOU.

**8. Required Signatures**

The parties identified below agree to the provisions and terms of this MOU. **APPROVED:**

\_\_\_\_\_  
Dr. Bruce Jarrell, Ph.D                      Date  
Chief Academic & Research Officer  
University of Maryland, Baltimore

\_\_\_\_\_  
Stewart Edelstein, Ph.D                      Date  
Executive Director  
The Universities at Shady Grove  
Associate Vice Chancellor for  
Academic Affairs University System  
of Maryland

\_\_\_\_\_  
Dr. Mark Reynolds                      Date  
Dean, School of  
Dentistry University of  
Maryland, Baltimore

\_\_\_\_\_  
Ellen Herbst                      Date  
Chief Operating Officer  
Vice Chancellor for  
Administration & Finance  
University System of Maryland

\_\_\_\_\_  
Dr. Joann Boughman                      Date



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Senior Vice Chancellor for Academic &  
Student Affairs University System of  
Maryland