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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.

- ○ 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 | Payment Type: ◉ R*STARS ○ Check | Payment Amount: 250.00 | Date Submitted: 7/2/2018

Department Proposing Program	UMB Graduate School	
Degree Level and Degree Type	Master of Science (M.S.)	
Title of Proposed Program	A.o.C. in Global Health Innovation	
Total Number of Credits	13	
Suggested Codes	HEGIS: 1214.11	CIP:
Program Modality	○ On-campus ○ Distance Education (*fully online*) ◉ Both	
Program Resources	○ Using Existing Resources ○ Requiring New Resources	
Projected Implementation Date	◉ Fall ○ Spring ○ Summer	Year: 2019
Provide Link to Most Recent Academic Catalog	URL:	
Preferred Contact for this Proposal	Name:	
	Title:	
	Phone:	
	Email:	
President/Chief Executive	Type Name:	
	Signature:	Date:
	Date of Approval/Endorsement by Governing Board:	

Revised 11/2018

UNIVERSITY OF MARYLAND, BALTIMORE (UMB) GRADUATE SCHOOL
Proposal to Add a New Area of Concentration (AOC) to the Master of Science in Health and Social Innovation (MSHSI) Program Called the Global Health Innovation AOC

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A. Centrality to institutional mission statement and planning priorities:

1. Program description and alignment with mission

The University of Maryland Graduate School is pleased to submit a proposal to add an area of concentration (AOC) to the Master of Science in Health and Social Innovation (MSHSI) program that the School will implement in Fall 2019. The new AOC is called Global Health Innovation and is comprised of 13 credits of new curriculum, seven online credits and a six credit semester-long practicum that will take place in Costa Rica. Enrolled students will complete the online portion of the AOC synchronously with the practicum component in Costa Rica. The proposed 13 credit AOC is designed to be completed in a single semester. This proposed AOC in the MSHSI will also be a new AOC in the P.B.C. in Global Health Systems and Innovation via a separate application to MHEC.

The proposed AOC is designed to create an opportunity for students to explore principles of complexity science, frugal innovation, reverse innovation, global health, and community engagement to solve complex health challenges. The particular focus of the AOC is the growing understanding that providing access to quality, affordable health care for future generations will depend on sharing innovations and best practices across international borders. Given the ever increasing costs of health care, the reverse and frugal innovation movements seek to identify and import promising innovations developed out of necessity in resource-limited settings into high-cost systems to improve access to health care. A critical theme running through the program is the way frugal innovation can improve health care services for vulnerable and poor populations. After the program, students will be equipped to examine and impact innovation within existing organizations, and understand how change can be realized by examining policy and regulations. Our students will learn a wide range of skills that will allow them to be innovative leaders, making a difference that will positively influence many generations to come.

The University of Maryland Baltimore (UMB) has a robust constellation of international research, education, and service initiatives that make it a natural home for innovation in global health which requires access to scientists, entrepreneurs and engaged community members whose early participation in the innovation pipeline is critical to its success. The University of Maryland School of Medicine has a grants and contracts portfolio of $447.1 million, much of which was awarded to the global health-focused Institute for Human Virology (70 faculty members) and Center for Vaccine Development and Global Health (30 faculty physicians and scientists). The University of Maryland School of Nursing offers a 12-credit Global Health Certificate Program open to all students on campus and the UMB Graduate School offers a 12-credit Certificate in Global Health Systems and Innovation program (which we proposed to modify, herein). The University of Maryland School of Social Work has an International Field Placement Program that works with a number of international partners that host social work students in international settings and the School of Law has an International Law Program and several international law placements. At the campus level, the UMB Center for Global Initiatives supports the international education efforts of the individual schools and develops interprofessional education experiences in international settings for faculty and students from all UMB schools and

programs. The Global Health Innovation AOC builds on the strengths of our existing international programs, experience working with international partners, and scholarly expertise and fits well in the continuum of international programs offered at UMB.

Using an interdisciplinary approach with a practicum in Costa Rica, the proposed AOC in the MSHSI will look at a variety of economic, technical, political and other systemic factors that pull innovation forward, that push it from behind, and often block its successful implementation and scaling. Grounded in concepts in global health, innovation, complexity science, social determinants of health, health care disparities, community engagement, and product development, students will apply real world experiences and case studies to examine the ways promising ideas often confront a constellation of barriers that prevent the idea from advancing from research to dissemination to implementation. Students will also examine the root causes for these challenges. Students will focus on global health innovations and methodologies that have overcome these barriers, where both simple and complex innovations reach literally millions or even billions of lives.

The learning experience will involve a combination of online and in person lectures, case studies, service work, and a culminating group project through which our students will demonstrate their ability to identify an intervention in Costa Rica and conduct a case study to evaluate the process that led to the innovation, the iteration cycles to reach impact, and the product/initiative's potential scalability prospects to the US and anticipated barriers and potential solutions.

Courses will be taught online by University of Maryland Graduate School full-time faculty (7 credits) and the practicum in Costa Rica will be taught by adjunct faculty in Costa Rica (6-credits) associated with our partner, the InterAmerican Center for Global Health (CISG). CISG faculty teaching the practicum in the program will receive faculty appointments at the UMB graduate school.

The Global Health Innovation AOC has a set curriculum, requiring students to enroll in 13-credit hours of coursework over one semester. Enrolled students will complete the online portion of the AOC synchronously with the practicum component in Costa Rica. All courses and grades will appear on students' UMB transcript and are factored into their GPA. Students will conduct their practicum in Costa Rica with CISG focusing on the historical political, and cultural context of the region, and will be guided by expert in-country adjunct faculty in the spirit of problem-based service learning. Students will be exposed to Costa Rican organizations working towards social justice, health improvement, and/or sustainability issues. At the same time, students will progress through an online curriculum with Graduate School faculty based in the United States. The online curriculum will align with students' field work, promulgate theoretical perspectives, assess learning, connect learning back to local issues in Baltimore, and provide an opportunity for the Graduate School's full-time faculty to continue to provide support and oversight to students studying abroad.

The proposed AOC is consistent with the mission of UMB. UMB is the state's first public academic health and law university devoted to excellence in professional and graduate education, research, public service and patient care. UMB is committed to ensuring that the knowledge we generate through our degree programs will provide maximum benefit to society. Through this new AOC in the MSHSI, we will continue to focus on our mission while providing our students with the tools to make a positive impact on communities in the Baltimore area and beyond.

The new AOC is designed for students with related work experience in health care, tech transfer, technology, science, basic and translational biomedical research, journalism, social work, community engagement, city planning, and those who have worked in government, private, and non-profit organizations. The proposed AOC will emphasize concepts, practices and skills that professionals need to be effective in a wide range of organizations.

2. Alignment with institutional strategic goals

The Global Health Innovation AOC is fully consistent with the mission of the University of Maryland Graduate School and the University of Maryland, Baltimore. In particular, this proposal aligns strongly with two of UMB's strategic objectives on "health, justice, and social impact" and "student success." The UMB strategic plan reads as follows:

> 1) *Health, Justice, and Social Impact*: Deepen and expand local and global engagement by providing health, legal, and social work programs, and engaging in research to promote social justice and improve health, including the following strategic outcomes:
>
> - A focused leveraging of institutional expertise and knowledge to tackle systemic problems impacting local and global communities.
> - A demonstrated commitment by leadership at every level of the institution that positions UMB as an anchor institution at the forefront of finding solutions to local and global health disparities and social injustices.
> - A University environment that encourages the use of evidence to measure and document the impact of UMB's health, legal, and social work programs.
> - A University culture that values and rewards its faculty, staff, and students for achievements in local and global community engagement.
>
> 2) *Student Success*: Design contemporary teaching and learning environments that are accessible and affordable to prepare students to be exemplary professionals and leaders in society, including the following strategic outcomes:
>
> - Experiential learning opportunities that allow a greater number of students to integrate their education with activities promoting leadership and advocacy skills.
> - Policies and practices that encourage and support innovation and experimentation with emerging approaches to teaching and learning.

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

The new AOC are completely aligned with the 2017-2021 Maryland Higher Education Commission State Plan for Postsecondary Education, *Increasing Student Success with Less Debt* which notes that Maryland is "the most innovative state in the nation" The program closely tracks the Innovation section of the State Plan, particularly Strategy 10: "Expand support for research and research partnerships". The introduction to the Innovation section notes that innovation "can be used to solve new problems or it can used to provide new ways of solving ongoing or recurring problems." This conception of innovation is at the root of the proposed new AOC because it is designed to teach students how to identify innovations that could solve recurring problems and studying how to scale them to new markets. The State Plan also notes the value of innovation and entrepreneurship to the state of Maryland - "[i]Innovation is a driver and precursor to growth and it is critical for institutions to improve their ability to translate knowledge into action and create services and products with relevance and economic value."

Strategy 10 specifically highlights the value to students and to Maryland of innovation skills. It notes that "[i]t is important to focus innovation within the context of entrepreneurship and the incubation and acceleration of new ventures. When looking at innovation through the lens of entrepreneurship, students *should be able to develop skills that will enable them to solve problems through the lens of design thinking*." Students need to learn the concepts of innovation, implementation and dissemination so they can use their degrees, particularly in STEM fields, to bring the newest and best ideas to Maryland and adapt them for use in the state and beyond. Innovation education creates value for the state by teaching students that scientific discoveries and breakthrough interventions originate all over the globe and future prosperity lies in the ability to scale those interventions for a specific population and market. The experience in developing countries of the challenges of resource constraint in technology innovation has relevance to industrially developed countries, especially in the area of health and health care which suffers from spiraling costs that make it increasingly less affordable. Not only are there useful lessons between countries, but there is also an argument for maximizing the benefits of innovation for all people equally, given the limited funds and resources available for innovation globally. The proposed Global Health Innovation AOC will directly support the State Plan's innovation goals to ensure that Maryland not only has great scientists and research labs but also professionals who can import and implement breakthroughs regardless of where they originate.

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

The Global Health Innovation AOC will prepare students from diverse personal and professional backgrounds to organize, lead, and support effective global health practice initiatives across the globe. Depending on their individual academic profile, students will have a wide range of career options in agencies and programs providing global health services as well as in the booming tech industry in Maryland. According to the 2017 CBRE Research report "Scoring Tech Talent," Baltimore ranks eleventh as a top tech talent market based on the ability to attract and grow its

tech talent pool. Components of the scorecard in which Baltimore ranks highest include eighth in tech labor pool growth, second in gender diversity in tech occupations, and tenth in tech labor concentration. MSMHI graduates with the Global Health Innovation AOC graduates will have access to leading positions in the healthcare industry, innovation strategy and consulting, tech transfer, global health, basic and translational biomedical research, and community health, and non-profit organizations. The proposed degree program will emphasize concepts, practices and skills that professionals need to be effective in a wide range of organizations.

We have strategically aligned the new courses in the AOC to program to coincide with the current needs of employers in the industry to ensure that our graduates are well prepared for professional success.

The chart below represents the number of positions available for common job titles for people with specialized training offered in the proposed certificate programs based on information provided by www.indeed.com.

Table 1. Job Availability for Selected Careers Relevant to the Certificate

Keyword Search	Number of jobs available in Maryland	Number of jobs available nationally
Innovation Consultant	412	19,642
Global Health Data Analyst	202	3,172
Global Health Project Manager	351	12,157
Global Health Innovation	169	12,362
Global Health Strategy	450	16,285
Healthcare Dissemination	98	1,869
Health Tech Transfer	187	7,742
Data collected February 18, 2018 from indeed.com		

A 2015 survey in the Journal of Global Health on "Career opportunities in global health: a snapshot of the current employment landscape," (Eichbaum et al) found that 67% of jobs in global health are in non–governmental organizations (NGOs) in both developed countries and lower and middle income countries. When combined with multinational organizations such as the World Health Organization and the World Bank, the two employer types accounted for 89% of job openings. 84% of the positions were program–related. Program–related jobs included planning, program direction, finance, management and other supportive functions. The new AOC will add an innovative approach to planning and program direction which is critical to the long-term success of global health organizations and global health generally.

D. Reasonableness of program duplication:

The Global Health Innovation AOC is unique in its focus in the state of Maryland as it provides a credit-bearing full semester experience of study abroad in Costa Rica centered in global health innovation. Enrolled students will complete the online portion of the AOC while they are completing their semester-long practicum in Costa Rica. The proposed program is distinct from the University of Maryland College Park (UMCP) School of Public Health P.B.C. in Global Health. The UMCP Certificate provides a broad overview of global health through a series of courses that take one year to complete. The majority of courses are offered in the evening or as hybrid courses, with the opportunity to take courses at the Independent University, Bangladesh and Cairo University through virtual global classrooms.

UMB's Global Innovation AOC is narrowly focused on innovation in global health and takes place in Costa Rica during the course of a single semester with 6 practicum credits and 7 credits online with full-time Graduate School faculty. The UMB and UMCP programs are not duplicative. In fact, someone who obtains the UMCP P.B.C. in Global Health may want to follow up with the Global Health Innovation AOC as a certificate through the Global Health Systems and Innovation P.B.C. or as part of the MSHSI in order to add an international experience to their educational preparation. The proposed AOC is also distinct from the Johns Hopkins University P.B.C. in Global Health Practice in both content and approach. The 25-credit JHU Certificate is a fully online program that provides students with an overview of the basic components of global or international health and a focus on epidemiology with no international immersion experience.

E. Relevance to high-demand programs at Historically Black Institutions (HBIs)
The University of Maryland, Baltimore proposed study abroad AOC in Global Health Innovation does not replicate nor have relevance to any high-demand programs at HBIs in Maryland.

F. Relevance to the identity of Historically Black Institutions (HBIs)
This proposed AOC does not have relevance to the uniqueness and/or institutional identities and missions of HBIs.

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

1. List of courses in the program

The proposed AOC would add the following new elective curriculum to the MSHSI.

- Global Health Innovation Pre- and Post-Survey (1 credit, online)
- Spanish and interculturality (1 credit online, 1 credit in-person)
- Global Health and Social Innovation (1 credit online, 1 credit in person)
- Health Systems: Innovations for Universal Health Care (1 credit online, 1 credit in person)
- Urban Health and Social Innovation Lab (1 credit online, 1 credit in-person)
- Global Health Innovation Practicum (2 credits online, 2 credits in person)

The sample plan of study (Appendix C) and course descriptions (Appendix D) are included in appendices.

Students pursing the MSHSI are required to take 24 credits of core curriculum and can pursue one of four AOCs (the fourth being the proposed AOC in Global Health Innovation). The AOCs in the MSHSI are:

1. Health Science
2. User Experience
3. Biomedical Entrepreneurship

4. Global Health Innovation (pursuant to this proposal)

2. Describe the educational objectives and intended student learning outcomes

The Global Health Innovation AOC is designed for post-baccalaureate individuals who work in the areas of healthcare delivery or administration, health law or policy, tech transfer or bioengineering to enhance their careers by developing an understanding of, and a competency in, the concepts of global health innovation. It will provide students with an ability to identify innovations in health care, insights into understanding how to effectively develop, evaluate, and scale innovative ventures in healthcare with a focus on the needs of vulnerable populations and health care inequities. Upon completion of the MSHSI with a Global Health Innovation AOC, graduates will have a broader, global vision of how health care and public health are delivered in different settings and a critical understanding of the steps necessary to transfer an innovative intervention from one setting to another. This body of knowledge will benefit any organization interested in new approaches to health care.

The dual substantive themes of health equity and innovation science are the core of the proposed AOC. In addition, they identified the necessity for ethical community engagement, a focus on health care disparities, and the protection of human rights/human dignity/ethics as guiding principles and themes that should run through the curriculum. Other goals include developing a culminating exercise that would require students to conceptualize the transfer of a health care innovation across borders, guided by a recognized need for community input and empowerment and opportunities for students to develop cultural sensitivity, humility, and business ethics while supporting their desire to make an impact.

The program outcomes were designed to align the institutional mission, vision, and core values and included six program topic areas important in the Global Health Innovation AOC:

1. Recognize there is a global distribution of disease and health inequity that is inextricably linked to human rights in high, middle and low income countries.
2. Teach the science of innovation and scalability to address global health challenges.
3. Recognize complex adaptable systems and the challenges they bring to innovation and problem solving.
4. Foster responsible social and healthcare innovation through consideration of social determinants of health (social, environmental, and political) that create local and global health challenges.
5. Identify global health governance and business processes and systems that impact global health outcomes
6. Develop language literacy through immersion.

Course learning outcomes and course descriptions are the same for every section of the course. The learning outcomes for each course are the foundation of the course; the learning activities, assessments and content of the course are in alignment with the outcomes and provide a clear pathway for mastery of the outcomes.

At the conclusion of the Global Health Innovation AOC students will demonstrate their achievement of the outcomes listed above by:

1. Identifying a global health challenge and describing the process (including opportunities and barriers) of working with community partners and other stakeholders (e.g. private sector, government institutions, and academia) to define and design a solution to the issues related to the challenge.
2. Applying and developing innovation and entrepreneurial models and processes to resolve challenges and advance global health.
3. Demonstrating the capacity to make ethical and responsible decisions that benefit individuals, communities and other stakeholders.
4. Engaging more deeply in practical issues in global health and development, and appreciating the challenges, opportunities and satisfaction attendant to work in this dynamic sector.
5. Documenting personal growth and enrichment through active reflection.
6. Improving foreign language proficiency.

The Centro Interamericano de Salud Global (Interamerican Center for Global Health or CISG), our partner in Costa Rica that will support the six-credit practicum, has deep expertise in developing innovative training strategies for future global health leaders to teach them how to create ethical, sustainable, and just solutions to current and future global and local health issues. CISG is an organization "serving as an academic interface to create ethical and transformative global health educational programming." CISG also provides a platform for students, researchers, and global health practitioners to come together and collaborate with local organizations and communities in the southern region of Costa Rica. The focus of CISG's approach to development is focused on education of the region and culture with an emphasis on experiential hands on education. The goal of this AOC is to be among the most highly sought-after multidisciplinary, integrative and engaged learning experiences available to students interested in developing innovative, effective, sensitive, and effective global health practice. CISG's program priorities align closely with those of UMB in terms of ethical engagement with communities and a focus on sustainable innovations.

Costa Rica is the perfect location for the practicum portion of the proposed AOC. Costa Rica is unique in its non-violent history, immense biodiversity, and welcoming culture. It is also a center for innovation – especially in the areas in health care delivery and biotechnology. Over 250 high-tech manufacturing companies, more than 60 of which are medical device producers are based in Costa Rica. According to a 2014 MEDTECH report, Costa Rica has emerged as a leading location globally, outside of Europe, for biotech investment, ranking 7th globally in terms of the number of manufacturing projects ahead of the Netherlands, Brazil and Mexico, between 2008 and 2012." Costa Rica is now the second largest exporter of Medical Devices in Latin America and among the top 7 suppliers to the US market. Costa Rica has also been ranked the second-most innovative economy in Latin America. Its strengths lie primarily in business sophistication and creative outputs.

Costa Rica's health care system is widely regarded as a success story. Its single-payer national health service was created in 1941 and has demonstrated considerable institutional stability since then. Costa Ricans have near universal access to a full range of health care services, including the most technologically complex, such as heart and lung transplants, and enjoy effective protection from catastrophic health expenditures. Life expectancy exceeds that in many Organisation for Economic Co-operation and Development (OECD) member countries.

Costa Rica reformed its primary health care system in 1994 to create basic integrated health care teams. Costa Rica's innovative implementation of critical service delivery reforms support the provision of the four essential functions of primary health care: first-contact access, coordination, continuity, and comprehensiveness. As countries around the world pursue high-quality universal health coverage to attain the Sustainable Development Goals, Costa Rica's experiences provide valuable lessons about both the types of primary health care reforms needed and potential mechanisms through which these reforms can be successfully implemented. Yet, as in the United States, there is still much work to be done around health equity and human rights which makes Costa Rica a perfect place to study how foster innovation in health care delivery and technology while supporting access to high quality care for all.

The curriculum in Global Health Innovation AOC combines pre-departure training, online academic engagement and preparation, an in-country practicum, and final reflection. Students will spend approximately 15 weeks in Costa Rica during which time they will complete the online portion of the AOC and engage in the practicum experience. The practicum will introduce students to the Costa Rican health care system, public health issues, community development priorities, health care access challenges, social justice initiatives, environmental sustainability programs and other important projects aimed at protecting the most vulnerable. Students will engage with leading health practitioners through partnerships with public and private organizations, hospitals, clinics, and local cooperatives working for social justice. During this time students will also be engaged with Graduate School full-time faculty in online learning.

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

Not applicable

4. Identify any specialized accreditation or graduate certification requirements

Not applicable

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

The signed MOU with CISG is in Appendix E.

H. Adequacy of articulation

The University of Maryland Graduate School will offer this degree program in cooperation with the InterAmerican Center for Global Health (CISG) headquartered in Costa Rica.

I. Adequacy of faculty resources (as outlined in COMAR 13B.02.03.11).

UMB is committed to providing the best teaching and learning possible and to excellence in all of its courses.

Table. 1 Faculty Resources Available

Course Title	Faculty (*full-time faculty; ¥Adjunct faculty)
Global Health Innovation Pre- and Post-Survey (1 credit online)	*Bonnie Bissonette, EdD, MA
Intercultural Communication and Conflict Resolution (1 credit online)	¥Alancay Morales Garro, MLS, BSc *Bonnie Bissonette, EdD, MA
Global Health and Social Innovation (1 credit online)	¥Andres Valenciano Yamuni, Lic. MIB *Jenny Owens, Sc.D., MA
Health Systems: Innovations for Universal Health Care (2 credits online)	¥Carlos Faerron Guzmán, M.D., M.Sc. Virginia Rowthorn, J.D., LLM
Urban Health and Social Innovation Lab (2 credits online)	¥Andres Valenciano Yamuni, Lic. MIB *Virginia Rowthorn, JD, LLM
Global Health Innovation Practicum (6 credits)	¥Carlos Faerron Guzmán, MD, MSc ¥Alancay Morales Garro, MLS, BSc ¥Andres Valenciano Yamuni, Lic. MIB

UMB full-time faculty are:

- **Bonnie Bissonette, EdD, MA**
  Dr. Bissonette has been the director of the Student Center for Global Education at the University of Maryland, Baltimore since March 2012. She works to strengthen international opportunities for students at all seven schools at the University by working collaboratively with faculty and staff. Bissonette works to develop processes and procedures, appropriate safety and security mechanisms, and other logistics relevant to student international experiences. Before coming to UMB, Bissonette was the associate dean of Business and International Education at North Central Technical College in Wausau, Wis., for 10 years, and, prior to that, a U.S. foreign service officer (management), serving for 13 years at U.S. embassies in England, Madagascar, Mauritius, Eritrea, and Qatar. She served on the board of directors of NAFSA-Association of International Educators (2008-2011) and is a frequent presenter on international education leadership topics. At present, she is serving as a public member of the governing body of the Commission on English Language Program Accreditation (CEA). She received her BA at the University of St. Thomas in St. Paul, Minn.; her MA at George Washington University in Washington, D.C.; and her EdD at the University of Minnesota.

- **Virginia Rowthorn, JD, LLM**
  Professor Rowthorn is Executive Director of University of Maryland, Baltimore's Center for Global Education Initiatives and an Adjunct Professor in the Law & Health Care Program at Maryland Carey Law. In her role as Executive Director, she manages the interprofessional activities of the campus-wide center that focus on community-engaged research and service projects in international and US settings. Rowthorn was Managing Director of the Law & Health Care Program for ten years and served as Co-Director of the Center for Education Initiatives for three years prior to becoming Executive Director. She has led national workshops and written articles and book chapters on legal barriers to reverse innovation and bi-directional learning as well as on topics relating to global education such as competencies, service learning, and program development. Rowthorn is on the Board of the Consortium of Universities for Global Health and an ex officio member of the Canadian Coalition for Global Health Research. Rowthorn is the lead on the Maryland Carey Law collaboration with Chancellor College Faculty of Law in Malawi. Prior to joining Maryland Carey Law in 2006, she was an attorney in the Legislative Division of the Office of General Counsel at the U.S. Department of Health and Human Services and Associate at the law firm of DLA Piper. In addition, Rowthorn spent several years as a Legislative Assistant for the Senate Veterans Affairs Committee and two years as a health educator in the Marshall Islands as a Peace Corps volunteer. Rowthorn is an Honors graduate of the UM Carey School Law and completed her LLM in Global Health Law at Georgetown Law Center.

- **Jenny Owens, ScD, MA**

  Dr. Jenny Owens is the Faculty Executive Director of the Graduate Research Innovation District, "the Grid." Jenny is a passionate social entrepreneur with a decade of experience in higher education, seven of those years at UMB in a graduate health science and human services environment. Jenny's research interests include social innovation, academic entrepreneurship, and patient-centered healthcare design. Dr. Owens has a doctorate in Information and Interaction Design which emphasizes human-centered design and design thinking. Her master's program focused heavily on business systems, marketing, finance, and organizational behavior. These graduate degrees, along with her undergraduate foundation in principles of health, anatomy, and physiology, give her a unique background in health science, business, and design-thinking.

Key members of the CISG staff will have adjunct faculty appointments in the University of Maryland, Baltimore Graduate School. These in-country faculty include:

- **Carlos A. Faerron Guzmán, M.D., M.Sc.**
  Dr. Faerron Guzmán has a degree in Medicine and Surgery from the University of Costa Rica. He also received the degree of European Master in International Health and Development from Queen Margaret University and the Vrije Universiteit in Amsterdam.

Additional studies include Social Justice at the International Institute for Health and Development in Scotland, Global Health Delivery at Harvard University, as well as Sustainable Development and Health at EARTH University and the American University of Beirut, Lebanon. He is a Fellow of the Social Innovation for Health program of the Central American Healthcare Initiative, and INCAE Business School. He sits in the curricular committee for the Global Master's in Health and Sustainable Development at EARTH University and the American University of Beirut. He recently was chosen as a member of the Consortium of Universities for Global Health Competency Sub-Committee. He is the co-founder and director of the Inter-American Center for Global Health (CISG), as well as collaborator, consultant and adjunct professor of multiple national and international academic institutions.

- **Andres Valenciano Yamuni, Lic. M.I.B.**
  Andres is currently the Chief Strategic Officer for the InterAmerican Center for Global Health. Previously, Andres was the Executive Director of Central American Healthcare Initiative (CAHI), a non-profit working with Stanford, NYU and INCAE Business School to improve access and quality of healthcare in Central America. Before assuming his role on CAHI, Andres was the Executive Director of Fundación Acción Joven, working in education, prevention of violence, and human development with the Ministry of Education and governmental institutions in Costa Rica. Andres has worked in microfinance, social housing, and community development projects in Nicaragua, Colombia, Costa Rica, Honduras, Guatemala, Paraguay, South Africa and Nepal in partnership with the Pan American Health Organization, UN-Habitat, the European Union, the Department US State, among others. He also worked in the Poverty and MDG Unit at the United Nations Development Programme (UNDP) office in Bhutan. Andres holds an Industrial Engineering degree from the University of Costa Rica, a Masters in International Business from The Fletcher School of Law and Diplomacy and is a Complexity Scholar from the Santa Fe Institute. He is also a training officer of Gender and Masculinity at Vital Voices, Co-director of La Esquina, a social business that reduces youth violence and provides educational opportunities for at-risk youth, and a member of the Advisory Council of the State of the Nation in Costa Rica.

- **Alancay Morales Garro, MLS, BSc.**
  Alancay is currently the program and development manager for CISG. He has worked and specialized on issues related to indigenous peoples' human rights and development. He has a Bachelor's Degree in Electrical Engineering from the University of Costa Rica, and a Master of Legal Studies from the University of Arizona College Law. Before undertaking his Master's Degree, he was a Project Officer for the Forest Peoples Programme, a leading organization in work with indigenous peoples around the world; where he provided legal and technical support to indigenous peoples and organizations in various countries. Also, he worked as the course coordinator for the Greenland-based International Training Center of Indigenous Peoples.

  He has extensive advocacy experience before international institutions including the United Nations, the Organization of American States and the World Bank; and working

on the ground with indigenous peoples in the Americas, Asia, Europe, and Greenland. He was a member of the Technical Team responsible for the negotiations of the American Declaration on the Rights of Indigenous Peoples; rapporteur for the Americas for the UN World Conference on Indigenous Peoples; and, the Focal Point for Indigenous Peoples in the Americas and the Caribbean on the CSO-Network of the Global Environment Facility (GEF). He was a curator and remains a member of the World Economic Forum's Global Shapers Community.

J. Adequacy of library resources (as outlined in COMAR 13B.02.03.12).

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

The HS/HSL is one of the largest health sciences libraries in the United States with a track-record of user-centered innovative services and programs. Fifty-seven employees including 27 faculty librarians staff the library. The attractive and vibrant facility, which opened in 1998, serves as a hub for collaboration and learning with resources, programs and tools that promote discovery, creativity and innovation. With wireless connectivity throughout the building, the HS/HSL has 45 group study rooms, three computer classrooms, an Innovation Space which includes 3D printers; a presentation and practice studio, art gallery, and multiple technology-enhanced meeting spaces. Through the HS/HSL's website (www.hshsl.umaryland.edu,) the UMB community has access to a full range of resources and services.

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

In FY16, the HS/HSL licensed 116 databases, 4,524 journals, 18,018 e-books, and maintained a print collection of 360,104 volumes. One hundred percent of the current journal subscriptions 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, the National Library of Medicine's DOCLINE service, and OCLC, among others.

The HS/HSL is also home to the National Network of Libraries of Medicine/ Southeastern Atlantic Region (NNLM/SEA), whose mission is to advance the progress of medicine and improve the public health by providing all U.S. health professionals with equal access to biomedical information and improve the public's access to information to enable them to make informed decisions about their health. With only eight regions in the U.S. designated as regional medical libraries under contract to the National Library of Medicine at the National Institutes of Health, the Southeastern/Atlantic Region serves 10 southeastern states, Puerto Rico, the US Virgin Islands, and the District of Columbia. The HS/HSL has held this competitive and prestigious designation for over 30 years.

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

The Las Cruces Biological Station (LCRS) is one of three field stations owned and operated by the Organization for Tropical Studies (OTS) in Costa Rica. OTS, a close institutional partner to CISG, acquired the station in 1973, along with a substantial amount of primary forest. In 1983, UNESCO declared it part of the La Amistad International Biosphere Reserve, a protected area of more than 470,000 hectares of parklands and buffer zones extending along the mountainous central backbone of Costa Rica and Western Panama.

LCRS has experienced substantial growth in the last decade and has become a key international tropical research site. Importantly, Las Cruces is also home to the Wilson Botanical Garden, one of the most noted botanical gardens in Central America.
The station has two large classrooms, fitting for up to 45 students each. They count with moveable mobiliary, including large work tables. A single image video projector and projection screen can be found in each classroom. Ethernet and wireless (fiber optic supported) are available in both classrooms. A laboratory with basic equipment for natural sciences researchers and students is available as well as a set of legally compliant safety protocols and procedures across all of the installations.

LCRS can provide comfortable housing for 80 people across cabins, private rooms and dorm style accommodations. It also counts with a large dining hall, a fully equipped kitchen and kitchen staff that can serve the same number. LCRS also has an onsite herbarium, as well as a library.

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

No new general funds will be required for implementation of the proposed AOC which will be coordinated and administered fully through the Graduate School. Tuition also will be

administered through the Graduate School and student tuition payment is in addition to that required of any individual professional school at UMB. As shown in Appendix E, this certificate is expected to be self-supported.

M. Adequacy of provisions for evaluation of program (as outlined in COMAR 13B.02.03.15)

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

N. Consistency with the State's minority student achievement goals (as outlined in COMAR 13B.02.03.05 and in the State Plan for Postsecondary Education).

The State also has a goal of expanding educational opportunities for minority and educationally disadvantaged students.

The proposed AOC aims to address the State's cultural diversity goals. Studies consistently show that students who participate in study abroad are more likely to earn higher salaries and reach management positions. Because international experiences are becoming increasingly important to being competitive for jobs, it is important to ensure that education abroad opportunities are accessible to minority students who typically account for a small percentage of students who participate in programs with an international component. This is due to the cost of such programs and lack of knowledge about such programs among low income and first generation students. The proposed AOC will give MSHSI students an affordable opportunity to study abroad to which financial aid can be applied making it an accessible international education program. The University of Maryland Graduate School will also ensure that marketing is directed to minority students with a focus on dispelling myths about study abroad and the relative affordability of the program.

O. Relationship to low productivity programs identified by the Commission:

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

P. If proposing a distance education program, please provide evidence of the Principles of Good Practice (as outlined in COMAR 13B.02.03.22C).

Some content in the Global Health Innovation AOC will be delivered online.

Context of Online Education at UMB

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

1. *Education Pipeline*. The education pipeline is now seeing inputs at every level with a highly diverse prospective student pool. Prospective students are typically working adults who demand part-time and non-residential educational opportunities. Results of the educational experience are becoming ever more outcomes-based.

2. *Changing Demographics*. Data indicate a shift from the traditional student (the 18-22-year-old, full-time resident) to older students studying part-time.

3. *Technology Shift*. Online delivery is far outpacing traditional forms of delivery. From 2002 to 2008, online enrollments grew at an annual compound rate of 19% vs. 1.5% for all of Higher Education. By the fall of 2008, 25% (4.6 million) of all students took at least one online course. There is a growing acceptance that online education as being as good as or better than traditional face-to-face delivery models. It is estimated that by 2020, half of all learning may be online.

4. *Growth of Mobile Technologies*. Mobile technologies and miniaturization are changing the computing environment and the educational delivery paradigm. Technologies like netbooks, e-Readers, iPhones and iPads have the potential to revolutionize the delivery space and to provide anywhere, anytime learning.

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

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

Ensuring Effective Instruction

Based on Quality Matters standards, at UMB we have deployed a rubric which details the best practices for distance education; this rubric helps faculty and instructional designers develop the courses; assess the readiness of the course, and ensure that the

online courses are instructionally and pedagogically sound. The best practices are a synthesis of strategies, activities, design techniques, and organizational items that have been successful in higher education. The specific domains of this checklist are as follows:

- Course overview and introduction to the students
- Course organization and design
- Learning Objectives (competencies)
- Instructional Materials
- Learner Communication, Interaction and Collaboration
- Assessment and Evaluation (measurement)
- Course Technology
- Learner Support

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

Instructional Design Team

The following individuals from the Instructional Design team have been assigned to direct the distance education strategy for the Global Health Innovation AOC:

Mary Jo Bondy DHEd, PA-C | Assistant Dean, Academic Programs
Dr. Bondy administratively oversees three academic programs, and the office for Academic Innovation and Distance Education (AIDE). Dr. Bondy also serves as the UMB representative to the University of Maryland System Academic Transformation Advisory Council. As a practicing clinician and accomplished health educator Dr. Bondy is passionate about elevating health in underserved populations. Dr. Bondy is a recognized master teacher, education leader and innovator. She has expertise in online education policy, curricular design, and program assessment.

Kevin Engler, MA | Instructional and Curriculum Designer
Mr. Engler holds a Masters of Arts degree in Instructional Design. Mr. Engler provides instructional design, audio-visual support, and faculty training in the use of instructional technologies. He is responsible for the overall pedagogy, planning and designing of course content and assessments for distance education courses in the program. Mr. Engler is knowledgeable in adult learning theory, distance education pedagogical techniques, course development planning and process management. Mr. Engler is trained and certified in the Quality Matters methodology and the ADDIE approach to course design. He has experience and background in writing instructional objectives that utilize Bloom's Taxonomy.

Erin Hagar, MA/MFA | Instructional and Curriculum Designer

Ms. Hagar taught Spanish at the college level and has worked in instructional and curriculum design for colleges and universities since 2000. She previously worked at Montgomery Community College and Johns Hopkins University, helping faculty incorporate new pedagogical practices and technologies into their face-to-face and online courses. Her areas of expertise include faculty development and training, online course design using the Quality Matters standards, and authentic activities and assessments. She is responsible for the overall pedagogy, planning and designing of course content and assessments for distance education courses in the program.

Sharon Gillooly | Senior Media Production Specialist
Ms. Gillooly leads media production for the AIDE team. Her main focus is to produce videos that support academic instruction. After a long career in documentary television, she completed a Master's Certificate in Online Instructional Development from Florida State University where her work focused on instructional design and emerging technologies. Ms. Gillooly is especially interested in the use of media to enhance learning.

Collectively, the distance learning team will provide the following services to ensure that best pedagogical practices are used to train and support the most of effective presentation of their course content.

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

Collectively, the distance learning team will provide the following services to ensure that best pedagogical practices are used to train and support the most of effective presentation of their course content.

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- A manual for the faculty regarding principles of good practice and the pedagogy of distance education.
- Provide timely support to the faculty in the use of the technology and trouble shoot any problems that might arise during the course of instruction.
- Work with faculty to design and develop courses, monitor the delivery of the course, and assess and revise the course for future offerings.

Supporting Students in Distance Education

We realize that the key to the success of the online courses is dependent on a) students knowing upfront the assumptions, requirements and responsibilities of taking an online course, 2) the ability of students to have the background, knowledge, and technical skills to undertake

an online program; and 3) their having access to academic and technical support services to support their online activities. Accordingly, we will provide the following services to support the students in accessing distance learning technology:

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

Evaluation and Assessment of Online Courses

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

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

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

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

APPENDIX A: Approved P.B.C. in Global Health Systems and Services

MHEC
Creating a state of achievement

Larry Hogan
Governor

Boyd K. Rutherford
Lt. Governor

Anwer Hasan
Chairperson

James D. Fielder, Jr., Ph.D.
Secretary

March 28, 2016

Dr. Bruce E. Jarrell
Senior Vice President and
Chief Academic and Research Officer
University of Maryland Baltimore
620 W. Lexington Street
Baltimore, MD 21201

Dear Dr. Jarrell:

The Maryland Higher Education Commission has reviewed a request from the University of Maryland Baltimore to offer a collaborative Post-Baccalaureate Certificate (P.B.C.) in Global Health Systems and Services with the University of Maryland University College. The program will be delivered online.

I am pleased to inform you that the program proposal is approved, under the condition that the University of Maryland Baltimore provides the Commission with a fully executed Memorandum of Understanding with the University of Maryland University College. This decision is based on an analysis of the program proposal in conjunction with the law and regulations governing academic program approval, in particular Code of Maryland Regulations (COMAR) 13B.02.03. As required by COMAR, the Commission circulated the proposal to the Maryland higher education community for comment and objection. The program meets COMAR's requirements and demonstrates potential for success, an essential factor in making this decision.

For the purposes of providing enrollment and degree data to the Commission, please use the following HEGIS and CIP codes:

Program Title	Award Level	HEGIS	CIP
Global Health Systems and Services	P.B.C.	1214-00	51.2210

Should the University of Maryland Baltimore desire to make a substantial modification to the program in the future, review by the Commission will be necessary. I wish you continued success.

Sincerely,

James D. Fielder, Jr., Ph.D.
Secretary

JDF:mrw

C: Ms. Theresa Hollander, Associate Vice Chancellor for Academic Affairs, USM
Ms. Malinda Hughes, Academic Program Manager, UMB

APPENDIX B: Approved Program Title Change from P.B.C. in Global Health Systems and Services to P.B.C. in Global Health Systems and Innovation

MHEC
Creating a state of achievement

Larry Hogan
Governor

Boyd K. Rutherford
Lt. Governor

Anwar Hasan
Chairperson

James D. Fielder, Jr., Ph. D.
Secretary

August 29, 2018

Dr. Bruce E. Jarrell
Executive Vice President and Provost
Dean of the Graduate School
University of Maryland, Baltimore
220 North Arch Street, 14th Floor, President's Office
Baltimore, MD 21201

Dear Dr. Jarrell:

The Maryland Higher Education Commission reviewed a request from University of Maryland, Baltimore to change the name of the Post-Baccalaureate Certificate (P.B.C.) in Global Health Systems program to Global Health Systems and Innovation.

I am pleased to inform you that the program proposal is approved. This decision is based on an analysis of the program proposal in conjunction with the laws and regulations governing academic program approval, in particular Code of Maryland Regulation (COMAR) 13B.02.03. The program meets COMAR's requirement and demonstrates potential for success, an essential factor in making this decision.

For the purposes of providing enrollment and degree data to the Commission, please use the following HEGIS and CIP codes:

Program Title	New Program Title	Award Level	HEGIS	CIP
Global Health Systems & Services	Global Health Systems and Innovation	P.B.C.	1214.00	51.2210

I wish you continued success in your educational endeavors.

Sincerely,

Dr. James D. Fielder
Secretary

JDF:gra

C: Dr. Antoinette Coleman, Associate Vice Chancellor for Academic Affairs, USM
File: 18195

Maryland Higher Education Commission
6 N. Liberty Street • 10th Floor • Baltimore, MD 21201
T 410.767.3300 • 800.974.0203 • F 410.332.0270 • TTY for the Deaf 800.735.2258 www.mhec.maryland.gov

APPENDIX C: Plan of Study

Semester and Course Number/Title	**Credit**
Summer Year 1	
Global Health Innovation Pre- and Post-Survey Part 1 online	(1 credit deferred until completion of Part 2 in Spring Year 1)
Fall Year 1	
INNO 801: Intercultural Communication and Conflict Resolution	1 credit (online)
INNO 802: Global Health and Social Innovation	1 credit (online)
INNO 803: Health Systems: Innovations for Universal Health Care	2 credits (online)
INNO 804: Urban Health and Social Innovation Lab	2 credits (online)
INNO 805: Global Health Innovation Practicum	6 credits (online)
Spring Year 1	
Global Health Innovation Pre- and Post-Survey Part 2	1 credit (dependent of completion of Part 1 in Summer Year 1)
	Total 13 credits

APPENDIX D: Course Descriptions

INNO 800: Global Health Innovation Preparation and Reflection (1 credit)
This one-credit online course involves preparation work, in advance of the Costa Rica components of the program, as well as follow up reflection work upon return from Costa Rica. Course modules include: Introduction to global health innovation in the U.S. and Costa Rica (an overview) and ethical challenges in global health innovation (outcomes: increased awareness of ethical issues involved in short-term global health programs abroad; toolkit of strategies for dealing with these cultural issues as they arise; develop increased confidence and ability to navigate these issues; and report anticipated and actual changes in personal behavior during their coursework and training abroad). Students' cross-cultural understanding is assessed pre- and post- experience using the Intercultural Development Inventory (IDI) assessment tool. Cultural understanding training is included in the pre-experience sessions, and discussions of changes in students' IDI levels inform discussion and reflection at the conclusion of the experience. Logistics of traveling internationally as a UMB student will also be covered (travel insurance, airline ticket purchase, code of conduct, safety and security resources, immunizations and health preparation, as well as other relevant details).

INNO 801: Intercultural Communication and Conflict Resolution (1 credit)
Intercultural Communication and Conflict Resolution is a growing area of importance considering the pace and volume of global transactions. The ease of global communication using technology, the abundance of cheaper transportation costs, and the frequency of businesses using cross-border talent is fostering millions of interactions a day between people of different cultures. In this online course, students will examine how the process of communication can be further complicated during interactions between people of different cultures. The topics of stereotypes, generalizations, communication styles, communication strategies, and communication orientations will be explored.

INNO 802: Global Health and Social Innovations (2 credits)
There is a need to challenge the *status quo* in global health theory and practice. In a world in which complex challenges are ever emerging, there is a growing demand for new system-wide approaches. New knowledge and technologies are a gateway of opportunities for innovation. This course will introduce students to the concepts, theory, and practice of complexity science. It will allow students to approach global health as a complex adaptive system and understand how this is useful to solve some of the most challenging issues faced by practitioners when trying to create lasting social change in a effective and ethical way.

Through online-delivered lectures, case-based learning, and online discussions, students will learn to understand the nature of complex global health issues and how can they better identify potential avenues to generate social innovations and system-level change. The lectures and online discussions will be co-facilitated by CISG staff and thought leaders and experts in a wide range of fields, including economics, business, public health, social entrepreneurship, political economy, ethics, gender, sustainability, and sociology.

By participating in this course, students will acquire knowledge, practical tools, and experiences to approach global health through a "complexity lens," learn about the challenges and opportunities for change agents and systems entrepreneurs in the field, and better prepare them to become global health leaders.

INNO 803: Health Systems: Innovations for Universal Health Care (2 credits)
With the sustainable development agenda well on its way, a detailed examination of modern health systems and their multi-layered structures is needed to achieve the goals set out by the United Nations' Sustainable Development Goals (SDG) agenda. This course will provide students an introduction to health systems and how the historical, cultural, political and economic context impacts their funding, design and performance. The students will acquire the knowledge and skills to think critically on how health systems operate in middle and low-income countries and how to address the particular determinants of health of these settings.

Special emphasis will be given to the case of Costa Rica and how it developed its social security system and one of the most effective primary health care systems in the world. Focus points will be on innovations for equity in health access, healthier communities through health promotion and the use of IT in health care. The students will participate in online discussions with an interdisciplinary faculty and with policymakers involved in the design and development of the health system in Costa Rica.

INNO 804: Urban Health and Social Innovation Lab (2 credits)
The year 2009 marked the year in which for the first time in the Earth's history more people lived in urban settings than in rural settings. It is estimated that by 2050, two-thirds of the world's population will live in an urban environment. This course brings an interdisciplinary approach to provide students the knowledge and skills to address the global health challenges in rapid urbanizing regions of middle and low-income countries. Urban areas present particular health risk factors and complex interactions of issues such as climate change, migration, infectious and chronic diseases, and mental health, which requires practitioners to develop cross-sector collaborations and innovative approaches to public policy.

The course will allow students to understand how the social gradient affects populations in urban settings and how to develop health-related interventions that are sensible to the human rights, social and gender disparities in such environments.

Students will have the opportunity to learn from representatives of local governments and non-governmental organizations on how projects to improve urban health indicators are designed, executed and evaluated.

INNO 805: Global Health and Social Innovation Practicum (6 credits)
This course provides students the opportunity to integrate theory and practice to address real-world challenges faced by policymakers and communities looking to create lasting change in the global health area. It will provide students the possibility to engage and support public, private and non-governmental organizations to solve complex issues related to global health in Costa

Rica, a developing country with unique demographic, epidemiological and urbanization conditions.

The first component of the practicum fill focus on Spanish language training. Spanish is one of the most spoken languages around the world and the most popular second language learned in the United States. There are more than 430 million native speakers worldwide, making the cultural, political and economic impact of Spanish of special relevance for global health professionals around the globe. This component of the practicum, offered in partnership with a local language institute, allows students to improve their language competence, to learn basic speaking Spanish for real-life situations, and experience fundamental cultural aspects of Costa Rica and other Spanish speaking societies. Through in-class discussions and oral presentations about current events, students will practice their Spanish in real the world and improve their professional competencies in interpretive communication skills; critical for those aspiring to work in an international setting.

Students will start their practicum in global health experiential learning as they arrive in San Jose, the capital of Costa Rica. San Jose is a modern city that is accessible to the rest of the country through car, bus, and air infrastructure. After an initial orientation, students will explore the foundations of social innovation, and will go through a process of cultural and language immersion.

After completing their foundational and language requirements, students will travel to the southern region of Costa Rica and will be partnered with various non-governmental organizations mainly in two locations, but not limited to, the Osa Peninsula and in the town San Vito. The Osa Peninsula is in the Puntarenas Province and is home to approximately 50% of all the diverse animal and plant species in the country, representing 3% of the world's biodiversity. San Vito is approximately 168 miles south of San Jose very near the Panama border where the focus of students' work and experiences will be among the Ngöbe-Buglé indigenous people. The Ngöbe people both migrate for the coffee harvest from Panama and have a permanent settlement referred to as La Casona. Potential partner organizations facilitated by CISG include:

- La Casona's bicultural clinic
- Houses of Joy
- Rio Sereno Border Crossing
- Hands for Health Oral Health Protection Program
- ASCONA National and Environmental Service Association
- Comprehensive development association of Rincon de Osa and Playa Blanca
- Comprehensive development association of Dos Brazos de Rio Tigre
- Las Cruces Biological Station
- Municipality of Curridabat
- Instituto Mixto de Ayuda Social (IMAS)Ca
- Municipalidad de Coto Brus
- Patronato Nacional de la Infancia
- Seprojoven

- Cen-Cinai
- Hogar de Ancianos

Students will work closely with organizations to identify promising social innovations and apply their knowledge in a group project. Working as a team they will grapple with the diverse political, cultural, and financial constraints and opportunities organizations face when they are designing and executing solutions to complex social problems.

APPENDIX E. Budget

Global Health Certificate Program Tuition & Fees Revenue Projections					
Resource Categories	**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Year 5**
1. Reallocated Funds	$ -	$ -	$ -	$ -	$ -
2. Tuition/Fee Revenue					
(c + g below)					
a. Number of F/T Students	8	10	12	14	14
b. Annual Tuition/Fee Rate	$ 12,000	$ 12,360	$ 12,731	$ 13,113	$ 13,506
c. Total F/T Revenue (a x b)	**$ 96,000**	**$ 123,600**	**$ 152,770**	**$ 183,578**	**$ 194,758**
d. Number of P/T Students					
e. Credit Hour Rate					
f. Annual credit hours per P/T student					
g. Total P/T Revenue					
(d x e x f)					

Global Health Certificate Program Revenue/Expense Projections					
Faculty Salaries and Fringes	**Year 1**	**Year 2**	**Year 3**	**Year 4**	**Year 5**
Faculty Program Director	$ 10,000	$ 10,000	$ 12,000	$ 15,000	$ 15,000
Course Development Faculty	$ 2,000	$ 1,000	$ 1,000	$ 2,000	$ 2,000
Instructional Faculty	$ 7,000	$ 7,000	$ 7,000	$ 7,000	$ 12,000
Total Faculty Salaries	$ 19,000	$ 18,000	$ 20,000	$ 24,000	$ 29,000
Total Fringe Benefits	$ 4,883	$ 4,626	$ 5,140	$ 6,168	$ 7,453
Total Faculty Salaries and Fringes	**$ 23,883**	**$ 22,626**	**$ 25,140**	**$ 30,168**	**$ 36,453**
Administrative Salaries					
Administrative Program Director					
FTE	0.05	0.10	0.10	0.10	0.10
Salaries	$ 5,000	$ 10,000	$ 10,400	$ 10,816	$ 11,140
Fringes	$ 2,050	$ 4,100	$ 4,264	$ 4,435	$ 4,568
Total Administrative Salary Costs	**$ 7,050**	**$ 14,100**	**$ 14,664**	**$ 15,251**	**$ 15,708**
Direct Operating Costs					
Other Contractual Services*	$ 72,000	$ 90,000	$ 111,240	$ 135,960	$ 139,920
Supplies & Materials	$ 300	$ 500	$ 500	$ 500	$ 500
Total Direct Operating Costs	**$ 72,300**	**$ 90,500**	**$ 111,740**	**$ 136,460**	**$ 140,420**
Total Direct Costs	**$ 103,233**	**$ 127,226**	**$ 151,544**	**$ 181,879**	**$ 192,581**
Revenues					
Tuition and Fees	$ 96,000	$ 123,600	$ 152,770	$ 183,578	$ 194,758
Academic Innovation Support	$ 7,233	$ 3,626	$ -	$ -	$ -
Other Program Support	$ -	$ -	$ -	$ -	$ -
Total Revenues	**$ 103,233**	**$ 127,226**	**$ 152,770**	**$ 183,578**	**$ 194,758**
Balance - Surplus/(Deficit)	**$ -**	**$ -**	**$ 1,226**	**$ 1,699**	**$ 2,177**
*Educational Agreement with CSIG					

APPENDIX F. MOU

Joint Collaborative Partnership Agreement

between

The University of Maryland, Graduate School, Baltimore, USA

And

The Inter-American Center for Global Health, Coto Brus, Costa Rica

This Agreement is made and entered into on the date of the final signature hereto, by and between University of Maryland, Baltimore (UMB), a public university that is part of the University System of Maryland, a public corporation and an instrumentality of the State of Maryland acting through its academic department the University of Maryland Graduate School hereinafter referred to as UMGS, and the Inter-American Center for Global Health, hereinafter referred CISG.

1. The Agreement and Nature of Collaboration

1.1. The purpose of this Joint Collaborative Partnership Agreement (referred to as the "Agreement") is to delineate the collective and individual responsibilities of UMGS and CISG in relation to the provision, management, monitoring, evaluation and development of an Area of Concentration (AOC) focused on global health innovation in the Post-Baccalaureate Certificate (PBC) in Global Health Systems and Innovation program and in the Master of Science in Health and Social Innovation (MSMHI) for UMGS students.

1.2. This agreement will commence on April 1, 2018 notwithstanding the date or dates of signature. The parties will review and evaluate the operation of all matters under this Agreement prior to the 2nd anniversary of the commencement date. Any renewal or amendment to this Agreement will be made in writing.

1.3. This agreement will be in effect for a period of five (5) years beginning with the commencement date and will be renewed for successive five year periods in writing agreed upon by the parties. Either party giving six (6) months written notice to the other party may terminate the agreement provided that such termination will not affect the

completion of any activity underway at the time or any previously advertised activity in which commitments to university students or faculty have been made.

1.4. UMGS appoints Senior Associate Dean Dr. Flavius Lilly (flilly@umaryland.edu), and CISG appoints Director Dr. Carlos Faerron (cfaerron@cisgcr.org) to coordinate the development and implementation of this agreement.

2. AOC in the Post-Baccalaureate Certificate in Global Health Systems and Innovation Program and in the Master of Science in Health and Social Innovation

2.1. Under this Agreement, for successfully completing the Global Health Innovation AOC curriculum, participating students will be awarded a PBC in Global Health Innovation granted by the University of Maryland, Baltimore or successfully complete the Global Health Innovation AOC of the MSHSI, both of which are (or will be) approved by the Maryland Higher Education Commission and the Board of Regents.

2.2. The Global Health Innovation AOC has an online component and a practicum component both of which students will complete during a single semester in residence in Costa Rica. CISG will facilitate the practicum experience focused on concepts of global health, innovation, complexity science, social determinants of health, health care disparities, community engagement, and product development.

2.3. The courses delivered in this AOC will be a combination of online and in-person experiential. Full-time UMGS faculty will deliver 7 credits of online instruction and CISG faculty who have been appointed as adjunct faculty at UMGS will deliver 6-credits of practicum in Costa Rica. By the commencement of the AOC the courses will include:

- Global Health Innovation Preparation and Reflection (1 credit)
- Intercultural Communication and Conflict Resolution (1 credit)
- Global Health and Social Innovations (1 credit)
- Health Systems: Innovations for Universal Health Care (2 credits)
- Urban Health and Social Innovation Lab (2 credits)
- Global Health and Social Innovation Practicum (6 credits)

The curriculum may be altered over time in accordance with UMGS policies and procedures. Students must earn a 3.0 grade point average or greater as a requirement for graduation.

Details of the program curriculum are contained in Appendix A.

2.4. UMGS will ensure that students have necessary travel documents and required immunization prior to travel.

2.5. CISG will facilitate the logistics of students during the Costa Rica experience, including safety and security measures; clean, safe, hospitable housing; in-country transportation;

translation services, when needed; potable drinking water or means of purification; and meals as applicable.

2.6. UMGS will facilitate health care and emergency support should it be needed through the University's Global Medical and Security Assistance program. Students will be responsible for the cost of any health or emergency care or support. Travel arrangements and cost to and from Costa Rica will be handled by the students in consultation with the Global Health Innovation program director.

2.7. UMGS students will be required to secure travel insurance prior to participation in the innovation AOC of the Global Health Systems and Innovation program.

2.8. UMGS will appoint full-time faculty for the online delivery of the AOC and at the commencement of the agreement Virginia Rowthorn, J.D., LLM, Bonnie Bissonette, EdD, MA, and Jenny Owens, ScD, MS will be the full-time faculty serving the innovation AOC.

2.9. UMGS will appoint a program director to oversee the curriculum and quality of instruction in the Global Health Innovation AOC to monitor the safety of the student experience. At the commencement of the Agreement, Virginia Rowthorn, J.D., LLM will serve in the role of Program Director.

2.9.1. The program director will constitute and chair a Collaborative Academic Administrative Committee between UMGS and CISG to develop and to manage all administrative aspects of the program and to oversee the academic aspects of the program, including the activities related to assessment and student progression issues. The Academic Administrative Committee will have representation from UMGS and CISG to facilitate the delivery of the innovation AOC. The academic administrative committee will be composed of the following positions:

- UMGS Program Director of the Global Health Innovation Certificate
- UMGS Senior Associate Dean
- UMGS Assistant Vice President of Administration and Finance
- UMGS Faculty Responsible for the Graduate Research Innovation District
- UMGS Faculty Member
- CISG Executive Director
- CISG Senior Administrator

The faculty director will meet with students remotely at least once while they are in Costa Rica. The faculty director also will serve as students' point-of-contact at UMGS and will provide them with contact information.

2.9.2. The faculty program director will be responsible for the development, coordination, maintenance of quality assurance, and student advisement. This

responsibility will be discharged in accordance with UMGS policies and procedures with input from CISG where required.

2.10. CISG members who will be instructing students will be appointed to the UMGS faculty in the rank of adjunct professor. At the commencement of the Agreement, Carlos Faerron Guzman, MD, MSc, Alancay Morales Garro, MLS, BSc, and Andres Valenciano Yamuni, Lic, MIB will join the UMGS faculty. All CISG faculty members will be fluent in written and spoken English. UMGS will ensure that faculty appointed in Costa Rica hold appropriate credentials and undergo background checks in accordance with UMGS policy.

Details of faculty resources are contained in Appendix B.

3. Tuition and Fees

3.1. All tuition and fees chargeable in respect to the AOC in Global Health Innovation will be agreed upon and recommended by the UMGS/CISG Collaborative Academic Administrative Committee, normally no later than December of the year immediately prior to intake. Both UMGS and CISG will provide detailed budgets of expected expenses for review by the Collaborative Academic Administrative Committee and the Dean of the Graduate School.

3.2. UMGS will collect tuition and fees from each student according to UMGS policy and procedure. Following receipt of tuition and fees, UMGS will disperse 77% of the revenue to CISG for in-country logistics and instruction, and will retain 23% for management, administrative, and faculty costs. All payments will be made by UMGS to CISG no later than 6 weeks following each enrollment of students.

3.3. UMGS and CISG agree that the minimum number of students per intake year will be no fewer than 10, and that tuition and fees will be assessed to each individual student for the first year of the program as described in the table below. Subsequent years of tuition and fees for the program will be provided as an addendum to the Agreement and agreed upon in writing between the parties. There is no financial obligation between UMGS and CISG given a failure to intake no fewer than 10 students.

$13,000	$3,000	$10,000

3.4. All payments and fees due will be made in U.S. dollars.

4. Student Recruitment and Admissions

4.1. UMGS and CISG must agree each year to the minimum and maximum number of students for each year's annual intake, which will normally be agreed to no later than March 1st in the semester immediately prior to intake. The Collaborative Academic

Administrative Committee will be required to approve commencement of the program in consideration of recruitment figures, and the approval of the Dean of the UMGS.

4.2. All recruitment activity, publicity and marketing of the AOC may be undertaken by UMGS. UMGS will be responsible for setting up and maintaining any website(s) established for marketing purposes.

4.3. Publicity and materials provided to prospective applicants will contain full details of the AOC, requirements for entry and program tuition and fees. The Collaborative Academic Administrative Committee will be responsible for ensuring accuracy in marketing, publicity, and other related promotional material related to the AOC.

4.4. Applications for admission will be processed by UMGS according to UMB policy and procedure.

4.5. All offers of admission will be made by UMGS in compliance with the entry requirements agreed upon by the Collaborative Academic Administrative Committee.

4.6. As part of the formal offer of admission, applicants will be informed of the arrangements relating to matriculation and payment of fees.

4.7. UMGS will be responsible for providing information or make available to students the following matters upon being admitted into the program:

- Administration of the program;
- Aims and objectives of the program;
- Methods of assessment;
- Feedback and evaluation;
- Matriculation;
- Payment of tuition and fees;
- Graduation arrangements;
- UMGS' and CISG's Codes of Discipline and potential sanctions for disciplinary violations;
- Grievance procedures;
- Academic appeals procedures;
- UMB safety and security guidelines including registration into UMB's Global Medical and Security Assistance program; and
- Other appropriate regulations, policies and procedures

5. Student Matriculation and Registration

5.1. Students will be registered/matriculated by UMGS.

5.2. UMGS will be responsible for creating and maintaining detailed student records in accordance with its normal procedures and will agree to reasonably share this information with CISG upon request. It is the student's responsibility to execute a

FERPA release to permit both programs to monitor any matter of legitimate educational interest to the participating programs.

5.3. Students will be required to notify UMGS of withdrawal from the program and/or any changes in the details supplied by them at registration/matriculation. UMSG will be responsible for reporting all such changes to CISG. In turn, CISG will report to UMGS any such changes which are reported directly to it.

6. Assessment and Examination

6.1. The Collaborative Academic Administrative Committee will oversee all assessment, examination, and progression issues related to students studying in the program.

6.2. All examinations, summative assessments and grading processes will be agreed upon by the Collaborative Academic Administration Committee.

6.3. CISG will be responsible for the transfer of all assessment grades and examination results to UMGS.

6.4. The Collaborative Academic Administration Committee will establish a mechanism whereby students' progress may be monitored and remedial action taken where appropriate.

7. Graduation

7.1. UMGS will oversee all arrangements for graduation ceremonies in accordance with its established processes and procedures. Students will be invited by UMGS to attend the appropriate graduation ceremony which will be organized in accordance with the customs, practice, and academic dress of the institution.

7.2. UMGS will be responsible for the conferment of the award as appropriate and for the production of the degree parchment for a student attaining the necessary credits for the award. Degree parchments will be in the format of UMGS and will make reference to the joint nature of the program.

7.3. UMGS will provide all graduates with a transcript of grades at the fee normally charged for this service.

8. Student Discipline, Appeals and Grievances

8.1. CISG will refer discipline cases of an academic nature, for example concerning program work or examinations to UMGS, which will process each case in accordance with its own policies and procedures. UMGS will reasonably share information relating to the outcome of any discipline hearing(s) and any decisions taken therein to CISG.

8.2. When an alleged offence of a non-academic nature is committed by a student under CISG supervision, the code of discipline of CISG will normally apply. In such cases, there will be consultation between the institutions to ensure a consistent approach to discipline offences wherever possible. Students may appeal CISG discipline to the program director.

8.3. A student who wishes to file a grievance regarding general aspects of the program will do so in accordance with complaints procedure of the UMGS, and all complaints will be reviewed, assessed and acted upon with recommendation from the collaborative academic administrative committee.

9. Data Sharing and Data Protection

9.1. Both institutions will ensure that, where data is obtained from registered and prospective students, prior FERPA consent is obtained and that those students understand that this data may be shared amongst UMGS and CISG once collected.

9.2. Each institution ensures that it will have in place technical and organizational security measures to protect relevant data from unauthorised or unlawful processing and accidental loss or damage.

10. Termination of Agreement

10.1. This Agreement may only be terminated by the mutual consent of UMGS and CISG, or by one institution giving no less than 6 months written notice in advance to the other institution

10.2. In the event of early termination of this Agreement at the instigation of any of the Institutions, adequate arrangements must be in place to support registered students who wish to continue their studies under the Program/Discipline without any detriment or disadvantage. These arrangements should be detailed in a formal letter between the institutions.

11. Miscellaneous

11.1. Neither party shall be responsible for any failure to perform or delay in performing any of its obligations under this Agreement where and to the extent that such failure nor does delay result from causes outside the reasonable control of the party. Such causes shall include, without limitation, Acts of God or of the public enemy, acts of the government in its sovereign or contractual capacity, fires, floods, epidemics, quarantine restrictions, freight embargoes, civil commotion, or the like. Notwithstanding the above, strikes and labour disputes shall not constitute an excusable delay for either party under this Agreement. The Agreement may be terminated without penalty by the part whose performance has not been affected if non-performance continues for more than thirty (30) days.

11.2. Headings used in this Agreement are for reference purposes only and shall not be used to modify the meaning of the terms and conditions of this Agreement. This Agreement may be executed in two or more counterparts each of which shall be deemed an original, but all of which together shall constitute one and the same instrument.

11.3. If any provision contained in this Agreement is held invalid, illegal, or unenforceable, then this Agreement will be construed as if such provision had never been contained herein.

11.4. The parties will comply with all applicable laws, ordinances, rules and regulations governing their respective duties or responsibilities under this Agreement

11.5. This Agreement shall be only for the benefit of the undersigned parties and their permitted successors and assigns, and no student or other person shall be deemed to be a third party beneficiary of this Agreement.

11.6. The Parties agree that no Student shall be discriminated against unlawfully on the basis of age, race, color, creed, sex, sexual orientation, gender identity or expression, religion, national origin and disability.

11.7. This Agreement shall be governed by and construed in accordance with the laws of the State of Maryland, without reference to its principles of conflicts of laws.

11.8. This Agreement, together with all exhibits attached hereto, represents the entire agreement and understand between the parties with respect to the subject matter hereof, and supersedes any other agreement or understanding, written or oral, that the parties hereto may have had with respect thereof. No statements, representations, promises or inducements with respect to the subject matter by either party or by any agent or representative of either party which is not contained in this Agreement shall be valid or binding between the parties.

12. **Acknowledgement of Agreement**

_____ _____

Bruce E. Jarrell, MD Date
Executive Vice President and Provost
Dean, University of Maryland Graduate School

_____ _____

Jay A. Perman, MD Date
President
University of Maryland, Baltimore

_____ _____

Carlos Faerron, MD Date
Executive Director