



January 12, 2018

Dr. James D. Fielder, Jr.
Secretary
Maryland Higher Education Commission
6 N. Liberty Street, 10th Floor
Baltimore, MD 21201

Dear Dr. Fielder:

On behalf of Provost Sunil Kumar, Dean Ellen MacKenzie, and our Bloomberg School of Public Health, I write to request your review and endorsement of the enclosed proposal for a new **Master of Health Science in Global Health Economics**.

The MHS program will provide an opportunity for graduate students to apply health cases from around the world, conduct economic evaluations of health programs and evaluate the impact of social problems on the health of a community or population. Students will gain a solid understanding of how to influence behavior through the use of economic incentives. This degree is designed for full-time students interested in a graduate-level degree that will equip them to solve pressing public health problems in low- and middle-income countries as well as within the United States.

The proposed program is consistent with the mission of the university and with the State of Maryland's goals for postsecondary education. The proposal is fully endorsed by Johns Hopkins University.

A business check for review of this proposal is being sent to the Commission under separate cover. If you have any questions or need further information, please do not hesitate to contact me at (410) 516-2855 or alo@jhu.edu. Thank you for your continuing support of Johns Hopkins.

Sincerely,

Janet Simon Schreck, PhD
Assistant Vice Provost for Education

cc: Dr. Sunil Kumar

Dr. Ellen MacKenzie
Dr. Ratna Sarkar
Mr. James Brailer

Mr. Hans Cooper
Ms. Natalie Lopez
Mr. Tom McDermott
Ms. Jennifer Martin

Enclosures

MARYLAND HIGHER EDUCATION COMMISSION
ACADEMIC PROGRAM PROPOSAL

PROPOSAL
FOR:

- NEW INSTRUCTIONAL PROGRAM
 SUBSTANTIAL EXPANSION/MAJOR MODIFICATION
 COOPERATIVE DEGREE PROGRAM
 WITHIN EXISTING RESOURCES or REQUIRING NEW RESOURCES

Johns Hopkins University

Institution Submitting Proposal

Fall 2018

Projected Implementation Date

Master of Health Science

Award to be Offered

Global Health Economics

Title of Proposed Program

Suggested HEGIS Code

51.2210

Suggested CIP Code

Bloomberg School of Public Health

Department of Proposed Program

Dr. Ellen MacKenzie, Dean

Name of Department Head

Natalie Lopez

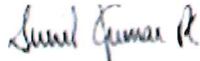
Contact Name

nlopez13@jhu.edu

Contact E-mail Address

410-516-6430

Contact Phone Number



Signature and Date

1/12/2018

President/Chief Executive Approval

n/a

Date

Date Endorsed/Approved by Governing Board

**The Johns Hopkins University
Bloomberg School of Public Health
Proposal for New Academic Degree Program
Master of Health Science in Global Health Economics**

A. Centrality to institutional mission statement and planning priorities

1. Program description and alignment with mission

The Johns Hopkins University Bloomberg School of Public Health (JHSPH) proposes a new Master of Health Science (MHS) in Global Health Economics. Offered by the Department of International Health, the newly proposed program will be delivered on campus as a full-time program.

Health Economics is an applied field of study that allows for the systematic and rigorous examination of the problems faced in promoting health for all. By applying economic theories of consumer, producer and social choice, health economics aims to understand the behavior of individuals, health care providers, public and private organizations, and governments in decision-making. Health economics is used to promote healthy lifestyles and positive health outcomes through the study of public health activities and programs, health financing strategies, health care providers, hospitals and clinics, managed care and public health organizations. The MHS in Global Health Economics uses health economic principals to address global issues such as globalization, global health programs, sustainable development, environmental degradation and climate change, migration, displaced persons, diseases prevalent in low and middle-income countries, epidemics, vaccine access, injuries, emerging diseases and risk factors such as obesity and smoking.

The MHS program will provide an opportunity for graduate students to apply health cases from around the world, conduct economic evaluations of health programs and evaluate the impact of social problems on the health of a community or population. Students will gain a solid understanding of how to influence behavior through the use of economic incentives. This degree is designed for full-time students interested in a graduate-level degree that will equip them to solve pressing public health problems in low- and middle-income countries as well as within the United States. Graduates of the MHS in Global Health Economics will be well placed for a range of opportunities in the public and private sectors, such as governments, international agencies like the World Bank of the World Health Organization, academic research institutions and private corporations. Graduates of this program will go on to conduct international work in global health economics, both in low- and middle-income countries and in high-income countries. The degree will consist of onsite intensive graduate-level coursework, with online course options, culminating in the capstone project where students complete a scholarly paper that integrates material from multiple courses applying econometric, evaluation or other research techniques to a topic of interest.

The proposed program to commence in fall 2018, will require successful completion of a minimum of 67 credits, including a capstone project. Students may complete the degree over a minimum of four 8-week terms or one year to a maximum of four years.

The mission of The Johns Hopkins University is to educate its students and cultivate their capacity for life-long learning, to foster independent and original research, and to bring the benefits of discovery to the world. In addition, the mission of the Bloomberg School of Public Health is to improve health “through discovery, dissemination, and translation of knowledge and the education of a diverse global community of research scientists and public health professionals.” The proposed degree program aligns with both of these missions as discussed in A.2 below.

2. Alignment with institutional strategic goals

Johns Hopkins University Strategic Goals

The proposed program advances the university’s *Ten by Twenty* vision, and related strategic goals for Johns Hopkins University, in a number of core ways by “Enhancing and enriching our ties to Baltimore, the nation and the world, so that Johns Hopkins becomes the exemplar of a globally engaged, urban university.” The MHS in Global Health Economics builds on the International Health Department’s distinctive strengths in economic evaluation and health financing in low and middle-income countries and elsewhere. The department is comprised of world-renowned faculty and provides unmatched opportunities for advanced training that touches on local and global issues and prepares students to address public health problems through multidisciplinary approaches that apply the latest scientific knowledge. The university’s Ten by Twenty vision emphasizes interdisciplinary collaboration, which is also a core tenet of the proposed MHS degree program, helping students to effectively lead and work in interdisciplinary teams.

Johns Hopkins Bloomberg School of Public Health Strategic Goals

As noted in A.1 above, the mission of The Johns Hopkins University is to educate its students and cultivate their capacity for life-long learning, to foster independent and original research, and to bring the benefits of discovery to the world. The mission of the Johns Hopkins Bloomberg School of Public Health is to improve health through discovery, dissemination, and translation of knowledge and the education of a diverse global community of research scientists and public health professionals. The proposed program is consistent with both missions and specifically is well aligned with many of the School’s strategic goals:

- Prepare leaders in public health science and practice to address current and future public health challenges. It is a goal of the proposed program to provide a methods and skills-based education in global health economics to the global public health workforce.
- Promote, value, and achieve excellence in teaching and learning. The Bloomberg School aims to combine technology with modern-day pedagogy to retain the same high standards that it incorporates into all of its academic programs.

- Advance the evidence base for the practice of public health and strengthen local, national, and global partnerships with public health practitioners. Through the proposed degree program, the Bloomberg School will offer advanced training in global health practice relevant to addressing public health problems from an economic perspective. The one-year structure of the degree program will allow graduates to apply their skills and tackle global health problems more efficiently.
- Raise awareness of public health in the global community. The proposed curriculum includes courses introducing learners to the breadth of public health.

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

1. Program outline and requirements

A full course listing, with course titles and descriptions, is provided in Appendix A.

Admissions Requirements

Admission standards will be as rigorous as those established for other master's degree programs in the Bloomberg School of Public Health. Applicants' academic transcripts, standardized test scores (including TOEFL where applicable), letters of recommendation, and statements of purpose will all be carefully considered in the admissions process. Specifically, the admissions requirements for the degree program are:

- (i) A baccalaureate-level degree from an accredited college or university – demonstrating strong quantitative background and undergraduate course in calculus– as evidenced by a foreign transcript certified by a credentialing agency, or by an official US or Canadian transcript sent directly to the School;
- (ii) Three letters of recommendation;
- (iii) A statement of purpose that demonstrates compatibility of the applicant's skills and career goals with the educational objectives of the program;
- (iv) A current résumé or CV;
- (v) GRE standardized test scores;
- (vi) English language proficiency as demonstrated by the TOEFL (minimum of 100 iBT) or IELTS (minimum score of 7).

Program Requirements

Students will be required successfully to complete successfully a minimum of 67 credits, including a capstone project. Students will enroll in a combination of required core courses and electives. The degree can be completed over a minimum of four 8-week terms. Program coursework will allow students to engage deeply with topics in health economics, health equity, economic incentives, global health, and economic evaluation and policy. Students will complete 21 core courses and then choose from among the electives to satisfy basic 67 degree-credit requirements.

Most courses must be taken for credit and a letter grade. To maintain satisfactory academic performance and good academic standing, students in this program must maintain a minimum grade point average of 2.75.

The capstone project requirement (4 credits) will pair students with their advisors or affiliated mentors, who will supervise the stages of writing of the scholarly paper, integrating material from multiple courses applying econometric, evaluation or other research techniques to a topic of interest. Students choose to use current datasets or conduct literature reviews of their topic in global health economics.

Once enrolled, students will develop an initial plan for their program, called Individualized Goals Analysis, by registering for a one-credit special studies course in Global Health Economics. This plan is reviewed, refined, and approved by their advisor and program director.

Table 1: Curriculum Overview – Core Courses
Students are required to take all Core courses below

Course Number	Course Title	Credits	Term
550.860	Academic and Research Ethics at JHSPH	0	1
140.621-3	Statistical Methods in Public Health I, II, III	4	1,2,3
340.721	Epidemiologic Inference in Public Health I	5	1
220.601	Foundations of International Health	4	1
221.84x	Special Studies: IGA in Global Health Economics	1	1
221.619	Introduction to Microeconomics	3	1
221.860	Health Systems Seminar	1	1,2,3,4
221.xxx	Globalization, Health, and Economics I	3	2
550.865	Public Health Perspectives on Research	2	2
313.643-5	Health Economics I, II	3	2,3
313.630-2	Economic Evaluation I, II, III	3	2,3,4
221.652	Health Financing in Low and Middle-income Countries (LMICs)	3	3
221.84x	Special Studies: Global Health Economics Culminating Project	4 (2 credits each term)	3,4
221.xxx	Globalization, Health, and Economics II	3	4
221.620	Applying Summary Measures of Population Health	4	4
221.651	Econometrics I	4	4

Table 2: Curriculum Overview – Elective Courses
Students may choose from the following courses below, if their schedules permit

Course Number	Course Title	Credits	Term
140.651-4	Methods in Biostatistics I-IV	4	1,2,3,4
221.627	Reduction of Maternal and Neonatal Mortality in LMICs	4	2
221.639	Health Care in Humanitarian Emergencies	3	2
221.646	Health Systems in LMICs	3	2
380.756	Poverty, Economic Development, and Health	4	2
221.650	Health Policy Analysis in LMICs	3	3
140.640	Statistical Methods for Sample Surveys	3	3
223.687	Vaccine Policy Issues	3	3

313.861	Public Health Economics Seminar	1	3,4
140.632	Introduction to the SAS Statistical Package	3	4
221.617	Behavioral Economics in Health Decisions	2	4
223.680	Global Disease Control Programs and Policies	4	4
340.600	STATA Programming	2	4
380.712	Methods in Analysis of Large Population Surveys	3	4

2. Educational objectives and student learning outcomes

The goal of the MHS in Global Health Economics is to prepare students from diverse individual and professional backgrounds to become managers and applied researchers capable of promoting health, and equitable, cost-effective health services in low resource environments around the world.

The specific educational objectives are below.

Upon completion of the MHS in Global Health Economics students will be able to:

- 1) Describe how economics is combined effectively with other public health sciences including biostatistics, epidemiology, and disease modeling in the conduct of cost-effectiveness studies and other types of economic studies
- 2) Evaluate and apply methods of health economics and health evaluation in global health research
- 3) Explain the appropriate role of cost-effectiveness analysis and economic reasoning in the policy making process for health care in low and middle-income countries and on global health issues crossing national boundaries
- 4) Use economic theory and economic modeling to interpret, analyze and evaluate health policy in the context of low and middle-income countries
- 5) Apply economic theory to balance the tradeoff between equity and efficiency for health policy recommendations
- 6) Conduct, analyze, and interpret the results of economic evaluations related to new health interventions, health systems, health services, or health program in low and middle-income countries and global programs
- 7) Assess the conduct of econometric analyses of changes related to policy and to perform data management and statistical tasks related to econometric analyses in low resource environments
- 8) Evaluate the health status and demographic profile of low and middle-income countries' populations including incidence and prevalence of disease morbidity and mortality and life expectancy
- 9) Produce written reports of research and/or programmatic findings and communicate

them via oral presentations, posters, briefs, peer-reviewed articles, or other official documents, intended for public health professionals and/or policy makers

3. General education requirements

Not applicable

4. Specialized accreditation/certification requirements

Not applicable

5. Contractual agreements with other institutions

Not applicable

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

1. Demand and need for program

The skills to be attained through the MHS in Global Health Economics program are highly valued by US and non-US public health practitioners, physicians, and epidemiologists, and by governmental and non-governmental development organizations and international assistance agencies. These organizations and agencies include the World Health Organization (WHO), The World Bank (WB), UNICEF, the United States Agency for International Development (USAID) and other bilateral agencies, and large implementing non-governmental organizations (NGOs) such as JHPIEGO, Save the Children, International Rescue Committee, and Catholic Relief Services. The same skills are also in demand worldwide by ministries and departments of health. These ongoing demands indicate an urgent need for health economists who have expertise in low and middle-income countries and who can address global health issues.

The MHS in Global Health Economics will prepare current and future health practitioners, researchers, policymakers, and scholars to take on health economics and highly complex challenges of health economics that emerge daily in global public health, science, and health care.

The proposed degree program will prepare current and future global health economists to apply the theories of production, efficiency, disparities, competition, and regulation to better inform the public and private sectors on the most efficient, cost-effective and equitable courses of action. Such research can include the economic evaluation of new technologies, as well as the study of appropriate prices, anti-trust policy, optimal public and private investment and strategic behavior.

Graduates of the MHS in Global Health Economics program will be equipped to drive further progress in the responsible development of new knowledge and new ways of saving lives and improving health across core disciplines in science, technology, public health and medicine in Maryland and elsewhere.

As we will discuss in D.1, there is a demand for the MHS degree program in global health economics; the proposed program will fill a subject-area gap among the educational programs that are currently available in this subject matter in Maryland.

2. Alignment with Maryland State Plan for Postsecondary Education

The 2013–2017 Maryland State Plan for Postsecondary Education articulates six goals for postsecondary education: 1) quality and effectiveness; 2) access, affordability and completion; 3) diversity; 4) innovation; 5) economic growth and vitality; and 6) data use and distribution. The MHS in Global Health Economics addresses most of these goals.

The Bloomberg School of Public Health aims to prepare highly trained scientists and healthcare professionals to work in organizations where they can contribute to meeting the public health needs of society. The MHS in Global Health Economics is intended to meet the growing need for skilled professionals in health economics in the State, across the country, and around the globe. This is consistent with the Goal 1, quality and effectiveness, of the State Plan.

The program attempts to further Goal 2 by providing an accelerated degree designed to be completed in just nine months. This will facilitate accessible completion of the degree by mid-career professionals who can obtain a temporary leave of absence.

The program supports Goal 3 through a commitment to the fundamental belief that all students, regardless of their backgrounds or personal attributes, should have access to, and feel welcome in, high-quality educational programming. The University regularly evaluates progress towards this goal and the program will maintain policies, practices and services that serve the diverse population of Maryland.

Similarly, the proposed program is consistent with Goal 4, innovation, which articulates Maryland's aspiration to be "a national leader in the exploration, development, and implementation of creative and diverse education and training opportunities that will align with State goals, increase student engagement, and improve learning outcomes..." All courses taught by our faculty use the Center for Teaching and Learning (CTL) to help create active learning environments in classrooms using professionally produced educational tools and resources. CTL has pioneered JHSPH's own online course platform, updating this platform to cater the changing needs of the instructors and students. CTL supports the educational programs of JHSPH by combining instructional design with the development of innovative course management systems to produce academic courses, training courses, and open educational resources that help faculty teach and students learn in online communities and classroom settings. CTL has pioneered JHSPH's own online course platform, updating this platform to cater the changing needs of the instructors and students.

Additionally, by preparing highly qualified global health economists, the program will promote Goal 5, economic growth and vitality goal, through building capacity for life-long learning among scientists and healthcare professionals so that they can maintain the skills they need to succeed in the workforce.

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

1. Market demand

In recent years the demand for health economists with global health knowledge and expertise has been increasing. The Department of International Health at the Bloomberg School of Public Health receives dozens of inquiries each month from professionals interested in seeking training or education in health economics. The MHS in Global Health Economics provides students with a pathway to career opportunities in policy, research, government, non-profits, and industry. These and similar employment opportunities are available nationwide. A recent search for employment using keywords: “global health economics”, “international health economist”, “international health economic evaluation” on the job site [Indeed.com](http://www.indeed.com) revealed over 1,600 active job postings where a background in economics, epidemiology, public health policy, country initiatives, and minimum, a master’s degree in economics, global health, international development, or related field are the preferred qualifications.¹

While there has long been a demand for evaluation of international health programs funded by the United States government, this demand has increased with GPRA Modernization Act (GPRAMA) of 2010, in which Congress strengthened the mandate to evaluate programs and required agencies to include a discussion of program evaluation in their strategic plans and performance report. This bill has increased the need for evaluation for the more than 6 billion per annum support for health programming in low- and middle-income countries. The specific guidelines for evaluation for USAID and foreign assistance programs were published in 2012.²

Besides the growth in the demand for these skills from the US government, many organizations who are headquartered around Washington D.C, also respond to requests for evaluation work from global actors such as UNICEF, WHO and UNDP, as well as global programs such as the International Vaccine Initiative (GAVI) and the Global Fund for TB, HIV/AIDS and Malaria. The United Nations agencies, along with many major donors, have adopted an accountability framework that stresses monitoring and evaluation of broader development goals, including economic analysis.³ These organizations are increasingly seeking support for the economic evaluation of country programs.

The projections from the Maryland Department of Labor, Licensing and Regulation (DLLR) say that economist careers are projected to increase 17% by 2024. While there is not a specific category for economic evaluation in international health in either Maryland or US labor categories, the DLLR projections are quite positive for closely related categories. For example, through 2024, Maryland’s Department of Labor projects an 18.4% job growth for epidemiologists and a 27.95% growth for statisticians.⁴ The projected growth in these two

¹ www.indeed.com accessed 12-8-17

² <http://www.state.gov/s/d/rm/rls/evaluation/2012/184556.htm>

³ http://www.un.org/en/development/desa/policy/cdp/cdp_background_papers/bp2015_27.pdf

⁴ <http://www.dllr.state.md.us/lmi/iandoproj/maryland.shtml>

related areas, along with the increased focus on economic evaluation and accountability by the US government and multilateral organizations suggest a strong job market for students with a graduate degree in global health economics

2. Educational and training needs in the region

The Bloomberg School of Public Health’s Admissions Office receives over twenty inquiries each month from professionals interested in seeking master’s level training in health economics.

Projected admissions for the MHS in Global Health Economics program are as follows
 Year 1: 6 students
 Year 2: 6 students
 Year 3: 8 students
 Year 4: 10 students
 Year 5: 11 students

3. Prospective graduates

The average full-time student admitted for the first term of 2018 academic year will complete the program in nine months, by May of 2019. All six students are expected to graduate in 2019, six in 2020, eight in 2021, and ten to fourteen annually in subsequent years.

The proposed CIP code is 51.2210 (International Public Health/International Health). The following Table D.3 lists the only master’s programs in the State of Maryland with the same CIP code.

Table D.3 Master’s Programs in the State of Maryland with the same CIP code (51.2210) from MHEC’s [Trend Data and Program Inventory](#) report

School	Degree level	Program	Enrollment trend				
			2012	2013	2014	2015	2016
Johns Hopkins University	Master’s Degree	International Health ⁵	144	163	158	160	150

E. Reasonableness of program duplication

1. Similar programs

In Maryland, there is one program approved or endorsed by MHEC with the CIP codes 51.2210. The Department of International Health offers a professional Master’s of Science in Public Health (CIP 51.2210), with four concentrations within the same CIP code: Global Disease Epidemiology and Control, Health Systems, Human Nutrition, and Social and Behavioral Interventions. While these are Master’s degrees with specialized training in international health, none of them specifically apply economic tools and theories to promote

⁵ The enrollment data reported by MHEC’s Trend Data and Program Inventory is for the master’s degree as a whole.

equitable allocation of resources as well as efficient financial systems, methods of payment, and delivery of care.

There are three additional programs approved by MHEC with a CIP code of 51.2211 (Health Services Administration) partially defined as "...instruction in health systems planning, public health organization and management, public health policy formulation and analysis, finance, business and operations management, economics of health care...". (see Table E.1 below). The University of Baltimore, University of Maryland and Johns Hopkins University offer each of these three programs.

The Master's from University of Baltimore and University of Maryland are fully domestic programs specializing in management, not in economics. The Master's in Health Economics offered by Johns Hopkins University is the original master's degree jointly offered by the Departments of Health Policy and Management, and International Health. The Department of International Health has decided to not offer this master's degree anymore, and instead to submit the present proposal for the Masters in Global Health Economics, directing its learning objectives to focus on health economics for underserved populations and equitable access to resources in low and middle-income countries.

Table E.1 Master's Programs in the State of Maryland with the same CIP code (51.2211) from MHEC's [Trend Data and Program Inventory](#) report

School	Degree level	Program	Enrollment trend				
			2012	2013	2014	2015	2016
University of Baltimore	Master's Degree	Health Systems Management	104	102	121	125	145
University of Maryland, College Park	Master's Degree	Health Administration	23	33	24	17	28
Johns Hopkins University	Master's Degree	Health Economics	22	15	10	14	14

While there are at least 25 master's degrees in global health across the U.S., there are no full-time, part-time, or online master's degree programs in global health economics in Maryland or anywhere else in the United States.

2. Program justification

Students will enter this program from a variety of backgrounds. While work experience is encouraged, it is not required. As the MHS in Global Health Economics balances theory with application, the program seeks applicants who will quickly develop skills in health economics, economics evaluation and econometrics and who have a passion for public health or medicine.

This program is ideal for those who are interested in examining key global issues –such as globalization, global health programs, sustainable development, environmental degradation and climate change, migration, displaced persons, diseases prevalent in low and middle-income countries, epidemics, vaccine access, injuries, and emerging diseases and risk factors such as obesity and smoking– through an economic lens. The MHS will attract applicants

from around the world and from a wide variety of professional and academic backgrounds. While some may enter the program with only a solid undergraduate degree, others will enter the program with a great deal of experience. With this variety in mind, the aim of the MHS in Global Health Economics program is to ensure that all students develop a core skill set that can be applied to their own particular interests or strengths in public health or medicine.

The program will be grounded in real-world challenges and informed by cutting-edge scholarship, with a diverse faculty of the leading experts in the field and a student body bringing lived experiences to the classroom.

F. Relevance to Historically Black Institutions (HBIs)

By definition, an appropriate student for the program would apply after attending and completing a baccalaureate degree at any undergraduate institution, including any of Maryland's Historically Black Institutions. The proposed program would not directly affect the implementation, maintenance, uniqueness, identity or mission of these institutions.

There are no known master's degrees in global health economics in any of the Historically Black Institutions in Maryland.

G. Evidence of compliance with the [Principles of Good Practice](#)

Not applicable

H. Adequacy of faculty resources

See Appendix C for a representative list of faculty who will teach in the proposed program. Program faculty are professors, associate professors and scientists with primary and joint appointments in the Department of International Health, in the Johns Hopkins Bloomberg School of Public Health.

The sponsoring faculty is Dr. Antonio Trujillo, Associate Professor in the Department of International Health, and Director of the MHS in Health Economics degree program. He will continue as Director of the MHS in Global Health Economics. His expertise is in health economics, economics of aging, and applied econometrics, and his main areas of interest include: i) Designing systems to identify individuals with high risk factors for chronic conditions; ii) Studying the use of economic incentives to motivate individuals with chronic conditions to engage in self-management; iii) Validating the role of clinical guidelines in reducing medical costs of chronic conditions; and iv) Studying the causal links between chronic conditions and labor force participation, income and retirement. Dr. Trujillo has studied the role of cognitive and non-cognitive skills in preventive behavior of patients with chronic conditions. His goal is to incorporate individual information on personality in the design of public health programs to increase treatment adherence among individuals with diabetes and hypertension. Currently, Dr. Trujillo is exploring how an economic view of fairness can inform drug regulation to help promote price transparency and prevent price gouging. He teaches an advanced econometrics

course on program impact evaluation using observational data and a course on behavioral economics and public health.

I. Adequacy of library resources

The book collections at the Johns Hopkins University number almost two and one-half million volumes, selected to support the studies of all departments and divisions of the University. The William H. Welch Medical Library collects current scholarly information, primarily electronic, which supports the research, clinical, administrative, and educational needs of its clients. The collection covers health, the practice of medicine and related biomedical and allied health care disciplines, public health and related disciplines, nursing, research literature, methodological literature, reviews or state-of-the-art reports, and in-depth, authoritative analyses of areas influencing biomedicine and health care. The library's emphasis is on providing materials at point of need. As a result, the collection includes more than 7,200 electronic journals, more than 400 databases, and more than 13,000 e-books. The library has staff members assigned to each department to aid in research and best practices for library services.

J. Adequacy of physical facilities, infrastructure and instructional equipment

JHSPH has 26,567 square feet of classroom and student study space. Each classroom has a computer and LCD projector. The school has robust student support services, including a fully staffed information technology team and over 1000 computers located in computer labs and throughout main buildings for student use.

The central computing resource for the School, the Office of Information Technology (IT), provides students with reliable computing infrastructure, location, and device independence, and critical software tools. Additionally, an enterprise service desk offers support for faculty, staff, and students. Assistance is provided over various channels, including phone, desktop, and FIPS 140-2 compliant remote-control support. Customer satisfaction is monitored and benchmarked against other higher educational institutions and industries.

No additional facilities, infrastructures or laboratory or computer resources will be required.

K. Adequacy of financial resources with documentation

See Appendix D for detailed financial information.

L. Adequacy of provisions for evaluation of program

As part of the program design and approval process, student learning outcomes and assessments have been aligned with the academic goals of the School and approved by the School's Committee on Academic Standards. Student course evaluations, conducted at the end of each term, provide feedback about both courses and faculty. The evaluations include questions addressing the course overall, the instructor and the assessments of learning.

Course evaluations are reviewed by each faculty course instructor, and all course evaluations will be reviewed by Dr. Antonio Trujillo, Director of the MHS in Global Health Economics, Dr. David Peters, Chair of the Department of International Health, and Dr. Adnan Hyder, Program Director of Health Systems. All three will review the data and implement changes to the program, such as curriculum content, course delivery mechanism, etc, as necessary.

Program level evaluation activities will include an annual assessment of program inputs, processes and outputs to generate a report on program applicants and admitted students, course enrollment, faculty participation, pedagogical innovations and program accomplishments/recognition.

Evaluation of student learning and achievement will focus on the early identification of students' goals/objectives and individualized learning outcomes; students' acquisition of knowledge and skills and the degree to which the program is fostering students' achievement of the degree competencies as demonstrated by each student's electronic learning portfolio. Post-degree professional and academic accomplishments of graduates will also be tracked.

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

Any student meeting the admissions requirements can apply for admission to the MHS degree program in Global Health Economics. The program will work to help all accepted students improve their workplace competitiveness and reach their professional goals, an aim consistent with the State's minority student achievement goals.

N. Relationship to low productivity programs identified by the Commission

Not applicable

Appendix A

Course List and Descriptions

Required Courses

550.860.81 Academic & Research Ethics (0 credits)

Examines academic and research ethics at JHSPH in a series of online interactive modules. Focuses on information about the academic ethics code and responsible conduct of research at the School. Explores issues of academic integrity such as proper ethical conduct and referencing, and discusses violations such as plagiarism and cheating, relative to case studies that illustrate situations faced by students and faculty in the academic setting. Addresses topics that include responsible conduct of research, authorship, data management, data ownership, guidelines for professional conduct, research fraud or scientific misconduct, federal and institutional guidelines related to research using human and animal subjects and ethical issues involving vulnerable subjects in research.

Prerequisite: None

550.865.81 Public Health Perspectives on Research (2 credits)

Introduces the substantive and methodologic bases for public health research, emphasizing the critical roles of the quantitative, qualitative, biologic, social, and behavioral sciences in improvement of public health. Highlights principles of high-quality research, including the value of a population perspective, interdisciplinary cooperation, the importance of new measurement techniques, and the interface between theory and practice. Gives students information about the interactions between the public and the researcher.

Prerequisite: None

140.621-3 Statistical Methods in Public Health I, II, III (4 credits)

Introduces the basic concepts and methods of statistics as applied to diverse problems in public health and medicine. Demonstrates methods of exploring, organizing, and presenting data, and introduces fundamentals of probability, including probability distributions and conditional probability, with applications to 2x2 tables. Presents the foundations of statistical inference, including concepts of population, sample parameter, and estimate; and approaches to inferences using the likelihood function, confidence intervals, and hypothesis tests. Introduces and employs the statistical computing package, STATA, to manipulate data and prepare students for remaining course work in this sequence.

Prerequisite: None

220.601 Foundations of International Health (4 credits)

Provides an overview of foundational approaches and issues in International Health, preparing students to gain the skills and attributes needed to work in global public health. Examines conditions faced by disadvantaged populations, primarily in low and middle-income countries (LMICs), and pathways to achieving better health outcomes. Applies principles of health equity and social justice in analyzing global health policies and programs, and develops skills to apply different frameworks for diverse types of public health intervention. Students develop and articulate evidence-informed arguments concerning public health strategies in different contexts,

and practice communication skills that demonstrate respect for other cultures and perspectives. They use a range of tools to prepare for work in global public health, including how to conduct situational analyses across a range of settings, how to analyze scale-up, sustainability, and equity, and how to move research into practice.

Prerequisite: None

221.619 Introduction to Microeconomics (3 credits)

Introduces economics of the business enterprise, the household, and the industry. Topics include supply and demand, price and income elasticity, equilibrium of the firm, and the measurement of poverty and inequality

Prerequisite: None

221.xxx Globalization, Health, and Economics I (3 credits)

This course examines relationship between health and economic development. It views the process affecting this relationship through the lens of economic growth, equity and globalization. Discusses issues on trade, labor, patent and intellectual property, global public goods.

Prerequisite: None

221.xxx Globalization, Health, and Economics II (3 credits)

This course is second in the series of globalization, health and economics, examining the relationship between health and economic development. It views the process affecting this relationship through the lens of economic growth, equity and globalization. Discusses topics on macroeconomics, social development, and inequity.

Prerequisite: 221.xxx Globalization, Health, and Economics II

221.651 Econometrics I (4 credits)

Introduces students to the application of basic statistical methods to economic analyses. They use econometrics to support or reject theories from economics using empirical observation. Students cover the basic concepts behind linear regression models by studying cases where the dependent variable is continuous and is a linear function of the parameters of interest. Improves students' ability to conduct economic analysis using observational data, as economic studies rarely benefit from the availability of controlled experiments. Exercises provide hands-on experience in implementing well-crafted empirical analysis. Students learn to employ tools and methods and compare the results with respect to those obtained from initial estimations based on very restricted assumptions.

Prerequisite: None

221.652 Health Financing in Low and Middle-Income Countries (3 credits)

Introduces students to concepts and methods in health financing with a focus on low and middle-income countries. Examines four themes of financing health systems: financing, pooling, purchasing and provision of healthcare. Surveys health financing practices across countries with different political and economic contexts. Enables students to use household survey data to estimate essential health financing metrics such as out-of-pocket payments, headcount ratio, poverty gap, and catastrophic health expenditures. Prepare students with health financing toolsets for a career in international health.

Prerequisite: None

221.620 Applying Summary Measures of Populations Health to Improve Health Systems (4 credits)

Explores the conceptual basis and application of summary measures of population health status. Presents approaches to measuring the burden of disease in populations and their use for guiding resource allocation and planning efficient and equitable health care systems. Lectures, discussions, and group exercises focus on composite indicators, exploring social and ethical value choices, and assessing the burden of disease at national level.

Prerequisite: None

221.84x Special Studies: Individualized Goals Analysis in Global Health Economics (1 credit)

This course requires students to explain what knowledge, skills, and experience they bring to the MHS program, and carve a document discussing their goals for their education, and what their aim to gain in terms of knowledge, skills, personal and professional contacts, and other experiences while in the MHS in Global Health Economics program. Students develop an MHS curriculum planning and tracking sheet by developing a tentative course plan for the entire MHS program. Students and their advisors work closely on the development of this document.

Prerequisite: None

221.84x Special Studies: Global Health Economics Culminating Project (4 credits)

Offers students an opportunity to integrate and apply program skills and competencies to a health economic problem in low and middle-income countries in a format that approximates a professional experience. Fosters student's ability to produce scholarly papers that provide a meaningful contribution to knowledge of the health of underserved populations. Guides student's development of tangible evidence of expertise that addresses specific applied topics relevant to international health and global health economics. Students, their advisors and second reader work closely in the completion of this scholarly project.

Prerequisite: None

221.860 Health Systems Seminar (1 credit)

Familiarizes Health Systems students with ongoing faculty research and activities, professionals and organizations in the field of international health, and provides a forum for discussion for current topics in health systems and international health.

Prerequisite: None

313.643 Health Economics I (3 credits)

Introduces the analytical tools of economics and applies them to issues in healthcare. Topics include: resource allocation in health care; government as payor and regulator; asymmetric information and the role of agency; the market for health insurance; market structure and competitive strategy as it applies to health care organizations; the market for labor in health care; and the market for innovations and technology. Uses mainstream neoclassical microeconomic theory as the basis for analysis, but also explores the implications when the assumptions of this model are violated. Uses a standard health economics text as the main reading, but uses journal articles in the field to examine how the profession is analyzing health care and public health issues.

Prerequisite: None

313.644 Health Economics II (3 credits)

Building on the basic concepts and applications presented in Health Economics I, by applying the analytical tools of economics to issues in health and healthcare, with a specific focus on the supply side of the market. Examines asymmetric information and the role of agency; the market for health insurance; market structure in health care; the market for labor in health care; the market for pharmaceuticals; and government regulation of health care. Emphasizes mainstream neoclassical microeconomic theory as the basis for analysis, but will explore the implications when the assumptions of this model are violated.

Prerequisite: 313.643

313.645 Health Economics III (3 credits)

Builds on the material taught in Health Economics I and II, and exposes students to a number of advanced topics relevant to public health. Draws upon a combination of seminal and contemporary readings, broadening students' awareness of health economics. Builds student skills in critically discussing academic contributions to the field. Uses lectures, student presentations and group discussions to integrate health economics material completed over the course of the sequence.

Prerequisite: 313.644

313.630 Economic Evaluation I (3 credits)

Demand for health services is increasing due to population growth, rising income and expectations, higher demand for care, and new technologies. Because all societies have limited resources, expenditures must be balanced against other needs such as infrastructure, education, and social welfare. Managers face decisions about allocation of funds to different population segments (e.g. young versus elderly) or different types of programs (e.g. prevention versus treatment, acute versus chronic disease), and programs with great benefit for a few versus modest benefit for many (e.g. organ transplant versus cataract surgery).

Prerequisite: None

313.631 Economic Evaluation II (3 credits)

Building upon the theoretical concepts taught in Economic Evaluation I, this course will provide advanced content in the areas of decision analysis and cost-effectiveness. Provides advanced content in decision analysis and cost-effectiveness and alternative approaches of modeling research questions for these fields. Approaches include calculation of costs and effectiveness measures using standard modeling methods. Compares outputs as a result of decision tree and Markov modeling and introduces sensitivity analysis. Students participate in group projects to produce a well-thought model on a topic of their own choosing in decision analysis or cost-effectiveness.

Prerequisite: 313.630

313.632 Economic Evaluation III (3 credits)

Third course in the economic evaluation sequence. Examines advanced methods as well as areas of controversy. Explores methods for performing cost-effectiveness analysis using data from prospective studies and observational data. Examines alternatives to conventional cost-

effectiveness analysis, including cost-benefit analysis, stated preference methods, and multi-criteria decision analysis. Emphasizes "hands-on" experience in conducting cost-effectiveness analysis based on data from prospective clinical trials as well as studies based on administrative databases such as health insurance paid claims files.

Prerequisite: 313.631

340.721 Epidemiologic Inference in Public Health I (5 credits)

Introduces principles and methods of epidemiologic investigation of disease and other health states. Presents different types of study designs, including randomized trials, cohort and case-control studies; measurement of exposures and outcomes; risk estimation; surveillance; program evaluation; and causal inference. Links epidemiologic inferences with the development of policy. Activities provide experience in applying epidemiologic methods, interpreting findings, and drawing inferences.

Prerequisite: None

Elective Courses

140.632 Introduction to the SAS Statistical Package (3 credits)

Designed for students with no experience with SAS. Familiarizes them with the skills needed for effective data management and data analysis. First covers performing exploratory analysis on data including the creation of tables and graphs. Proceeds next to creating new datasets and altering old datasets. The final part of the course covers building regression models (linear, logistic, and Poisson), interpreting results and criticizing such models and attempting to improve them.

Prerequisite: 140.622 or 140.652

140.640 Statistical Methods for Sample Surveys (3 credits)

Presents construction of sampling frames, area sampling, methods of estimation, stratified sampling, subsampling, and sampling methods for surveys of human populations. Students use STATA or another comparable package to implement designs and analyses of survey data. (380.712 develops additional practical skills in sampling.)

Prerequisite: 140.622 or 140.652

140.651-4 Methods in Biostatistics I-4 (4 credits)

Presents fundamental concepts in applied probability, exploratory data analysis, and statistical inference, focusing on probability and analysis of one and two samples. Topics include discrete and continuous probability models; expectation and variance; central limit theorem; inference, including hypothesis testing and confidence for means, proportions, and counts; maximum likelihood estimation; sample size determinations; elementary non-parametric methods; graphical displays; and data transformations.

Prerequisite: None

221.617 Behavioral Economics in Health Decisions (2 credits)

Guides students to challenge superficial intuitive judgments that are attractive because they make obvious sense but overlook important considerations that demand more analytical assessment.

Human behaviors that then come into play in a more careful analysis are examined for their legitimacy and reasonableness in resolving questions that are traditionally considered to be economic in nature. Where behavioral factors are recognized as relevant we develop ways to blend them with economic perspectives and methods to design balanced action strategies.

Prerequisite: 221.619 and 140.611 or 140.621

221.627 Issues in the Reduction of Maternal and Neonatal Mortality in Low Income Countries (4 credits)

Designed so that students understand the clinical and social causes of high maternal and newborn mortality and morbidity. Exposes students to the clinical, program and policy interventions that address these issues, and evaluates the strength of the evidence supporting these interventions. Offers practical exercises for students to: 1.) understand the scope and epidemiology of both maternal and neonatal problems, and 2.) design and assess programmatic responses to address them. Upon completion, students will have the knowledge base to be able to contribute to program and policy responses with an informed perspective to avert maternal and newborn deaths in different contexts.

Prerequisite: None

221.639 Health Care in Humanitarian Emergencies (3 credits)

Introduces the provision of basic health requirements for refugees and other displaced populations. This includes the health of persons displaced by conflict as well as natural and manmade disasters. Although its main concern is with the health needs of those displaced in low and middle-income countries it also touches on issues of persons resettled to developed countries. The course addresses epidemiologic assessments, control of communicable and non-communicable diseases, nutrition, mental health needs, establishing and managing health services, reproductive health services, ethical decision making, application of International Humanitarian Law, and coordinating activities among agencies in international contexts.

Prerequisite: None

221.646 Health Systems in Low and Middle-income Countries (3 credits)

Explores health systems in low and middle-income countries (LMICs), and examines approaches to improving the performance of health systems. Focuses on frameworks, tools, skills, and strategies to understand, influence, and evaluate health systems in LMICs. Identifies key institutions, functions, and performance issues for national and local health systems. By using frameworks and tools, students gain experience in systematically analyzing health systems and methods to plan, implement, and evaluate changes in health systems in a variety of settings, including countries in various levels of demographic, epidemiologic and economic transitions. Covers key controversies in health systems, including issues in monitoring health systems performance, the role of the public sector, dealing with unregulated private health markets, linking priority health programs and health systems, raising accountability in the health system, etc.

Prerequisite: 220.601

221.650 Health Policy Analysis in Low and Middle-income Countries (3 credits)

Provides an overview of key political frameworks and theories related to policy development and offers practical perspectives on their application to health policy in low and middle-income

countries (LMICs). Analyzes the political economy of health policy, that is how the political environment, country institutions, and economic and planning systems come together to influence the process of health policy development. Introduces the main actors, processes and contextual features that are typical of policy development and implementation in low and middle-income countries, and actors and processes at the global level that influence LMIC policy. Topics covered encompass national policy and planning frameworks; relationships with aid donors and issues of aid harmonization and alignment; the role of policy networks and in particular civil society actors; policy implementers and their role in shaping policy development; and mechanisms for global health governance.

Prerequisite: 220.601

223.680 Global Disease Control Programs and Policies (4 credits)

Presents the history, social and political context, organization, technical content, funding and evaluation of current, major, global initiatives for disease control. Emphasizes programs focused on health problems of the developing world and includes, initiatives for vaccines and immunization, non-communicable diseases, Integrated Management of Childhood Illness (IMCI) and Integrated Community Case Management (ICCM), safe motherhood and reproductive health, neonatal health, malaria, Neglected Tropical Diseases, HIV, TB, tobacco control, nutritional interventions and injury control. Also examines the process of policy formulation and resource allocation to international health and disease control.

Prerequisite: 340.601 or 340.751 or 550.694.81 and 550.695.81

223.687 Vaccine Policy Issues (3 credits)

Examines current domestic and international policy issues in vaccine research, development, manufacturing, supply, licensure, delivery and utilization. Topics include: priorities for funding vaccine research and development, ensuring an adequate supply of safe and effective vaccines, vaccine financing and new vaccine introduction decision-making, ethics, and compulsory vaccination. Emphasizes the identification of important vaccine policy issues and the formulation and evaluation of policies to address these issues. Presents the roles, responsibilities, and policy positions of key immunization stakeholders via guest lectures by a wide array of experts who have worked for/with important vaccine stakeholders (e.g., UNICEF, The Bill and Melinda Gates Foundation, US Government, and GAVI Alliance). Students learn skills including developing a Policy Paper. Readings include relevant scientific papers and publications of U.S. and international agencies.

Prerequisite: 223.662

313.861 Public Health Economics Seminar (1 credit)

Exposes students to recent research in various areas of health economics. Provides opportunities for more in-depth study of the core economics courses being offered each term. Provides opportunities for professional development in the field.

Prerequisite: None

340.600 STATA Programming (2 credits)

Teaches Stata programming in a systematic way to students who have had exposure to Stata or another statistical package, but may not have the tools to perform complex analytical projects independently. Covers data management, programming concepts, procedural programming,

Stata-specific commands and constructs, and project workflow.

Prerequisite: 340.721-722 or 340.751-752; 140.621-622 or 140.651-652

380.712 Methods in Analysis of Large Population Surveys (3 credits)

Introduces the practical aspects of design and analysis of large sample surveys. Covers statistical issues of complex surveys involving stratification and clustering, methods of handling missing data, weighting, sample size estimation and allocation, design-based analysis of frequency tables and multivariate methods for complex surveys. Emphasizes applied, rather than theoretical derivation.

Prerequisite: 140.640 or consent from instructor

380.756 Poverty, Economic Development, and Health (4 credits)

Introduces students to leading theories in economic development and in the macroeconomic determinants of the health of populations, communities, and individuals. Reviews both historical and current cases to answer the following questions: What is economic development? How does economic development occur? Which aspects of development improve and which aspects are detrimental to human health? Can policymakers plot more “hygienic” plans for economic development? Do investments in health and family planning cause economies to prosper?

Prerequisite: None

Appendix B

Evidence of Compliance with the Principles of Good Practice

Not Applicable

Appendix C

Faculty of Core and Elective Courses

Name	Terminal Degree	Field	Academic Title/Rank	Status	Courses Taught
Peter Agre	MD	Molecular Microbiology and Immunology	Professor	Full-time	<ul style="list-style-type: none"> Public Health Perspectives on Research
Saifuddin Ahmed	PhD	Population, Family and Reproductive Health	Professor	Full-time	<ul style="list-style-type: none"> Statistical Methods for Sample Surveys Methods in Analysis of Large Population Surveys
Jeromie Ballreich	PhD	Health Policy and Management	Assistant Scientist	Full-time	<ul style="list-style-type: none"> Public Health Economics Seminar
Karen Bandeen-Roche	PhD	Biostatistics	Professor	Full-time	<ul style="list-style-type: none"> Statistical Methods in Public Health I, II
Sara Bennett	PhD	International Health	Professor	Full-time	<ul style="list-style-type: none"> Health Policy Analysis in LMICs Health Systems in LMICs
David Bishai	PhD	Population, Family and Reproductive Health	Professor	Full-time	<ul style="list-style-type: none"> Poverty, Economic Development, and Health
Gilbert Burnham	MD, PhD	International Health	Professor	Full-time	<ul style="list-style-type: none"> Health Care in Humanitarian Emergencies
David Celentano	ScD	Epidemiology	Professor	Full-time	<ul style="list-style-type: none"> Epidemiologic Inference in Public Health I
Victoria Chou	PhD	International Health	Assistant Scientist	Full-time	<ul style="list-style-type: none"> Reduction of Maternal and Neonatal Mortality in LMICs
Dagna Constenla	PhD	International Health	Associate Scientist	Full-time	<ul style="list-style-type: none"> Health Systems Seminar
Ciprian Crainiceanu	PhD	Biostatistics	Professor	Full-time	<ul style="list-style-type: none"> Methods in Biostatistics I, II
Andreea Creanga	MD, PhD	International Health	Assistant Professor	Full-time	<ul style="list-style-type: none"> Reduction of Maternal and Neonatal Mortality in LMICs

Jennifer Deal	PhD	Epidemiology	Assistant Scientist	Full-time	• Epidemiologic Inference in Public Health I
Marie Diener-West	PhD	Biostatistics	Chair, MPH Program; Professor	Full-time	• Statistical Methods in Public Health I, II, III
Matthew Eisenberg	PhD	Health Policy and Management	Assistant Professor	Full-time	• Health Economics II
Douglas Hough	PhD	Health Policy and Management	Associate Scientist	Full-time	• Health Economics I
Adnan Hyder	PhD	International Health	Professor	Full-time	• Applying Summary Measures in Population Health
Marcelo Jacobs-Lorena	PhD	Molecular Microbiology and Immunology	Professor	Full-time	• Public Health Perspectives on Research
Anna Kalbarczyk	MPH	International Health	Research Associate	Full-time	• Global Disease Control Programs and Policies
Gary Ketner	PhD	Molecular Microbiology and Immunology	Professor	Full-time	• Public Health Perspectives on Research
Alain Labrique	PhD	International Health	Associate Professor	Full-time	• Global Disease Control Programs and Policies
Rupali Limaye	PhD	International Health	Assistant Scientist	Full-time	• Foundations of International Health
Greg deLissovoy	PhD	Health Policy and Management	Associate Professor-Adjunct	Part-time	• Economic Evaluation I
Alan Massie	PhD	Epidemiology	Assistant Professor	Full-time	• STATA Programming
Aidan McDermott	PhD	Biostatistics	Associate Scientist	Full-time	• Introduction to the SAS Statistical Package
John McGready	PhD	Biostatistics	Associate Scientist	Full-time	• Statistical Methods in Public Health III
Luke Mullany	PhD	International Health	Professor	Full-time	• Reduction of Maternal and Neonatal Mortality in LMICs
William Padula	PhD	Health Policy and Management	Assistant Professor	Full-time	• Economic Evaluation II
David Peters	DrPH, MD	International Health	Professor & Department Chair	Full-time	• Foundations of International Health

TABLE 1: RESOURCES:					
Resource Categories	Year 1	Year 2	Year 3	Year 4	Year 5
1. Reallocated Funds	—	—	—	—	—
2. Tuition/Fee Revenue (c + g below)	\$323,640	\$333,348	\$457,800	\$589,420	\$667,810
a. Number of F/T Students	6	6	8	10	11
b. Annual Tuition/Fee Rate	—	—	—	—	—
c. Total F/T Revenue (a x b)	\$53,940	\$55,558	\$57,225	\$58,942	\$60,710
d. Number of P/T Students	—	—	—	—	—
e. Credit Hour Rate	—	—	—	—	—
f. Annual Credit Hour Rate	—	—	—	—	—
g. Total P/T Revenue (d x e x f)	—	—	—	—	—
3. Grants, Contracts & Other External Sources	—	—	—	—	—
4. Other Sources	—	—	—	—	—
TOTAL (Add 1 – 4)	\$323,640	\$333,348	\$457,800	\$589,420	\$667,810

2.) Resources are full time tuition revenues. The expectation is that we will start with six students and increase to eleven students (between 10-15 students subsequent years) . The cost of the tuition cost subject to a 3% increase each year. Tuition revenue will be the only resource to support this program.

TABLE 2: EXPENDITURES:					
Expenditure Categories	Year 1	Year 2	Year 3	Year 4	Year 5
1. Faculty (b + c below)	\$269,342	\$277,420	\$380,990	\$392,420	\$404,193
a. # FTE	1.5	1.5	2.0	2.0	2.0
b. Total Salary	\$201,000	\$207,030	\$284,321	\$292,851	\$301,637
c. Total Benefits	\$68,340	\$70,390	\$96,669	\$99,569	\$102,556
2. Admin. Staff (b + c below)	\$47,366	\$48,787	\$50,250	\$51,758	\$53,311
a. # FTE	.25	.25	.25	.25	.25
b. Total Salary	\$35,348	\$36,408	\$37,500	\$38,625	\$39,784
c. Total Benefits	\$12,018	\$12,379	\$12,750	\$13,133	\$13,527
3. Support Staff (b + c below)	\$53,667	\$55,278	\$56,937	\$58,645	\$120,809
a. # FTE	.5	.5	.5	.5	1.0
b. Total Salary	\$40,050	\$41,252	\$42,490	\$43,765	\$90,156
c. Total Benefits	\$13,617	\$14,026	\$14,447	\$14,880	\$30,653
4. Equipment	—	—	—	—	—
5. Library	—	—	—	—	—
6. New or Renovated Space	—	—	—	—	—
7. Other Expenses	—	—	—	—	—
TOTAL (Add 1 – 7)	\$370,375	\$381,485	\$488,177	\$502,823	\$578,313

1. The equivalent of 1.5 new full-time faculty salaries with a 3% increase in salary each year increasing to the equivalent of 2 new full-time faculty effort by Year 3-5. Faculty effort to teach and advise students in this program. Fringe benefit rate of 34%.
2. Named Program Director (faculty) .25 effort in coordinating the program with a 3% increase in salary each year. Fringe benefit rate of 34%.
3. Fifty percent effort for a full time program coordinator position to monitor program and student's efforts as enrollment increases. Fringe benefit rate of 34%.