

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

*(For each proposed program, attach a separate cover page. For example, two cover pages would accompany a proposal for a degree program and a certificate program.)*

**Johns Hopkins University**

Institution Submitting Proposal

**2017**

Projected Implementation Date

**Area of Concentration**

Award to be Offered

**1214-00**

Suggested HEGIS Code

**Implementation Food Systems  
(within the Master of Public Health)**

Title of Proposed Program

**51.2201**

Suggested CIP Code

**Bloomberg School of Public Health**

Department of Proposed Program

**Michael Klag, Dean**

Name of Department Head

**Natalie Lopez**

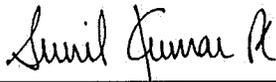
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Signature and Date

**12/19/2016**

President/Chief Executive Approval

**N/A**

Date

Date Endorsed/Approved by Governing Board

**The Johns Hopkins University  
Bloomberg School of Public Health  
Proposal for Substantial Modification to an Existing Program**

**New Area of Concentration in Food Systems  
within the Existing Master of Public Health**

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**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 Area of Concentration in Food Systems in the existing and previously endorsed Master of Public Health (HEGIS code 1214-00, CIP code 51.2201), which is available for onsite and online delivery.

The new concentration is designed to provide an opportunity for multi-disciplinary, inter-departmental education to prepare students from diverse individual and professional backgrounds to address the critical public health challenges of feeding a growing world population in the face of diminishing resources, climate change, and increasing rates of diet-related disease globally.

The concentration is for students interested in focusing their studies and career on food systems and public health in academia, non-profit organizations, private industry, health departments, and other government agencies. The concentration will consist of online and onsite intensive graduate-level coursework, including service learning experiences, and culminate in a capstone project.

The mission of The Johns Hopkins University is to educate its students and, cultivate their capacity for life-long learning foster independent and original research, and 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 mission of the Center for a Livable Future is to “promote research and to develop and communicate information about the complex inter-relationships among diet, food production, environment and human health; to advance an ecological perspective in reducing threats to the health of the public; and to promote policies that protect health, the global environment, and the ability to sustain life for future generations.”

## 2. Alignment with institutional strategic goals

The proposed concentration advances the University's *Ten by Twenty* vision, and related strategic goals, in a number of core ways. One of the priorities of the Ten by Twenty is to forge collaborations across disciplines. The concentration will be led by faculty from the Johns Hopkins Center for a Livable Future, established 20-years ago as a multi-disciplinary research and academic center to address the myriad of environmental, social and public health challenges associated with food production, processing, transportation, consumption, and disposal. The Center collaborates with faculty and students across the School as well as other divisions around the University through both research and scholarship. The courses taught by the concentration faculty incorporate guest lectures from a variety of disciplines and experiences, including academics from outside the field of public health, community advocates, policy experts, agricultural scientists and farmers, to engage the students in topics not traditionally addressed in the field of public health and to think creatively and critically about solutions that have broad, positive and lasting impacts.

Two of the courses include service learning opportunities that immerse students in real world projects with local organizations in the Baltimore area, strengthening the connections between JHU and the local Baltimore community and the University's commitment to the city.

The concentration in Food Systems builds on the strengths and the rich portfolio of education and research programs of the Johns Hopkins Center for a Livable Future, including a series of five academic courses, a robust pre-doctoral fellowship program, a teaching farm at a nearby city-owned park, student advising, and research collaborations with students and faculty across the university. As articulated in its strategic plan, the Bloomberg School is dedicated to the education of a diverse group of research scientists and public health professionals, a process inseparably linked to the discovery and application of new knowledge, and through these activities, to the improvement of health and prevention of disease and disability around the world. The establishment of a concentration in Food Systems will further advance this goal by providing students with the necessary tools to anticipate and directly engage in the rapidly changing role of food systems in public health discovery and practice.

## **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.

Students will be required to complete a minimum of 18 credits of focused coursework within the 80 credits required to complete the MPH, including a practicum and culminating in a capstone project and presentation. Concentration coursework includes courses focused on systems thinking and the connections among diet, food production, the environment and public health. Several courses offer service learning or practicum opportunities with organizations working to improve the Baltimore area food system, and opportunities to “get their hands dirty” at the Center’s urban teaching farm. Students are also required to take at least one course focused on applying skills to address the myriad challenges in improving food systems, including qualitative research, program planning, risk assessment, communication, and advocacy. Some courses are online and some are onsite, offering students flexibility to complete program requirements.

In addition to formal coursework, students will meet monthly with concentration faculty to discuss their progress in their coursework, network, and provide peer-to-peer support and assistance with capstone project ideas and progress. Students will also have the opportunity to participate in Center events, such as endowed lectureships.

#### *Admissions Requirements*

Any student admitted into the School’s MPH program who demonstrates an interest in the MPH concentration in Food Systems will be accepted into the cohort. MPH students are permitted to select only one concentration. Rigorous admission standards for the MPH program are well-established in the Bloomberg School of Public Health. Applicants’ academic transcripts, standardized test scores (including TOEFL where applicable), letters of recommendation, and statements of purpose are carefully considered in the MPH program admissions process.

#### *Program Requirements*

Students choosing MPH concentrations are required to successfully complete a minimum of 18 credits of coursework affiliated with the concentration, including a capstone project and presentation. Students enroll in a combination of required core courses and electives. The MPH degree can be completed over a minimum of five 8-week terms.

Program coursework will allow students to engage deeply with the public health challenges associated with producing food for the 7.3 billion people currently alive today in a way that does not diminish the ability of future generations to feed themselves. Students complete 6 core courses and then choose from among 17 electives to satisfy the 18 credits required for the concentration.

The capstone requirement (2 credits) will pair students with faculty and preceptors or advisors who will supervise the identified and approved capstone proposal. A list of research and project ideas for students will be provided, many of which tie into projects currently underway by faculty and staff at the Center, or may serve as inspiration for project ideas that align with the students' interests and goals. Students will meet with their capstone advisor(s) as needed, and also with the concentration faculty and peers monthly to discuss their project and progress.

## **2. Educational objectives and student learning outcomes**

The goal of the concentration in Food Systems is to prepare students from diverse individual and professional backgrounds with specialized knowledge and an understanding of the relevance of the food system to public health and apply communication and/or public health policy analysis and advocacy skills to study and address the public health implications of food systems.

Upon completion of the MPH concentration in Food Systems, students will be able to:

1. Define and describe the food system, including identification of points in the food production and distribution processes that create risks and benefits for workers, communities, consumers, the ecosystem, and food community and also potential opportunities for intervention.
2. Describe the history and evolution of food systems and food production practices and characterize the impacts of such practices on the public's health.
3. Use a systems perspective to analyze and apply critical thinking to inter-relationships within the food system, specifically among diet, food production, the environment and public health.
4. Analyze the strengths and weaknesses of political, social, and economic policies and other interventions to address food system issues including food production, consumption, and the fulfillment of the right to adequate food.
5. Apply selected skills (i.e., risk assessment, advocacy, communication, program planning and evaluation, and qualitative research methodology) to promote a healthy and sustainable food system.

## **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**

In many ways, food is a fundamental factor in the health of the population and our food system is a core element of our society. Our food system encompasses the activities, infrastructure, and people involved in feeding our population (e.g., the growing, processing, distribution, consumption, and disposal of foods) and is at the nexus of many of the today's most significant public health and environmental problems. These include obesity and other diet-related diseases; food insecurity; antibiotic-resistant infections; community and occupational exposures to contaminated air, water, and soil; and long-term threats to the food supply through resource depletion, ecological degradation, and political instability and war. A population's health is shaped by the quality and quantity of the food that is consumed, as well as by the way that the food is produced, processed, transported, and marketed to the consumer, intersecting with all aspects of public health.

Public health practitioner and student interest in applying a systems approach to studying the food system has been growing rapidly for some time. In 2010 a coalition of members from the American Public Health Association (APHA), American Planning Association, American Dietetic Association, and American Nurses Association released policy guidelines emphasizing the health benefits of improving the food system and recommending system wide changes in food policy. In 2013, the North American Food System Network (NAFSN) was formed to coordinate and facilitate training and networking opportunities for individuals whose current or future career involves helping communities develop equitable and sustainable regional food system. While the fields of planning and agricultural extension are well-represented, the public health perspective is still a newcomer to the explosion of food systems-related scholarship and professional training.

The concentration in Food Systems will prepare current and future health practitioners, researchers, policymakers, and scholars to take on the emerging and critical challenges associated with food systems and highly complex public health, science, and social challenges that emerge daily. These students will be on the cutting edge of new thinking about the food system. With a better understanding of our food system, students can pursue careers that more effectively address many key public health challenges and influence positive change, such as promoting healthier diets, improving access to healthy foods by vulnerable populations, reducing the burden of foodborne illness and other diseases, addressing occupational health issues, conserving natural resources, helping to mitigate climate change, and protecting the environment and the public's health by improving air and water quality. Maryland based employers tasked with meeting these challenges include the Food and Drug Administration; the Environmental Protection Agency; the Maryland Department of Health and Mental Hygiene; and the Maryland Departments of Environment, Natural Resources, Agriculture, and Planning, as well as local health departments. Washington, DC-based

employers include the Departments of Health and Human Services and Agriculture, think-tanks, and non-governmental organizations.

Graduates of the concentration in Food Systems will be equipped to drive the responsible development of new knowledge and new ways of saving lives and improving health to further progress across core disciplines in science and technology, and public health and medicine in Maryland, and beyond.

## **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 Bloomberg School aims to prepare highly trained scientists and healthcare professionals to work in organizations where they can contribute to the public health needs of society. The concentration in Food Systems is intended to meet the growing need for skilled public health professionals in the State, across the country, and around the globe. This is consistent with the Goal 1 (quality and effectiveness) of the State Plan.

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...”

Additionally, the program, through the preparation of highly qualified food systems researchers, practitioners and advocates contributes to economic growth and vitality (Goal 5) by providing life-long learning to scientists and healthcare professionals so 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 professionals, practitioners and advocates with knowledge and expertise in food systems has been increasing. While the professional field of food systems studies is still young, there is increased recognition and focus on the importance of food and food systems within other established fields, particularly public health, environmental health, domestic and international community development, economic policy, food safety, environmental protection, and climate change. Over 4,100 students have taken our massive, open, online course (MOOC) offered the past four years through the JHU partnership with Coursera. In 2013, the North American Food System Network (NAFSN) analyzed posts on the Tufts University listserv for food systems-related jobs and found that approximately two-thirds of the almost 600 positions posted in 2012 were salaried, professional positions, including manager/directors, educators, researchers, and nutritionists.

The concentration provides students with a pathway to a broad range of career opportunities in academic and research program planning and evaluation, governmental and non-governmental agencies, policy/advocacy with non-profits and private industry. These and similar employment opportunities are available nationwide. A recent search for employment on the job site [Indeed.com](http://Indeed.com) revealed 41 active job postings with a salary of at least \$41,000 requiring an MPH or similar degree in food-related fields, such as research, education and community advocacy.

According to the Maryland Workforce Industry projections for 2012-2022, industries typically employing public health professionals, including "Professional, Scientific, Technical services," "Management of Companies and Enterprises," and "Educational Services" all show positive projected growth between 7% and 17.58%.

### **2. Educational and training needs in the region**

The Bloomberg School receives an increasing number of inquiries each month from potential students and professionals interested in seeking education and training in food systems. Maryland-based employers tasked with addressing the challenges related to food systems include the Food and Drug Administration; the Environmental Protection Agency; the Maryland Department of Health and Mental Hygiene; and the Maryland Departments of Environment, Natural Resources, Agriculture, and Planning, as well as local health departments and private and public research institutions of higher learning. Washington, DC-based employers include the Departments of Health and Human Services and Agriculture, academic institutions, think-tanks, and non-governmental organizations.

Projected admissions for the concentration in Food Systems are as follows:

Year 1: 15 students

Year 2: 12-15 students

Year 3: 15-20 students

Year 4: 15-20 students

Year 5: 15-20 students

### **3. Prospective graduates**

The average student admitted for the summer 2017 semester will complete the program in 2018. Approximately 25 students expressed interest in the new concentration.

Analysis of MHEC's Program Inventory Report indicates that no Maryland Universities currently offer MPH concentrations or degrees that focus on the food system.

## **E. Reasonableness of program duplication**

### **1. Similar programs**

In Maryland, there are currently no MHEC approved MPH concentrations or MPH programs related to food systems. The only specific training in food systems in Maryland is our Food Systems professional training certificate, approved by MHEC in 2013. As previously discussed, this certificate is not easily earned by full-time MPH students, 75% of whom commit to a formal concentration. The concentration would differ from the certificate by offering a broader number of courses, particularly skills-based courses. The concentration will also differ from the certificate through deeper engagement with students through monthly mentoring meetings and the capstone project and presentation.

Currently, there are no degree programs in food systems in any of the other CEPH-accredited schools of public health. According to an analysis conducted by Center for a Livable Future faculty in 2014, only 52 courses on the topic of food systems were offered across 50 US-based CEPH-accredited schools of public health. Only 18% of those courses offered a systems-approach to explore broader food systems and their impact on public health. Most courses focused on specific topics, such as food policy or nutrition. The majority of broader food systems courses offered at other schools of public health were at land grant schools which included agricultural academic training.

### **2. Program justification**

The concentration in Food Systems will provide concrete training in food systems with particular focus on applying a systems lens to examine the public health challenges of feeding a growing global population within the context of land constraints, soil degradation, climate change, increasing demand for resource-intensive diets, and the global trends of diabetes and obesity. Graduates will be on the cutting edge of new thinking about the food system. With a better understanding of our food system and its relationship to many other public health fields, students can pursue careers that more

effectively address many key public health challenges and influence positive change, such as promoting healthier diets, reducing the burden of foodborne illness and other diseases, addressing occupational health issues, conserving natural resources, helping to mitigate climate change, and protecting the environment and the public's health by improving air and water quality.

The area of concentration will be grounded in real-world challenges and informed by leading 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 MPH concentration in Food Systems 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.

#### **G. Evidence of compliance with the Principles of Good Practice**

See Appendix B for the evidence that this program complies with the Principles of Good Practice noted above.

#### **H. Adequacy of faculty resources**

See Appendix C for a representative list of faculty who will teach in the proposed program. Program faculty are full-time Assistant Faculty in the Johns Hopkins School of Public Health Department of Environmental Health Sciences with joint appointments in Health Policy and Management.

Dr. Keeve Nachman is Director of the CLF Food Production and Public Health program and co-directs the JHU Risk Sciences and Public Policy institute. Dr. Roni Neff directs the Research program and the Food Sustainability and Public Health program at CLF. Drs. Neff and Nachman have produced leading food systems and public health research while continuing to generate path breaking scholarship, educating the next generation of leaders in food systems and contributing in ongoing ways to the expansion of our understanding of food systems, and bridging the public health, agriculture and community practitioner communities to forge the new professional field of food systems. Faculty publish numerous scholarly journal articles and present at professional meetings each year and advise graduate students at all levels. Dr. Neff recently edited the first textbook on food systems and public health and both faculty have contributed to several chapters in other leading public health and environmental textbooks.

## **I. Adequacy of library resources**

The book collections at the Johns Hopkins University number nearly four million volumes, selected to support the studies of all departments and divisions of the University. The William H. Welch 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 5000 electronic journals, more than 400 databases, and more than 2000 electronic books. The library has staff members assigned to each department to aid in research and best practices for library services.

The Abraham M. Lilienfeld Library is the primary resource within the School for information in the fields of public health, management science, and the social sciences. The library provides access, via the Johns Hopkins Medical Institution online catalog and specialized bibliographic databases, to information in all areas of interest to the Schools' students and faculty. The total library collection is now approximately 30,000 volumes of books, pamphlets and government reports, with a strong emphasis in epidemiology, infectious diseases, health policy and management, the social aspects of health care, and HIV and the AIDS pandemic.

## **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. Some of the courses will also be available online. No additional facilities, infrastructures or laboratory or computer resources will be required.

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.

## **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.

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 of the MPH program can select the food systems concentration. The concentration 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

### **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.

### **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.

### **180.620.81 Food Systems and Public Health (4 credits)**

Introduces the complex and challenging public health issue of food security (sufficient, safe and nutritious food for all) in a world where approximately one billion people are under-nourished while over 1.5 billion are overweight or obese. Explores the connections among diet, the current food and food animal production system, the environment and public health, considering factors such as equity, population pressure and the historical, economic and political forces that have helped shape food systems. Focuses on the U.S. experience, but also uses case studies in the U.S. and internationally to illustrate the issues discussed. Considers alternative approaches to achieving both local and global food security. Explores the important role public health professionals can play. Guest lecturers include experts from a variety of disciplines and experiences.

### **221.654.81 Systems Thinking in Public Health: Applications of Key Methods and Approaches (2 credits)**

Systems thinking, (ST), is a holistic approach to analyzing how components of complex systems interact and adapt. Through systems thinking we can understand how societies organize themselves to achieve collective health goals and how different actors contribute to policy outcomes. The practice of systems thinking includes the ability to integrate multiple perspectives and synthesize them into a framework or model that encompasses the various ways in which a system might react to policy choices.

**180.655.01 Baltimore Food Systems: A Case Study of Urban Food Environments (4 credits)** Students look closely at Baltimore City's complex food environment using discussion, experiential learning, discussion, lectures, service learning, and related texts. Students consider improvements to these systems to assure access to nutritious, adequate, affordable and sustainably produced foods, and to increase supply and demand of these foods; to address diet related disease; and to reduce food system environmental harms. Students "go backstage" with tour guides at sites around the city. Class sessions are primarily discussion-oriented, but also include lectures and guest visits. Students consider the relative impacts of access, demand, cost, stakeholder interests, administrative issues, history, and power, and consider the relative strengths of voluntary, governmental, legal and other strategies. They also consider applicability of lessons from Baltimore to other area food systems.

**180.606.81 Case Studies in Food Production and Public Health (4 credits)** Focuses on food production practices in the United States and the associated public health risks and benefits; discussions on animal and crop agriculture and food processing encompass both historical practices and modern methods. Presents case studies which delve deeper into specific topics, including industrial food animal production, aquaculture, veterinary drugs, agricultural policy, chemical exposures, rural communities and food animal worker health, and sustainable production methods. Lectures draw from the literature, and from the firsthand experiences of lecturers in research translation and agricultural production.

**180.605.01 Food System Sustainability Practicum (3 credits)** Students learn first-hand about food system sustainability issues by engaging with organizations working for positive change. They broaden their learning through classroom education, readings and assignments covering: food system sustainability, with emphasis on content areas relevant to student projects; skills and context relevant to working with these organizations; and reflection on service-learning experiences.

**180.611.01 The Global Environment and Public Health (4 credits)** Explores how global environmental issues such as global warming, urban sprawl, deforestation, mining, environmental refugees, biodiversity loss, and food security may cause increasing human harm. Provides an overview of the science and policy issues related to the changing environment, how environmental problems affect human health, and emphasizes potential solutions and sustainable development methods essential for resolving a myriad of environment-health problems.

**222.662.01 Obesity in Public Health (3 credits)** Examines obesity as a public health problem, (including prevalence, trends and disparities as well as the health, psychosocial, and economic consequences of obesity and its associated co-morbidities). Explores physiologic, psychological, economic, and cultural drivers of food consumption. Identifies key issues and approaches for current and future public health and environmental approaches to obesity.

**222.657.01 Food and Nutrition Policy (2 credits)**

Examines major governmental, bilateral, and multilateral agency food and nutrition policies and programs that directly or indirectly affect 1) the availability and quality of food and 2) the health and nutrition of populations. Examples are drawn from developing and developed countries. Discussions are led by faculty and guest lecturers with diverse experience in developing and implementing food and nutrition policies.

**182.640.01 Food and Water Borne Diseases (3 credits)**

Discusses food- and water-borne intoxicants and infections, diseases linked to eating and drinking, and prevention of food and water-borne diseases. Topics include transmission of disease via food and water, disease processes in food- and water-related illness, microbial toxins, mycotoxins, chemical toxins, bacterial infections (salmonellosis, shigellosis, vibrio, listeria, etc.) virus and parasitic infections, organizing safe food and water supplies, and issues in food and water safety.

**222.653.01 Food Technology and Health (3 credits)**

Discusses nutritional, chemical, physical, and technological perspectives of food, food ingredients, food quality, food safety, and the regulation thereof. Focuses on the core constituents of foods, and examines the non-nutritional (phytochemical, flavor, pigment, texture and fragrance) constituents of whole foods and food products and their impact on health. Evaluates food delivery and production systems, and specific eating patterns. Critical discussions of food range from the history of food and global dietary staples to probiotics, prebiotics, and the gut microbiome. Sustainability and urban gardening are juxtaposed with institutional food preparation, additives, processing, product development, and the regulatory framework surrounding food and supplements.

**317.600.01/.81 Introduction to the Risk Sciences and Public Policy (4 credits)**

Provides an introduction to the basic paradigm for quantitative risk assessment and illustrates its application in the public policy process using case studies. Examines risk assessment in a broad societal context, considering social, economic, and political factors that affect risk decision-making; evolution of risk assessment; and the use of risk assessment in regulatory processes. Students complete a risk assessment exercise.

**410.620.01/.81 Program Planning for Health Behavior Change (3 credits)**

Provides an overview of the breadth of programs and diversity of settings in the field of health education in health promotion, and an opportunity to develop skills in program planning. Explains the importance of health behavior as a contributor to current public health problems and the role of health education and health promotion programs in addressing them, drawing examples from the literature on community-based health education, patient education, school health, and work-site health promotion. Also discusses issues of ethical standards and quality assurance in health education and health promotion.

**317.610.01/81 Risk Policy, Management and Communication (3 credits)**

Examines the role of the risk sciences in the public policy process. A case study approach presents the broad societal context of risk based decision making, including the scientific, social, economic, legal and political factors that drive the policy process. Provides an overview of risk management tools and the application of risk communication principles and strategies. The goal is to provide an understanding of how the risk sciences are applied in the formulation and implementation of public health risk policy in “the real world.”

*Prerequisite: 317.600 Intro to the Risk Sciences and Public Policy*

**401.650.01/81 Introduction to Persuasive Communications: Theories and Practice (4 credits)**

Examines and interrogates theories of persuasion using lectures, discussions, readings, and assignments so that these theories can be applied to health behavior change interventions. Presents psychological, social, and environmental theories of persuasion as they relate to health behavior. Examines the theoretical underpinnings of persuasive health behavior change interventions. Addresses the strengths and challenges of applying persuasive communication theory to complex health issues. Emphasizes the role of theory in the design, implementation and evaluation of health behavior change interventions.

**305.613.01 Evaluation-Informed Program Development and Implementation (4 credits)**

Since effective evidence-based interventions cannot be developed, implemented, sustained, or transferred into new settings without recognition of context, students focus on integrating program evaluation methods throughout interventions: from early assessments, through program planning or adaptation, testing, delivery and measurement of outcomes. Introduces practical program planning, implementation and evaluation skills applicable in many different areas of public health. Topics include problem definition and analysis; assessing social and environmental factors that may impact the development, adoption, implementation, and outcomes of interventions; identifying intervention points; selecting among educational, regulatory, and technological interventions to achieve maximum likelihood of success; writing measurable program goals and objectives; designing implementation plans; developing an evidence-informed logic model; and program evaluability assessment.

**180.625.01 Environmental Justice: Concepts, Methods and Practice (3 credits)**

Low income communities and communities of color have challenged public health scientists to conduct research on environmental and occupational hazards that may impact their health. Such community-driven research requires environmental health scientists, epidemiologists and other researchers to modify approaches used in more traditional research conducted for stakeholders in government and industry. In this course, an expert researcher of community environmental justice concerns will provide an opportunity to develop facility with concepts, analytic methods and practice topics.

*Prerequisites: Completion of 550.600 Responsible conduct of Research, 180.609 Principles of Environmental Health OR 180.601 Environmental Health.*

**222.654.01 Food, Culture, and Nutrition (4 credits)**

Introduces the bio-cultural influences on nutrition and their relevance to international and domestic public health research and programs. Topics include theoretical and methodological issues in nutritional anthropology, an overview of social scientific contributions to nutrition focusing on cultural perspectives of infant feeding, social impacts on under and over nutrition, comparisons of Eastern and Western traditions of nutrition and the role of nutritional anthropology in the development of public health interventions.

**410.663.01 Media Advocacy and Public Health: Theory and Practice (3 credits)**

Broadens students' understanding of health communication to include the strategic use of the news media to support community organizing to change public health policy. Builds on theoretical and empirical work in mass communications, and uses case examples in a number of health policy areas to show how the strategies and tools of media advocacy may be applied to specific public health policy campaigns. Ample opportunities are provided for students to "practice" media advocacy, in the form of writing letters to the editor and opinion pieces, role-playing interviews, and so on. Introduces students to research literature about news media forms and practices; to framing techniques to influence news content and gain access to news channels; and to the relationship between media advocacy and other forms of health communication.

## Appendix B

### Evidence of Compliance with the Principles of Good Practice (as outlined in COMAR 3B02.03.22C)

#### (a) Curriculum and instruction

- (i) **A distance education program shall be established and overseen by qualified faculty.**

The proposed program will be supported by the School's Center for Teaching and Learning (CTL), which offers an array of evidence-based programs and services that support innovative teaching methods. JHPSH faculty experts will lead and support the development of online courses. Several program faculty members are experienced in developing and supporting online learning. New instructors are required to meet the same qualifications as those teaching in the traditional onsite program.

- (ii) **A program's curriculum shall be coherent, cohesive, and comparable in academic rigor to programs offered in traditional instructional formats.**

All online courses adhere to CTL's course development process with support from experienced instructional designers. Online coursework follows well-established curriculum development standards, tailoring delivery methods, content, and assessments to learning objectives. As outlined in section L, the electronic portfolio will be used to assess students' achievement of program competencies. Each term the School compares student course evaluations for onsite and online courses; these comparisons consistently yield very similar results.

- (iii) **A program shall result in learning outcomes appropriate to the rigor and breadth of the program.**

The program learning outcomes (competencies) are derived with input from professionals within the discipline, the program faculty, program leadership, and other program stakeholders, and are reviewed by the School's Committee on Academic Standards. The desired program outcomes are identical to those achieved in onsite programs.

- (iv) **A program shall provide for appropriate real-time or delayed interaction between faculty and students.**

The proposed [program] will be delivered via the School's course delivery and management system—CoursePlus. This platform supports both synchronous and asynchronous interaction between faculty and students. Students and faculty may also participate in “real-time” interaction through weekly web-conference office hours, supported by Adobe Connect, and pre-scheduled LiveTalks.

- (v) **Faculty members in appropriate disciplines in collaboration with other institutional personnel shall participate in the design of courses offered through a distance education program.**

Faculty members are selected based on domain expertise, program-related teaching experience and completion of required course development training. Faculty will be fully supported by CTL experts.

**(b) Role and mission**

- (i) **A distance education program shall be consistent with the institution's mission.**

Refer to Section A.1 in the main body of the proposal.

- (ii) **Review and approval processes shall ensure the appropriateness of the technology being used to meet a program's objectives.**

All courses offered online are designed in conjunction with CTL and with the support of an instructional designer, multimedia producers, and web specialists. These individuals assist in identifying and recommending the most effective learning technologies for achieving the course learning objectives. The course instructor(s) consults with an instructional designer during the course design process to determine the most effective learning technologies and strategies needed to meet the course learning objectives. The course design goes through multiple reviews by the instructional designer and program directors. Program directors ensure that the course design meets the program's expectations for online courses and that the course learning objectives reflect what the program expects students to achieve after completing the course. The CTL design team continually monitors courses and consults with the instructors to make adjustments, if needed. All new online courses participate in a midterm and end-of-term course evaluation process. Midterm feedback is used to determine if any midterm adjustments are needed and the end-of-term feedback is used to assess whether further course refinements are needed prior to the next time the course is offered.

**(c) Faculty support**

- (i) An institution shall provide for training for faculty who teach with the use of technology in a distance education format, including training in the learning management system and the pedagogy of distance education.**

Online programs are supported by CTL, which offers a number of opportunities and resources for faculty instructors and teaching assistants to become more familiar with online teaching and best pedagogical practices. In addition to maintaining an extensive catalog of resources on teaching and learning via an online Teaching Toolkit, CTL regularly offers events, workshops, and one-on-one office hours to introduce and provide updates on the latest advances in teaching technology and pedagogy.

**Principles of best practice for teaching in a distance education format shall be developed and maintained by the faculty.**

Prior to teaching their first courses, all new online instructors are required to participate in training that conveys, among other things, principles of best practices for online education.

- (ii) An institution shall provide faculty support services specifically related to teaching through a distance education format.**

The Bloomberg School, through CTL, maintains an innovative course management system and provides faculty support and training for online education through a staff of more than 30 individuals who specialize in instructional design, audio production, technical writing, web development, production management and quality control.

- (d) An institution shall ensure that appropriate learning resources are available to students including appropriate and adequate library services and resources.**

The Johns Hopkins University library system includes The William H. Welch Medical Library in the School of Medicine, the Abraham M. Lilienfeld Library in the Bloomberg School of Public Health, and the Milton S. Eisenhower Library on the Homewood campus. Most periodicals, including more than 13,000 journal subscriptions and multiple databases and catalogs, are available to University Faculty, staff and students online from any location in the world. The interlibrary loan department also makes the research collection of the nation available to faculty and students. The libraries offer a variety of instructional services, including electronic classrooms designed to explain the library resources available for research and scholarship. Students have access to all libraries and library informationists.

- (e) Students and student services**

- (i) A distance education program shall provide students with clear, complete, and timely information on the curriculum, course and degree requirements, nature**

**of faculty/student interaction, assumptions about technology competence and skills, technical equipment requirements, learning management system, availability of academic support services and financial aid resources, and costs and payment policies.**

The Bloomberg School maintains numerous web-based resources to inform prospective students on the information they may need as an online student. These resources include the JHSPH website [www.jhsph.edu](http://www.jhsph.edu) and the [Course Catalog](#). These resources offer detailed programmatic information, academic support services, financial aid, costs, policies, etc. and specific information for online learning. As new online students are admitted and enrolled, they receive timely emails with important information to help them prepare to become an online student. These emails include information on technical requirements, available academic support services, and a required orientation course (IOL) for new online students.

- (ii) **Enrolled students shall have reasonable and adequate access to the range of student services to support their distance education activities.**

JHSPH online students have access to the following academic support services:

**Academic advising.** Students are assigned an advisor when accepted. Students work individually with the advisor to develop a course of study that meets the requirements of the program and the career goals of the student. The advisor regularly contacts the students to check on progress and answer questions. Courses that deviate from the program plan and have not been approved by an adviser may not count toward degree requirements.

**Library services.** Students have online access to the William H. Welch Medical Library in the School of Medicine, the Abraham M. Lilienfeld Library in the Bloomberg School of Public Health, and the Milton S. Eisenhower Library on the Homewood campus. The interlibrary loan department allows students access to resources at any other university in the nation. The library also provides easy access to a wide selection of electronic information resources, including the library's online catalog, and numerous electronic abstracting and indexing tools. Many of the databases are accessible remotely. Librarians are available to assist students remotely and the library maintains an extensive web site to take visitors through all its services and materials.

**Disability Support Services.** The Johns Hopkins University is committed to making all academic programs, support services, and facilities accessible to qualified individuals. Students with disabilities who require reasonable accommodations can contact the JHSPH Disability Services' Senior Director.

**Career Services.** The Career Services Office at the Bloomberg School helps students, alumni, faculty, staff, and employers navigate the world of public health jobs.

**Johns Hopkins Student Assistance Program.** The Johns Hopkins Student Assistance Program (JHSAP) is a professional counseling service that can assist students with managing problems of daily living. Stress, personal problems, family conflict, and life challenges can affect the academic progress of students. JHSAP focuses on problem solving through short-term counseling. Accessing the service is a simple matter of a phone call to arrange an appointment with a counselor. Online students contact the service by phone for consultation and are directed to the appropriate resource or office. JHSAP services are completely confidential. The program operates under State and federal confidentiality legislation and is HIPAA compliant.

**Transcript Access.** Students may view and print unofficial transcripts at any time. Official transcripts will be mailed to students upon completion of the program; additional official transcripts will be mailed upon request of the student at minimal charge.

**Student Login IDs.** The University issues each student a Johns Hopkins Enterprise ID (JHED ID) and the School issues a JHSPH ID. The JHED ID grants students a JHU email address and secure access to many online services including course registration, bill payment, official grades, library services, and the online learning platform CoursePlus. Students are also issued a JHSPH ID that provides access to the School's intranet (My JHSPH) where students can locate additional resources including research and administrative tools as well as the School's policy and procedures manual.

**(iii) Accepted students shall have the background, knowledge, and technical skills needed to undertake a distance education program.**

All accepted online students are required to have met the admission requirements stated for the [program]. New online students are required to complete the Introduction to Online Learning (IOL) course prior to beginning their first online courses. IOL covers a broad range of topics on how to be a successful online student such as learning expectations for online students and how to participate in online discussions.

**(iv) Advertising, recruiting, and admissions materials shall clearly and accurately represent the program and the services available.**

All relevant program information is available on the JHSPH web site. All recruiting information includes the URL for the JHSPH website, which contains information available to prospective and current students. The School's Prospectus and Guidebook are posted online, as are school-wide student handbooks and all program-specific handbooks. The School's website contains links to all student-relevant information including admissions requirements, online application and instructions, online registration, student funding resources

and financial aid, and other student support services.

**(f) Commitment to Support**

- (i) Policies for faculty evaluation shall include appropriate consideration of teaching and scholarly activities related to distance education programs.**

Faculty who teach online courses are strongly encouraged to participate in one or two professional development opportunities annually to improve their online teaching skills. Teaching online is viewed no differently than teaching onsite for promotion purposes.

- (ii) An institution shall demonstrate a commitment to ongoing support, both financial and technical, and to continuation of a program for a period sufficient to enable students to complete a degree or certificate.**

JHSPH has a commitment to online teaching as demonstrated by the resources of its Center for Teaching and Learning, which provides course development, instructional, and technical support to new and current faculty. See Appendix D for detailed financial information regarding the proposed program.

**(g) Evaluation and Assessment**

- (i) An institution shall evaluate a distance education program's educational effectiveness, including assessments of student learning outcomes, student retention, student and faculty satisfaction, and cost-effectiveness.**

Please see Section L of the main body of the proposal.

- (ii) An institution shall demonstrate an evidence-based approach to best online teaching practices.**

CTL continually participates in professional development activities to keep abreast of evidence-based approaches to online teaching practices. These online teaching practices are then incorporated into faculty workshops and training sessions.

- (iii) An institution shall provide for assessment and documentation of student achievement of learning outcomes in a distance education program.**

As part of the online course design process, course assessments are required to be aligned with stated courses learning objectives. The proposed program will incorporate authentic assessments that demonstrate students' application of learned skills. Program faculty have experience with developing individual and collaborative assessments for measuring the acquisition of relevant knowledge and

skills through online learning.

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**Appendix C**  
**Faculty**

<b>Name</b>	<b>Terminal Degree</b>	<b>Field</b>	<b>Academic Title/Rank</b>	<b>Status</b>	<b>Courses Taught</b>
Laura Morlock	PhD	Health Policy and Management	Executive Vice Dean for Academic Affairs, Professor	Full-time	<ul style="list-style-type: none"> <li>• Graduate Seminar in Health Care Management and Leadership</li> <li>• Patient Safety and Medical Errors</li> </ul>
Edyth Schoenrich	MD	Health Policy and Management	Associate Chair, MPH Program; Professor	Full-time	<ul style="list-style-type: none"> <li>• Current Issues in Public Health</li> </ul>
James Yager	PhD	Environmental Health Sciences	Deputy Chair, Environmental Health Sciences; Professor	Full-time	<ul style="list-style-type: none"> <li>• Public Health Toxicology</li> <li>• Toxicology 21: Scientific Foundations</li> </ul>
Robert Lawrence	MD	Environmental Health Sciences, International Health	Professor, Founding Director, Johns Hopkins Center for a Livable Future (CLF)	Emeritus	<ul style="list-style-type: none"> <li>• Food Systems and Public Health</li> </ul>
Keeve Nachman	PhD	Environmental Health Sciences, Health Policy and Management	Assistant Professor; Co-director, Risk Sciences and Public Policy Institute; Director, Food Production and Public Health Program, CLF	Full-time	<ul style="list-style-type: none"> <li>• Food Systems and Public Health</li> <li>• Case Studies in Food Production</li> <li>• Intro to Risk Sciences and Public Policy</li> </ul>
Polly Walker	MD, MPH	Environmental Health Sciences	Research Associate	Part-time	<ul style="list-style-type: none"> <li>• Food Systems and Public Health</li> </ul>

Cindy Parker	MD	Environmental Health Sciences,	Assistant Scientist	Full-time	• The Global Environment, Climate Change and Public
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		Arts and Sciences			Health
Brian Schwartz	MD	Environmental Health Sciences, Epidemiology	Professor	Full-time	<ul style="list-style-type: none"> <li>• The Global Environment, Climate Change and Public Health</li> </ul>
Roni Neff	PhD	Environmental Health Sciences, Health Policy and Management	Assistant Professor; Food System Sustainability Program Director, CLF	Full-time	<ul style="list-style-type: none"> <li>• Baltimore Food Systems: Case Study in Urban Food Environments</li> <li>• Food System Sustainability Practicum</li> </ul>
Jillian Fry	PhD	Environmental Health Sciences, Health, Behavior and Society	Assistant Scientist	Full-time	<ul style="list-style-type: none"> <li>• Baltimore Food Systems: Case Study in Urban Food Environments</li> </ul>
Kellogg Schwab	PhD	Environmental Health Sciences, Molecular Microbiology and Immunology	Professor; Director, JHU Water Institute	Full-time	<ul style="list-style-type: none"> <li>• Food- and Water-Borne Diseases</li> </ul>
Keith West	DrPH	International Health (Human Nutrition Division)	Professor	Full-time	<ul style="list-style-type: none"> <li>• Food and Nutrition Policy</li> </ul>
Rebecca Heidkamp	PhD	International Health (Human Nutrition Division)	Assistant Scientist	Full-time	<ul style="list-style-type: none"> <li>• Food and Nutrition Policy</li> </ul>
Jed Fahey	ScD	School of Medicine, International Health	Assistant Professor	Full-time	<ul style="list-style-type: none"> <li>• Food, Technology and Health</li> </ul>
Joel Gittelsohn	PhD	International Health (Human Nutrition Division), Health, Behavior and Society	Professor	Full-time	<ul style="list-style-type: none"> <li>• Food, Culture and Nutrition</li> </ul>
Ligia Paina	PhD	International Health (Health Systems Division)	Assistant Scientist	Full-time	<ul style="list-style-type: none"> <li>• Systems Thinking in Public Health: Applications of Key Methods and Approaches</li> </ul>

David Bashai	PhD	Population, Family and Reproductive Health, Health Behavior and Society, International health, School of Medicine	Professor	Full-time	<ul style="list-style-type: none"> <li>• Systems Thinking in Public Health: Applications of Key Methods and Approaches</li> </ul>
David Peters	MD	International Health (Health Systems Division)	Professor	Full-time	<ul style="list-style-type: none"> <li>• Systems Thinking in Public Health: Applications of Key Methods and Approaches</li> </ul>
Mary Fox	PhD	Health Policy and Management	Assistant Professor; Co-director, Risk Sciences and Public Policy Institute	Full-time	<ul style="list-style-type: none"> <li>• Introduction to the Risk Sciences and Public Policy</li> </ul>
Andrea Gielen	ScD	Health, Behavior and Society; Health Policy and Management; Population, Family and Reproductive Health	Professor; Director, JH Center for Injury Research and Policy	Full-time	<ul style="list-style-type: none"> <li>• Program Planning for Health Behavior Change</li> </ul>
Vanya Jones	PhD	Health, Behavior and Society	Assistant Professor	Full-time	<ul style="list-style-type: none"> <li>• Program Planning for Health Behavior Change</li> </ul>
Meghan Moran	PhD	Health, Behavior and Society	Assistant Professor	Full-time	<ul style="list-style-type: none"> <li>• Intro to Persuasive Communications</li> </ul>
Carolyn Fowler	PhD	School of Nursing, Health Policy and Management	Assistant Professor	Full-time	<ul style="list-style-type: none"> <li>• Evaluation-informed Program Development and Implementation</li> </ul>
Christopher Heaney	PhD	Environmental Health Sciences, Epidemiology	Assistant Professor	Full-time	<ul style="list-style-type: none"> <li>• Environmental Justice: Concepts, Methods, and Practice</li> </ul>
David Jernigan	PhD	Health, Behavior and Society	Associate Professor	Full-time	<ul style="list-style-type: none"> <li>• Media Advocacy and Public Health: Theory and Practice</li> </ul>
Tom Burke	PhD	Health Policy and Management, Environmental Health Sciences	Professor	Part-time	<ul style="list-style-type: none"> <li>• Risk Policy, Management and Communication</li> </ul>

Jessica Jones- Smith	PhD	International Health, Division of Human Nutrition	Assistant Professor	Full-time	• Obesity in Public Health
Sara Bleich	PhD	Health Policy and Management, Health Behavior and Society, International Health, Division of Human Nutrition	Associate Professor	Full-time	• Obesity in Public Health

**Appendix D**  
**Finance Information**

<b>Table 1: Resources</b>					
<b>Resource Categories</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>
<b>1. Reallocated Funds</b>	-	-	-	-	-
<b>2. Tuition/Fee Revenue (c + g below)</b>	\$297,510	\$306,284	\$315,570	\$325,138	\$334,754
<b>a. Number of F/T Students</b>	2	2	2	2	2
<b>b. Annual Tuition/Fee Rate</b>	\$25,320	\$26,080	\$26,862	\$27,668	\$28,498
<b>c. Total F/T Revenue (a x b)</b>	\$50,640	\$52,160	\$53,724	\$55,336	\$56,996
<b>d. Number of P/T Students</b>	13	13	13	13	13
<b>e. Credit Hour Rate</b>	\$1055	\$1086	\$1119	\$1153	\$1187
<b>f. Annual Credit Hour Rate</b>	18	18	18	18	18
<b>g. Total P/T Revenue (d x e x f)</b>	\$246,870	\$254,124	\$261,846	\$269,802	\$277,758
<b>3. Grants, Contracts &amp; Other External Sources</b>	-	-	-	-	-
<b>4. Other Sources</b>	-	-	-	-	-
<b>TOTAL (Add 1 – 4)</b>	<b>\$297,510</b>	<b>\$306,284</b>	<b>\$315,570</b>	<b>\$325,138</b>	<b>\$334,754</b>

Resources narrative:

1. Reallocated Funds: No reallocation of existing resources will be required.
2. Tuition and Fee Revenue: The cost is subject to a 3% increase each year. The expectation is that there will be 2 students full time and 13 part time students over the course of five years.
3. Grants and Contracts: None anticipated
4. Other Sources: None anticipated

<b>Table 2: Expenditures</b>					
<b>Expenditure Categories</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>
<b>1. Faculty (b + c below)</b>	\$115,109	\$118,562	\$122,118	\$125,782	\$129,555
<b>a. # FTE</b>	.80	.80	.80	.80	.80
<b>b. Total Salary</b>	\$85,902	\$88,479	\$91,133	\$93,867	\$96,683
<b>c. Total Benefits</b>	\$29,207	\$30,083	\$30,985	\$31,915	\$32,872
<b>2. Admin. Staff (b + c below)</b>	-	-	-	-	-
<b>a. # FTE</b>	-	-	-	-	-
<b>b. Total Salary</b>	-	-	-	-	-
<b>c. Total Benefits</b>	-	-	-	-	-
<b>3. Support Staff (b + c below)</b>	\$15,008	\$15,458	\$16,399	\$16,891	\$17,397
<b>a. # FTE</b>	.20	.20	.20	.20	.20
<b>b. Total Salary</b>	\$11,200	\$11,536	\$12,238	\$12,605	\$12,983
<b>c. Total Benefits</b>	\$3,808	\$3,922	\$4,161	\$4,286	\$4,414
<b>4. Equipment</b>	-	-	-	-	-
<b>5. Library</b>	-	-	-	-	-
<b>6. New or Renovated Space</b>	-	-	-	-	-
<b>7. Other Expenses</b>	\$82,025	\$84,681	\$87,471	\$90,401	\$93,477
<b>TOTAL (Add 1 – 7)</b>	<b>\$212,142</b>	<b>\$218,701</b>	<b>\$225,988</b>	<b>\$233,074</b>	<b>\$240,429</b>

Expenditures narrative:

1. Faculty: Faculty per section is equivalent to one FT faculty teaching at FTE of 80%. This includes salary and fringe benefits at a rate of 34%.
2. Administrative staff: Not applicable
3. Support staff: 20% of a support staff member's salary with 3% annual increases and benefits at a rate of 34%.
4. Equipment: Not applicable
5. Library: Not applicable
6. New or renovated space: Not applicable
7. Other expenses: Cost of instructional course needs including online support, scholarships for students and stipends for advisors.