MEMORANDUM

TO:      Robert Gold
      Dean, School of Public Health

FROM:    Phyllis Peres
      Associate Provost for Academic Planning and Programs

SUBJECT: Proposal to add a Ph.D. in Epidemiology (PCC log no. 06027)

On June 22, the Board of Regents approved your proposal to create a Ph.D. in
Epidemiology. The Maryland Higher Education Commission gave their approval on June 27.
Attached please find the approved proposal and copies of the approval letters from the
Chancellor and MHEC.

The Ph.D. in Epidemiology is effective Fall 2007. The School of Public Health should
ensure that the program is fully described in the Graduate Catalog and in all relevant descriptive
materials, and that all advisors are informed.

CWR/

Enclosure

cc: Richard Ellis, Chair, Senate PCC Committee
    Sarah Bauder, Office of Student Financial Aid
    Mary Giles, University Senate
    Barbara Hope, Data Administration
    Anne Turkos, Archives
    Linda Yokoi, Office of the Registrar
    Mary Ann Ottinger, Graduate School
    Blakely Pomietto, School of Public Health
June 27, 2007

Dr. C. D. Mote, Jr.
President
University of Maryland, College Park
1101 Main Administration Building
College Park MD 20742

Dear Dr. Mote:

The Maryland Higher Education Commission has reviewed a request from the University of Maryland, College Park to offer a new Doctor of Philosophy (Ph.D.) in Epidemiology. I am pleased to inform you that the new program has been approved. This decision was based on an analysis of the program in conjunction with the Maryland Higher Education Commission's Policies and Procedures for Academic Program Proposals and the Maryland State Plan for Postsecondary Education. The program demonstrates potential for success, an essential factor in making this decision.

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

<table>
<thead>
<tr>
<th>Program Title</th>
<th>Degree Level</th>
<th>HEGIS</th>
<th>CIP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Epidemiology</td>
<td>Ph.D.</td>
<td>0416-01</td>
<td>26.1309</td>
</tr>
</tbody>
</table>

Should the program require any substantial changes in the future, please keep the Commission apprised. I wish you continued success.

Sincerely,

James E. Lyons, Sr.
Secretary of Higher Education

JEL:DES:ggs

cc:  Ms. Theresa Hollander, USM
June 26, 2007

Dr. C.D. Mote, Jr.
University of Maryland, College Park
1101 Main Administration Building
College Park, MD 20742

Dear Dan:

This is to officially inform you that the Board of Regents, meeting in executive session on Friday, June 22, 2007 at University of Maryland, College Park, approved the following new academic program proposals for UMCP:

- Master of Health Administration
- Ph.D. in Health Services
- Ph.D. in Epidemiology
- Ph.D. in Maternal and Child Health

The Education Policy Committee, meeting on June 5, 2007, recommended approval.

Sincerely,

William E. Kirwan
Chancellor

WEK/mn

cc: Irwin Goldstein
    Janice Doyle
THE UNIVERSITY OF MARYLAND, COLLEGE PARK
PROGRAM/CURRICULUM PROPOSAL

DIRECTIONS:

- Provide one form with original approval signatures in lines 1 - 4 for each proposed action. Keep this form to one page in length.
- Early consultation with the Office of the Associate Provost for Academic Planning Programs is strongly recommended if there are questions or concerns, particularly with new programs.
- Please submit the signed form to Claudia Rector, Office of the Associate Provost for Academic Planning and Programs, 1119 Main Administration Building, Campus.
- Please email the rest of the proposal as an MSWord attachment to pcc-submissions@umd.edu.

DATE SUBMITTED: 1/19/07

COLLEGE/SCHOOL: Health and Human Performance

DEPARTMENT/PROGRAM: Department of Epidemiology and Biostatistics

PROPOSED ACTION (A separate form for each) ADD __X__ DELETE _____ CHANGE _____

DESCRIPTION (Provide a succinct account of the proposed action. Details should be provided in an attachment. Provide old and new sample programs for curriculum changes.)

Create a new Ph.D. program in Epidemiology.

JUSTIFICATION/REASONS/RESOURCES (Briefly explain the reason for the proposed action. Identify the source of new resources that may be required. Details should be provided in an attachment.)

See attached.

============================================================= APPROVAL SIGNATURES DATE
1. Department Committee Chair
   [Signature]
   1-23-07

2. Department Chair
   [Signature]
   1-22-07

3. College/School PCC Chair
   [Signature]
   1-22-07

4. Dean
   [Signature]
   1-21-07

5. Dean of the Graduate School (if required)
   [Signature]
   2-11-07

6. Chair, Senate PCC
   [Signature]
   3-2-07

7. Chair of Senate
   [Signature]
   4-10-07

8. Vice President for Academic Affairs Provost
   [Signature]
   4-10-07
PROPOSAL FOR

A NEW PROGRAM SUBMITTED BY A UNIVERSITY SYSTEM OF MARYLAND INSTITUTION IN ACCORD WITH SECTION 11-206.1 OF THE ANNOTATED CODE OF MARYLAND

University of Maryland, College Park

Doctor of Philosophy (Ph.D.) in Epidemiology

HEGIS:  CIP:

Department of Epidemiology and Biostatistics
Unit Offering the Program

Deborah R. Young, Ph.D., Interim Chair
Contact Person

Doctor of Philosophy (Ph.D.) in Epidemiology
Degree to be Awarded

Spring 2007
Proposed
I. OVERVIEW and RATIONALE

A. Briefly describe the nature of the proposed program and explain why the institution should offer it. [You may refer to student demand, market demand for graduates, institutional strengths, disciplinary trends, synergy with existing programs, and/or institutional strategic priorities.]

Goal and Contribution to UMCP Strategic Priorities

The Department of Epidemiology and Biostatistics (EPIB) is proposing to offer a Ph.D. program in Epidemiology. Epidemiology is the study of the distribution and determinants of the varying rates of diseases, injuries, and other health states in human populations. As the fundamental science underlying public health practice, epidemiology provides the conceptual and practical tools necessary for the study of public health problems and the design of adequate control measures. The goal of the proposed Ph.D. program in Epidemiology is to train students for future careers in epidemiologic research and leadership in public health, with a particular emphasis on improving health and reducing health disparities in local communities, Maryland, and the nation.

The proposed program will address one of the University’s top priorities – to ensure that the University’s research has an impact on the community and larger society. It supports the University of Maryland’s mission to “improve the quality of life for the people of Maryland by providing a comprehensive range of high quality, accessible, and affordable educational opportunities; engaging in research and creating scholarship that expand the boundaries of current knowledge; and providing knowledge-based programs and services that are responsive to the needs of the citizens of the state and the nation’” (University System of Maryland, 2006). The proposed Ph.D. program in Epidemiology also supports UMCP’s strategic initiative to “build a strong, university-wide culture of excellence in graduate and professional education, research, (and) scholarship.” Students will learn to use established epidemiological methods to examine the role of environmental, social, behavioral, biological, and genetic factors in the primary and secondary prevention of chronic diseases in order to improve health and eliminate health disparities.

The proposed Ph.D. program in Epidemiology will meet an accreditation requirement for Schools of Public Health established by the Council on Education for Public Health (CEPH). Specifically, accredited Schools must offer at least three doctoral degrees, each in a core area of public health. Thus, the proposed Ph.D. program in Epidemiology will fulfill a CEPH requirement as a doctoral degree program in the core discipline of epidemiology.

Market Demand for Graduates

The Institute of Medicine (IOM) estimates that approximately 450,000 people are employed in the U.S. public health work force, and reports an urgent need for more qualified, graduate level public health professionals to tackle growing public health problems (IOM, 2003). It has been estimated that 80% of public health workers across the nation lack specific public health training, and only 22% of chief executives of public health departments hold graduate degrees in public health (IOM, 2003). Data from the American Public Health Association (APHA) further indicate that 50% of the federal public health workforce and 25% of state public health employees will retire within the next five years (APHA, 2004). The APHA concludes that “this massive attrition in personnel will create a critical shortage of workers that clearly can not be remedied through existing training programs and recruitment efforts.”

Epidemiologists are among the public health personnel in shortest supply (APHA, 2004). Approximately 42% of current epidemiologists lack formal academic training in epidemiology. (APHA, 2004). At the state and county level, only 30% of formally trained epidemiologists have doctoral degrees (APHA, 2004).
Doctorally-prepared epidemiologists are needed to train public health professionals who will work in the public health practice of epidemiology and other public health disciplines at the national, state, and local levels, and in the private sector. They are also needed in research settings to improve the population’s health by identifying determinants of health and patterns of disease. Epidemiology doctoral graduates will be prepared for academic and research positions in Schools of Public Health, Schools of Medicine, and other academic institutions. They also will be prepared for research positions in federal/state/county/local health and human service agencies, private health care and health serving organizations, and private research institutions.

Student Demand

Data from the Association of Schools of Public Health (ASPH) reveal significant growth in applications for doctoral degrees in public health between 1994 and 2004 (ASPH, 2005). Moreover, admissions data from the two nearest private accredited schools indicate that George Washington University accepted less than 40% of graduate applicants to public health programs and Johns Hopkins University accepted less than 25% of all applicants (ASPH, 2005).

The University of Maryland’s peer institutions all have academic departments that offer doctoral degrees in Epidemiology. These programs are within accredited Schools of Public Health and thus, are accredited programs. UCLA and the University of Michigan offer multiple doctoral level degrees (Ph.D. and DrPH). The University of Maryland, Baltimore (UMB) offers a Ph.D. in Epidemiology with an emphasis on determinants of disease in biomedical settings, but the program is not currently accredited. In the state of Maryland, only Johns Hopkins University offers accredited doctoral programs in Epidemiology (Ph.D. and DrPH). In the Washington, DC metropolitan area, only George Washington University offers a Ph.D. in Epidemiology. The closest public university that offers an accredited doctoral program in Epidemiology is the University of North Carolina at Chapel Hill.

The location of UMCP is ideal for academic training in epidemiology. With close proximity to the National Institutes of Health campuses, the National Center for Health Statistics, state and local public health agencies, and other academic, public health, and medical research institutions, there are ample opportunities for students to participate in population-based research and to access relevant data sources needed for high quality epidemiologic training.

B. How big is the program expected to be? From what other programs serving current students, or from what new populations of potential students, onsite or offsite, are you expecting to draw?

A significant number of applicants for the Ph.D. program in Epidemiology should come from our MPH program and other graduate programs in the College of Health and Human Performance. An appreciable number of applications are also expected from students enrolled in the 38 accredited Schools of Public Health in the United States. In addition, our Ph.D. program should be attractive to a broad range of prospective students who have not received prior training in public health, including those with graduate degrees in the life sciences, behavioral sciences, and mathematics or statistics. We also anticipate attracting medical doctors who are interested in pursuing epidemiologic research and mid-career professionals seeking to advance their careers.

We anticipate admitting approximately 2-6 full-time doctoral students per year, all of whom will have completed a master’s degree. Assuming it will take between three to five years to complete the Ph.D. degree (and there is a 10% attrition rate), we predict a cohort of approximately 18 students in the doctoral program once we have attained maximum enrollment capacity.
II. CURRICULUM

A. Provide a full catalog description of the proposed program, including educational objectives and any areas of concentration.

Epidemiology is the study of the distribution and determinants of disease and injury in human populations. Doctoral students are trained to advance knowledge of the patterns and causes of diseases and disabling conditions, to apply epidemiologic methods to the prevention and control of disease/injury, and to promote and improve population health. The broad educational objective of this program is to prepare students for future careers in epidemiologic research and leadership in public health.

The proposed Ph.D. program in Epidemiology will provide students with:

a) Comprehensive knowledge of epidemiologic methods used to understand the causes and prevention of human disease.
b) In-depth understanding of environmental, social and behavioral, biological, and genetic factors associated with primary and secondary prevention of chronic diseases.
c) Expertise in the design and conduct of scientific research using epidemiologic study design and advanced epidemiologic research methods.
d) Training for public health and epidemiology careers in academia and research settings, and for future leadership positions in public health.

The proposed Ph.D. program provides training in epidemiologic methods and content to prepare future public health researchers and academic faculty. Graduates will be able to work within an interdisciplinary framework with public health professionals from various backgrounds to accomplish research goals.

Students in the Ph.D. program will be able to pursue an epidemiology degree with or without content specialization. Currently, one specialization area is proposed: Physical Activity Epidemiology. Although physical inactivity is a leading public health problem in Maryland and the nation, our epidemiology program will be the first to offer a specialization in physical activity. Students who choose to specialize in Physical Activity Epidemiology will take graduate courses offered in the Department of Kinesiology to gain expertise in this content area. As other specialization areas are identified by the Department of Epidemiology and Biostatistics faculty, they will be offered as well. Students who choose not to specialize in a content area will take additional graduate-level elective courses in epidemiology selected in consultation with their advisors.

B. List the courses (number, title, semester credit hours) that would constitute the requirements and other components of the proposed program. Provide a catalog description for any courses that will be newly developed or substantially modified for the program.

As shown in Table 1, the proposed program requires a minimum of 58 graduate credit hours beyond the master’s degree in epidemiology or public health, including 12 credit hours of dissertation research. Students entering the program with a master’s degree in a field other than epidemiology are required to take epidemiology and biostatistics coursework (see Table 1) to gain competency in these content and method areas. A minimum of 12 credit hours in a cognate area (e.g. Physical Activity Epidemiology) is required for specialization (included in the 58 credits). Students admitted to the Ph.D. program advance to candidacy upon completing required coursework and passing a written comprehensive examination with an oral defense. After advancement to candidacy, students must complete a dissertation proposal and oral defense, followed by successful completion of the doctoral dissertation and oral defense.
Table 1: Proposed Ph.D. Program in Epidemiology

<table>
<thead>
<tr>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EPIB 610 Foundations of Epidemiology</td>
<td>3</td>
</tr>
<tr>
<td>EPIB 611 Intermediate Epidemiology</td>
<td>3</td>
</tr>
<tr>
<td>EPIB 612 Epidemiologic Study Design</td>
<td>3</td>
</tr>
<tr>
<td>EPIB 620 Chronic Disease Epidemiology</td>
<td>3</td>
</tr>
<tr>
<td>EPIB 622 Social Determinants of Health</td>
<td>3</td>
</tr>
<tr>
<td>EPIB 650 Biostatistics I</td>
<td>3</td>
</tr>
<tr>
<td>EPIB 651 Biostatistics II</td>
<td>3</td>
</tr>
<tr>
<td>EPIB 652 Categorical Data Analysis</td>
<td>3</td>
</tr>
<tr>
<td>EPIB 653 Survival Data Analysis</td>
<td>3</td>
</tr>
<tr>
<td>EPIB 654 Clinical Trials Analysis</td>
<td>3</td>
</tr>
<tr>
<td>EPIB 655 Longitudinal Data Analysis</td>
<td>3</td>
</tr>
<tr>
<td>EPIB 710 Epidemiologic Research Methods</td>
<td>3</td>
</tr>
<tr>
<td>EPIB 788 Critical Readings</td>
<td>3</td>
</tr>
<tr>
<td>EPIB 740 Advanced Methods in Epidemiology</td>
<td>3</td>
</tr>
<tr>
<td>EPIB 789 Independent Study</td>
<td>3</td>
</tr>
<tr>
<td>EPIB 899 Doctoral Dissertation Research</td>
<td>12</td>
</tr>
</tbody>
</table>

Total Credits for Proposed Ph.D. Program in Epidemiology: 58

Recommended Electives for Ph.D. in Epidemiology

EPIB 621 Infectious Disease Epidemiology (3 credits)
EPIB 623 Epidemiology of Health Disparities (3 credits)
EPIB 624 Genetics in Public Health (3 credits)
EPIB 625 Epidemiology of Physical Activity (3 credits)
EPIB 626 Epidemiology of Obesity (3 credits)
Additional electives may be taken with the consent of the student’s advisor.

Cognate Courses for Physical Activity Epidemiology

KNES 689J Principles and Methods of Physical Activity Interventions
KNES 691 Muscular Aspects of Exercise Physiology
KNES 692 Cardiovascular Aspects of Exercise Physiology
KNES 694 Metabolic Aspects of Exercise Physiology

Courses for Ph.D. in Epidemiology

All courses in the program are described below. All courses except EPIB 610 and EPIB 650 are new. EPIB 610 and EPIB 650 are courses formerly taught in the Department of Public and Community Health, but have been reassigned to the Department of Epidemiology and Biostatistics.

EPIB 610 Foundations of Epidemiology: Overview of the discipline of epidemiology, basic concepts and methods, and applications of epidemiology to health and disease.
**EPIB 611 Intermediate Epidemiology:** Analysis of epidemiologic methods as applied to epidemiologic research, analysis of bias, confounding, effect modification issues, overview of design, implementation, and analysis of epidemiologic studies. Prerequisite: EPIB610, EPIB650

**EPIB 612 Epidemiologic Study Design:** Application of epidemiologic study designs, analytic methods used for analysis of cohort, case-control, cross-sectional, and clinical trials research. Prerequisites: EPIB610, EPIB611, EPIB650

**EPIB 620 Chronic Disease Epidemiology:** Overview of prevalence and risk factors for major chronic diseases. Discussion of methodological issues unique to specific chronic diseases. Prerequisite: EPIB610

**EPIB 621 Infectious Disease Epidemiology:** Overview of the unique aspects of infectious diseases and the epidemiological methods used in their study, prevention, and control. Prerequisite: EPIB610

**EPIB 622 Social Determinants of Health:** Overview of major social variables that affect public health, including socioeconomic status, poverty, income distribution, race, social networks/support, community cohesion, psychological stress, gender, and work and neighborhood environment. Prerequisite: EPIB610

**EPIB 623 Epidemiology of Health Disparities:** Discussion of determinants that influence health outcomes of the most disadvantaged populations in the United States. Focus on social factors contributing to health disparities and inequities in the US.

**EPIB 624 Genetics in Public Health:** Emerging role of genetics in public health; overview of basic tenets of human genetics; examination of how public health practice and research are influenced by genetics and ethical issues specific to genetics. Prerequisite: EPIB610

**EPIB 625 Epidemiology of Physical Activity:** Overview of evidence of the epidemiological association of physical activity to a variety of health outcomes, application of epidemiological methods to the science of physical activity and health. Prerequisite: EPIB610

**EPIB 626 Epidemiology of Obesity:** Overview of the epidemiology, prevention, and treatment of obesity, its causes and consequences, and energy balance issues; application of epidemiologic methods to the study of obesity epidemiology. Prerequisite: EPIB610

**EPIB 641 Public Health and Research Ethics:** Overview and discussion of ethical issues that face public health practitioners and scientific researchers.

**EPIB 650 Biostatistics I:** Basic descriptive concepts and procedures for inferential statistics; focus on applications, hands-on experience, and interpretation of statistical results.

**EPIB 651 Biostatistics II:** Introduction to a variety of statistical tools with applications in public health, including simple and multiple regression, experimental design, categorical data analysis, logistic regression, and survival analysis. Prerequisite: EPIB650

**EPIB 652 Categorical Data Analysis:** Methods for the analysis of categorical data as applied to public health research, including variables with two or more categories, analysis of data structures that are counted, ordered, censored, or subject to selection. Prerequisites: EPIB650, EPIB651

**EPIB 653 Survival Data Analysis:** Overview of statistical methods for analyzing censored survival data, including the Kaplan-Meier estimator and the log-rank test. Prerequisites: EPIB650, EPIB651
**EPIB 654 Clinical Trials Analysis**: Principles of clinical trial design, including randomization strategies, design and analytic issues to minimize threats to validity, sample size and power calculations, intention to treat analyses. Prerequisites: EPIB650, EPIB651

**EPIB 655 Longitudinal Data Analysis**: Statistical models for drawing scientific inferences from longitudinal data, longitudinal study design, repeated measures and random effects to account for experimental designs that involve correlated responses, handling of missing data. Prerequisites: EPIB650, EPIB651

**EPIB 710 Epidemiologic Research Methods**: In-depth study of the knowledge and skills needed to design, conduct, and evaluate an epidemiologic research study. Development of a complete research proposal. Prerequisites: EPIB610, EPIB611, EPIB612, EPIB650, EPIB651

**EPIB 740 Advanced Methods in Epidemiology**: In-depth investigation of epidemiologic methods for making causal inferences and solving complex methodological problems. Multivariate models emphasized. Prerequisites: EPIB610, EPIB611, EPIB612, EPIB650, EPIB651

**EPIB 788 Critical Readings**: In-depth examination and critical discussion of the current literature relevant to epidemiology and public health, emphasizing application of epidemiologic and biostatistical methods. Prerequisites: EPIB610, EPIB650

**KNES 689J Principles and Methods of Physical Activity Interventions**: In-depth examination of the planning, implementation, and evaluation of physical activity interventions and programs.

**KNES 691 Muscular Aspects of Exercise Physiology**: Skeletal muscle structure and function including muscle development, excitation-contraction coupling, muscle fiber types and fatigue, muscle biochemistry, gene expression, muscle damage and regeneration. The effects of aging and exercise training on skeletal muscle. Prerequisite: KNES 360

**KNES 692 Cardiovascular Aspects of Exercise Physiology**: A comprehensive consideration of the various cardiovascular factors affecting human physical performance. Emphasis on the regulation of cardiovascular functions during physical activity. Energy liberation and transfer, circulation, respiration, temperature regulation, physiology of work at altitudes, aerobic endurance training, and exercise, health and aging. Prerequisite: KNES 360

**KNES 694 Metabolic Aspects of Exercise Physiology**: Effects of exercise on digestion, absorption, transport, storage, mobilization, and utilization of macronutrients. Emphasis on the effects of exercise training on energy metabolism. Prerequisite: KNES 360 or KNES 690

**Sample Student Schedule**
Below is a table showing how a typical Ph.D. student with a specialization in Physical Activity can complete the required coursework over a three-year period (including one year of dissertation).

<p>| Schedule for Full-Time Ph.D. Student in Epidemiology |
|---------------------------------------------------|----------------------------------------------------------|</p>
<table>
<thead>
<tr>
<th>Fall 1 (10)</th>
<th>Spring 1 (10)</th>
<th>Summer 1 (3)</th>
<th>Fall 2 (10)</th>
<th>Spring 2 (10)</th>
<th>Summer 2 (3)</th>
<th>Fall 3 (6)</th>
<th>Spring 3 (6)</th>
</tr>
</thead>
<tbody>
<tr>
<td>EPIB 652</td>
<td>EPIB 641</td>
<td>Elective III</td>
<td>EPIB 710</td>
<td>EPIB 789</td>
<td>EPIB 789</td>
<td>EPIB 899</td>
<td>EPIB 899</td>
</tr>
<tr>
<td>EPIB 788</td>
<td>EPIB 740</td>
<td></td>
<td>EPIB 788</td>
<td>Elective V/</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Elective I/</td>
<td>Elective II/</td>
<td></td>
<td>EPIB 626</td>
<td>EPIB 625</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EPIB 624</td>
<td>EPIB 655</td>
<td></td>
<td>KNES 691</td>
<td>KNES 689J</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>KNES 692</td>
<td>KNES 694</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
C. Describe any selective admissions policy or special criteria for students selecting this field of study.

Applicants to the Epidemiology Ph.D. program must have completed a master’s degree with a thesis option prior to their acceptance into the program. All applicants must submit: Undergraduate and Graduate transcripts, Graduate Record Examination (GRE) scores, letters of recommendation from 3 persons competent to judge the applicant’s probability of success in graduate school, and the graduate school essay describing professional goals and relevant work and research experience.

In addition to Graduate School requirements, admission decisions for the program will be based on the quality of previous undergraduate and graduate course work, the strength of GRE scores, the relevance of prior work and research experience, and the congruence of professional goals with those of the program. Special consideration will be given to students with prior coursework that demonstrates proficiency in biostatistics and human biology and/or physiology. Students should submit application materials for the fall semester by January 15th. This program does not accept applications for Spring semester admission.

D. How will the program increase students’ technology fluency?

Students entering the program will have completed a master's degree in a field that is strongly dependent on information technology as a tool for writing and for research. They will have had extensive exposure to information search engines and library retrieval systems. The doctoral program will continue to build on this experience by providing advanced training in statistical software used for learning and research. Coursework will enhance students’ skills in locating, accessing, searching, and analyzing large data sets. Required courses will orient students to classroom technological advances that enhance the learning environment, and they will help students to hone their technology skills throughout the doctoral program.

III. STUDENT LEARNING OUTCOMES AND ASSESSMENT

List the program’s learning outcomes and explain how they will be measured and assessed.

Outcome 1: Demonstrate competence in epidemiologic science, including research methods and foundational content.

Measure: Number of students who successfully complete a comprehensive examination.

Criterion: Prior to graduating from the program, at least 80% of doctoral students will pass all 3 sections of their comprehensive exams, and 100% will pass 2 out of 3 sections.

Assessment: Outcomes will be assessed every year beginning in Fall 2009.

Outcome 2: Demonstrate competence in epidemiological research.

Measure: Percentage of students who successfully present papers at scientific meetings and submit articles to peer-reviewed journals.

Criterion 1: 100% of doctoral students will give at least one presentation at a national or regional scientific meeting prior to graduation.

Criterion 2: 80% of doctoral students will have at least one manuscript accepted for publication in a refereed journal prior to graduation.

Assessment: Outcomes will be assessed every year beginning in Fall 2008.
Outcome 3: Demonstrate ability to complete an independent research project.

Measure 1: Number of students who successfully complete an oral defense of a dissertation proposal, in which the students demonstrate knowledge in a specialized domain and the ability to conduct independent research.

Criterion: At least 80% of doctoral students will advance to candidacy after the proposal defense.

Assessment: Outcomes will be assessed every year beginning in Fall 2009.

Measure 2: Number of students who successfully complete the dissertation and oral defense, demonstrating mastery of the dissertation research topic, research design, and the contributions of their independent research to an area relevant to epidemiology.

Criterion: At least 80% of doctoral candidates will successfully complete and defend the dissertation and graduate.

Assessment: Outcomes will be assessed every year beginning in Fall 2010.

IV. FACULTY AND ORGANIZATION

A. Who will provide academic direction and oversight for the program? (This might be a department, a departmental subgroup, a list of faculty members, or some other defined group.)

Direction and oversight of the proposed Ph.D. program will be provided by the Department of Epidemiology and Biostatistics. There are presently 3 full-time tenured/tenure track faculty members within the department. Two hold their Ph.D. degrees in Epidemiology and one has post-doctoral training and research experience in Epidemiology. The Interim Chair is being reviewed for promotion to full professor in 2006-07. There are additional affiliate faculty members in the College of Health and Human Performance who have training in epidemiology or related disciplines and are well-prepared to teach epidemiology courses. The Department is conducting a search for at least one additional faculty member in Epidemiology and three to four faculty members in Biostatistics who will develop additional relevant coursework. Graduate coursework relative to students’ interests will also be available from other departments/units in the proposed School of Public Health (Departments of Kinesiology, Family Studies, Public and Community Health, and Health Services Administration, and the Maryland Institute for Applied Environmental Health). Departmental, affiliate, and adjunct faculty will be available to serve on doctoral dissertation committees where appropriate.

Epidemiology and Biostatistics Faculty Scheduled to Teach in Proposed Epidemiology Ph.D. Program

Olivia Carter-Pokras, Ph.D., Associate Professor, EPIB
  Teaching/research focus: health disparities, epidemiology and health policy for Latino health, children’s environmental health
  Courses:  EPIB 610 Foundations of Epidemiology
            EPIB 620 Chronic Disease Epidemiology
            EPIB 623 Epidemiology of Health Disparities

Dushanka Kleinman, DDS, MPH, Associate Dean for Research and Academic Affairs, Professor, EPIB
  Teaching/research focus: Epidemiologic studies of dental, oral and craniofacial diseases, oral cancer and HIV-related condition
  Courses: TBN

Sunmin Lee, Sc.D., Assistant Professor, EPIB
  Teaching/research focus: social determinants of health, stress from caregiving, psychosocial work environment, effects of changes in marital status on health behaviors
Courses:  EPIB 612 Epidemiologic Study Design  
EPIB 622 Social Determinants of Health  
EPIB 710 Epidemiologic Research Methods

Deborah Rohm Young, Ph.D., Associate Professor and Interim Chair, EPIB  
Teaching/research focus: community-based physical activity interventions, physical activity assessment, minority populations, cardiovascular disease  
Courses:  EPIB 625 Epidemiology of Physical Activity  
EPIB 641 Public Health and Research Ethics

TBN, New Assistant Professor, Department of Epidemiology and Biostatistics  
Teaching/research focus: Epidemiology  
Courses:  EPIB 611 Intermediate Epidemiology  
EPIB 740 Advanced Methods in Epidemiology

TBN, New Assistant Professors, Biostatistics (3)  
Teaching/research focus: Biostatistics  
Courses:  EPIB 651 Biostatistics II  
EPIB 652 Categorical Data Analysis  
EPIB 653 Survival Data Analysis  
EPIB 654 Clinical Trials Analysis  
EPIB 655 Longitudinal Data Analysis

College of Health and Human Performance Faculty Scheduled to Teach in Proposed Ph.D. Program

Min Qi Wang, Ph.D., Professor, Public and Community Health  
Teaching/research focus: applied biostatistics in public health, health risk assessment and prevention, program evaluation, drug use and HIV risk-related behaviors  
Course:  EPIB 650 Biostatistics I

Stephen Roth, Ph.D. Assistant Professor, Kinesiology  
Teaching/research focus: genetic variation in body composition, sarcopenia risk, exercise responses, other health-related phenotypes  
Course:  EPIB 624 Genetics in Public Health

B. If the program is not to be housed and administered within a single academic unit, provide details of its administrative structure.

Not applicable. All classes will be housed and administered within the Department of Epidemiology and Biostatistics.

V. OFF CAMPUS PROGRAMS

A. If the program is to be offered to students at an off-campus location, with instructors in classrooms and/or via distance education modalities, indicate how student access to the full range of services (including advising, financial aid, and career services) and facilities (including library and information facilities, and computer and laboratory facilities if needed) will be assured.

Not applicable. All classes will be offered on the University of Maryland, College Park campus.
B. If the program is to be offered mostly or completely via distance education, you must describe in detail how the concerns in Principles and Guidelines for Online Programs are to be addressed.

Not applicable. No part of the program will be offered via distance education.

VI. OTHER ISSUES

A. Describe any cooperative arrangements with other institutions or organizations that will be important for the success of this program.

The College of Health and Human Performance at UMCP has established a Memorandum of Understanding to share resources with the School of Health at the University of Maryland at Baltimore (UMB). UMCP and UMB will share academic resources, fund seed grants to support inter-institutional research, and make courses available to graduate students from both campuses. HLHP is currently creating a Memorandum of Understanding with Prince George’s County Health Department to develop graduate student internships and to collaborate on health research and demonstration projects that will benefit county residents.

B. Will the program require or seek accreditation? Is it intended to provide certification or licensure for its graduates? Are there academic or administrative constraints as a consequence?

The proposed School of Public Health will seek accreditation from the Council on Education for Public Health (CEPH), which will review all academic programs and accredit the School. CEPH is an independent agency, recognized by the U.S. Department of Education, which accredits schools and programs of public health. CEPH accreditation will ensure students, employers, and the general public that UMCP’s new graduate programs meet the highest standards for education in public health.

VII. COMMITMENT TO DIVERSITY

Identify specific actions and strategies that will be utilized to recruit and retain a diverse student body.

The Department of Epidemiology and Biostatistics has a strong commitment to recruiting and retaining a diverse student body. Two of its three current faculty members are minorities (Asian, Latino) and all are women. One major focus of the department, to reduce health disparities, furthers this commitment by providing research opportunities that should be attractive to students from diverse backgrounds. Racial and ethnic diversity is addressed throughout the curricula of the Department. The reputations of the faculty and the research they do in minority populations will help us to recruit and retain a diverse student body for the proposed Ph.D. program.

The Department will work closely with the HLHP Assistant Dean for Diversity and the Director of the UMCP Graduate Office of Recruitment, Retention, and Diversity, to attract students from underrepresented groups to the new doctoral program. Faculty will recruit prospective students at national and regional professional conferences, including annual meetings of the American Public Health Association and the Society for Epidemiologic Research. The Department will host campus visits of prospective students from targeted minority institutions, including the historically black colleges in Maryland and the surrounding region. Faculty will also seek help from colleagues on other campuses in identifying minority graduate students who may be interested in the Maryland program and its research foci.
In addition, faculty will work to secure financial support to ensure a diverse student body. At least one faculty member has had prior success in securing funding for minority students using the National Heart, Lung, and Blood Institute’s Minority Supplement Fellowship program. Faculty will recommend graduate students for national, state, and campus fellowships.

VIII. REQUIRED PHYSICAL RESOURCES

The establishment of this doctoral program is within the context of the creation of the proposed School of Public Health. In order to achieve accreditation by the Council on Education for Public Health, the proposed School of Public Health must include three doctoral degrees, each in a core discipline of public health. Health services is one of the core disciplines (epidemiology, biostatistics, health services, health behavior and environmental health) and will complete one of the three doctoral program requirements along with the current doctorate in public and community health (public health behavior) and the proposed doctorate in epidemiology.

The proposed doctorate can be implemented in accordance with Section 11 206.1 in which programs developed under this provision can be implemented within existing resources of the campus. In proceeding with the submission of this program, the institution’s president certifies that no new general funds will be required for the implementation of this doctoral program.

A. Additional library and other information resources required to support the proposed program.

The attached memorandum from the Library’s Collection Management Team describes existing library holdings and new library resources needed for the Epidemiology Ph.D. program. The Provost will provide funding to meet library needs for this doctoral program.

B. Additional facilities, facility modifications, and equipment that will be required. This is to include faculty and staff office space, laboratories, special classrooms, computers, etc.

The Department has adequate space in HHP to house current faculty and students in the proposed program. The College’s classroom facilities will be used to teach the new courses. No laboratories or computer labs are needed to operate the program.

C. Impact, if any, on the use of existing facilities and equipment. Examples are laboratories, computer labs, specially equipped classrooms, and access to computer servers.

See response above to VIII.B.

IX. RESOURCE NEEDS and SOURCES

Describe the resources that are required to offer this program, and the source of these resources. Project this for five years. In particular:

A. List new courses to be taught, and needed additional sections of existing courses. Describe the anticipated advising and administrative loads. Indicate the personnel resources (faculty, staff, and teaching assistants) that will be needed to cover all these responsibilities.

The proposed Ph.D. program was designed to build on the strength of the new faculty and courses proposed in the newly approved Department of Epidemiology and Biostatistics. Resources provided by
the Provost to expand the current College of Health and Human Performance and re-shape it as the School of Public Health are adequate to offer this program. The proposed program will require the new courses described elsewhere in this proposal.

**B. List new faculty, staff, and teaching assistants needed for the responsibilities in A, and indicate the source of the resources for hiring them.**

Funds allocated for the creation of the School of Public Health, as well as reallocated resources from the College of Health and Human Performance will provide the financial support for the faculty members necessary to offer the program. The Department of Epidemiology has a current search open for a new faculty member who will hold a doctoral degree in epidemiology from an accredited School of Public Health.

The PhD program will be supported, in part, by tuition revenue from new Ph.D. students. EPIB has also requested funds for 8 2-year Graduate Assistantships from the Dean of HLHP over the 5-year period between 2007-08 and 2011-2012. These Graduate Assistantships will come from funds provided to the College/School by the Provost as specific milestones are met in new graduate student enrollments. Soft money support will be provided in the initial years of the program, to be incrementally replaced by hard money allocations when program milestones are met (see page 19, School of Public Health proposal). Graduate Fellowships for the Ph.D. program will be sought over time from the Dean of the Graduate School.

EPIB’s most important need associated with implementation of the MCH Ph.D. program is for additional Graduate Assistantships. These GA positions are entered on MHEC Table 2, Expenditures, as “Support Staff” expenses. These positions will enable the Department to be competitive in recruiting the most outstanding students.

**C. Some of these teaching, advising, and administrative duties may be covered by existing faculty and staff. Describe your expectations for this, and indicate how the current duties of these individuals will be covered, and the source of any needed resources.**

As described above, teaching, advising, and administrative duties will be handled by existing faculty members, a new faculty member, and existing administrative staff.

**D. Identify the source to pay for the required physical resources identified in Section XII above.**

EPIB will not request additional physical resources in HHP. If minor renovations are required for existing facilities (e.g., carpeting), the Department will cover this expense. The Department will draw on DRIF and summer school/winterterm revenues to provide telephones and office furniture for these offices.

**E. List any other required resources and the anticipated source for them.**

As with Ph.D. programs in our School, the Department will annually provide some financial support to doctoral students who present their work at professional conferences. The Department will also commit some funds to advertising the new program, especially in the first two years. This support, projected will come from EPIB DRIF funds and summer school/winterterm revenue.

**F. Provide the information requested in Table 1 and Table 2 (for Academic Affairs to include in the external proposal submitted to USM and MHEC).**
## MHEC TABLE 1: RESOURCES Epi PhD Program

<table>
<thead>
<tr>
<th>Resource Categories</th>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
<th>Year 4</th>
<th>Year 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Reallocated Funds</td>
<td>$170,700</td>
<td>$206,328</td>
<td>$227,181</td>
<td>$263,268</td>
<td>$284,599</td>
</tr>
<tr>
<td>a. Department</td>
<td>$106,015</td>
<td>$110,256</td>
<td>$114,666</td>
<td>$119,253</td>
<td>$124,023</td>
</tr>
<tr>
<td>b. HLHP</td>
<td>$5,000</td>
<td>$5,200</td>
<td>$5,408</td>
<td>$5,624</td>
<td>$5,849</td>
</tr>
<tr>
<td>c. Total Benefits*</td>
<td>$29,684</td>
<td>$30,872</td>
<td>$32,107</td>
<td>$33,391</td>
<td>$34,726</td>
</tr>
<tr>
<td>c. UMCP Graduate School / Provost</td>
<td>$30,000</td>
<td>$60,000</td>
<td>$75,000</td>
<td>$105,000</td>
<td>$120,000</td>
</tr>
<tr>
<td>2. Tuition/Fee Revenue (c+g below)</td>
<td>$15,150</td>
<td>$45,450</td>
<td>$87,870</td>
<td>$82,860</td>
<td>$99,680</td>
</tr>
<tr>
<td>a. # Full Time Students</td>
<td>1</td>
<td>3</td>
<td>7</td>
<td>11</td>
<td>16</td>
</tr>
<tr>
<td>b. Annual Tuition/Fee Rate*</td>
<td>$9,090</td>
<td>$9,090</td>
<td>$9,090</td>
<td>$9,090/$1,360</td>
<td>$9,090/$1,360</td>
</tr>
<tr>
<td>c. Total Full Time Revenue (a x b)</td>
<td>$9,090</td>
<td>$27,270</td>
<td>$63,630</td>
<td>$58,620</td>
<td>$75,440</td>
</tr>
<tr>
<td>d. # Part Time Students</td>
<td>1</td>
<td>3</td>
<td>4</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>e. Credit Hour Rate</td>
<td>$505</td>
<td>$505</td>
<td>$505</td>
<td>$505</td>
<td>$505</td>
</tr>
<tr>
<td>f. Annual Credit Hours</td>
<td>12</td>
<td>36</td>
<td>48</td>
<td>48</td>
<td>48</td>
</tr>
<tr>
<td>g. Total Part Time Revenue (d x e x f)</td>
<td>$6,060</td>
<td>$18,180</td>
<td>$24,240</td>
<td>$24,240</td>
<td>$24,240</td>
</tr>
<tr>
<td>3. Grants, Contracts, and Other External Sources</td>
<td>$0</td>
<td>$0</td>
<td>$15,000</td>
<td>$15,600</td>
<td>$16,224</td>
</tr>
<tr>
<td>4. Other Sources: UMCP Provost - Library</td>
<td>$8,170</td>
<td>$8,824</td>
<td>$9,529</td>
<td>$10,292</td>
<td>$11,115</td>
</tr>
<tr>
<td>TOTAL (Add 1 - 4)</td>
<td>$194,020</td>
<td>$260,601</td>
<td>$339,580</td>
<td>$372,020</td>
<td>$411,618</td>
</tr>
</tbody>
</table>

* Annual tuition based on 80% in-state plus 20% out-of-state rates for an average of $505/credit x 18 credit hours per student in first two years; tuition candidacy for two years at resident rate of $1,360/year ($680/semester)
MHEC TABLE 2: EXPENDITURES Epi PhD Program

<table>
<thead>
<tr>
<th>Expenditure Categories</th>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
<th>Year 4</th>
<th>Year 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Faculty (b+c below)</td>
<td>$127,252</td>
<td>$132,342</td>
<td>$163,786</td>
<td>$170,337</td>
<td>$177,151</td>
</tr>
<tr>
<td>a. FTE</td>
<td>1.05</td>
<td>1.05</td>
<td>1.25</td>
<td>1.25</td>
<td>1.25</td>
</tr>
<tr>
<td>b. Total Salary</td>
<td>$99,415</td>
<td>$103,392</td>
<td>$127,958</td>
<td>$133,076</td>
<td>$138,399</td>
</tr>
<tr>
<td>c. Total Benefits*</td>
<td>$27,836</td>
<td>$28,950</td>
<td>$35,828</td>
<td>$37,261</td>
<td>$38,752</td>
</tr>
<tr>
<td>2. Admin Staff (b+c below)</td>
<td>$8,448</td>
<td>$8,786</td>
<td>$9,137</td>
<td>$9,503</td>
<td>$9,883</td>
</tr>
<tr>
<td>a. FTE</td>
<td>0.20</td>
<td>0.20</td>
<td>0.20</td>
<td>0.20</td>
<td>0.20</td>
</tr>
<tr>
<td>b. Total Salary</td>
<td>$6,600</td>
<td>$6,864</td>
<td>$7,139</td>
<td>$7,424</td>
<td>$7,721</td>
</tr>
<tr>
<td>c. Total Benefits</td>
<td>$1,848</td>
<td>$1,922</td>
<td>$1,999</td>
<td>$2,079</td>
<td>$2,162</td>
</tr>
<tr>
<td>3. Support Staff (b+c below)</td>
<td>$48,180</td>
<td>$96,360</td>
<td>$120,450</td>
<td>$168,630</td>
<td>$192,720</td>
</tr>
<tr>
<td>a. FTE</td>
<td>2</td>
<td>4</td>
<td>5</td>
<td>7</td>
<td>8</td>
</tr>
<tr>
<td>b. Total Salary**</td>
<td>$30,000</td>
<td>$60,000</td>
<td>$75,000</td>
<td>$105,000</td>
<td>$120,000</td>
</tr>
<tr>
<td>c. Total Benefits***</td>
<td>$18,180</td>
<td>$36,360</td>
<td>$45,450</td>
<td>$63,630</td>
<td>$72,720</td>
</tr>
<tr>
<td>4. Equipment</td>
<td>$10,000</td>
<td>$5,000</td>
<td>$5,000</td>
<td>$5,000</td>
<td>$5,000</td>
</tr>
<tr>
<td>5. Library</td>
<td>$8,170</td>
<td>$8,824</td>
<td>$9,529</td>
<td>$10,292</td>
<td>$11,115</td>
</tr>
<tr>
<td>6. New or Renovated Space</td>
<td>$10,000</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td>7. Other Expenses</td>
<td>$5,000</td>
<td>$10,000</td>
<td>$10,000</td>
<td>$12,000</td>
<td>$12,000</td>
</tr>
<tr>
<td>TOTAL (Add 1 - 7)</td>
<td>$217,050</td>
<td>$261,311</td>
<td>$317,903</td>
<td>$375,762</td>
<td>$407,869</td>
</tr>
</tbody>
</table>

* Fringes calculated at 28% for Faculty
** This figure includes Graduate Assistantship stipends only
*** This figure includes tuition remission only and is calculated at #FTE x $505/credit x 18 credits/year

References


