Master of Public Health/Master of Science in Nutrition Dual Degree Proposal

(Plan B, non-thesis requiring)

Document of December 8, 2014; Revised February 2, 2015

This is a dual degree program that is offered jointly by the Departments of Epidemiology and Biostatistics, and Nutrition. The core Master Degree courses include a mixture of those from nutrition, biochemistry and public health.

1. Background and Justification

The World Health Organization, (WHO), identifies diabetes mellitus as one of the most common condi

2. Administration

Program administration and governance will be managed jointly by program liaisons identified from Public Health, Nutrition and Biochemistry. Liaisons will meet at least once per semester to assure effective program management. Each liaison will also work within management structure of their own program in order to meet necessary liaison responsibilities. Program leadership has substantial experience with dual degree program administration, with 9 successfully managed dual degrees offered by the MPH program. Dual degree students make up 40 to 45% of the MPH student body. Dual degree management is bolstered by the MPH Management Team which meets on a weekly basis to discuss administrative issues and review student progress. Retreats are conducted 4 times yearly to discuss “big issues” that require input from the MPH executive committee. The Management Team includes representatives from the Student Public Health Assembly who have to opportunity to bring student issues and contribute to program decision-making. These students are dismissed during discussion of individual student progress.

- Master of Public Health liaison: Scott Frank, Associate Professor of Epidemiology and Biostatistics
- Nutrition Department liaison: Hope Barkoukis, Associate Professor of Nutrition

Responsibilities of the liaisons include:

- Program policy decision-making: Liaisons will make policy recommendations through appropriate structure in each department.
- First level student advising: Meeting with all MPH/Nutrition dual degree students to assure appropriate networking of the student into the program.
- Assign faculty advisors: Public Health and Nutrition will each identify a primary faculty advisor for MPH/Nutrition dual degree students, though if a better match is apparent the liaison may assign a different advisor.
- Systematic review of student progress: This task will be addressed independently by each program through existing mechanisms and further discussed at liaison meetings.
- Oversee recruitment and admission of MPH/Nutrition dual degree students.
- Participate in a yearly meeting of MPH dual degree liaisons from all dual degree programs to compare program progress and discuss dual degree issues that cross disciplinary boundaries.
- Oversee routine and special communications with MPH/Nutrition dual degree students, including delegation of these communications as appropriate.

3. Program Structure

If one were to acquire the MPH and MS degrees independently, it would require the completion of 42 hours for the MPH program and 30 hours for the MS in Nutrition program (a total 02.558 end end ew 22.Mrti(T)52(he40o)-31hlend eed M Misr obe(hour)7(

In the dual degree program, cross counting allows for a reduction in the total number of class hours to 58 credit hours for both degrees as described below (33 credit hours in MPHP and 25 credit hours in BIOC/NTRN).

The MPH/Nutrition dual degree is envisioned with students able to apply for either degree, then later join the other; or apply directly for the joint degree. Both the MPH and MS programs confer degrees through the School of Graduate Studies and as such are subject to Graduate Studies rules and procedures. Both programs are housed in the School of Medicine.

4. Dual Degree Curriculum: Sample Program of Study

Year 1 – Emphasis on Biochemistry and Public Health					
Fall Course #	**Fall Course Title**	**Cr Hrs/ Degree**	**Spring Course #**	**Spring Course Title**	**Cr Hrs/ Degree**
BIOC 407	Introduction to Biochemistry*	4/MS	BIOC 408	Molecular Biology*	4/MS
MPHP 406	History and Philosophy of Public Health**	3/MPH	MPHP 429	Introduction to Environmental Health**	3/MPH
MPHP 483 MPHP 403	Intro to Epidemiology for Public Health**	3/MPH & MS	MPHP 405	Statistical Methods in Public Health**	3/MPH

Year 2 –

The standard MPH program consists of 21 hours of core required material, 9 hours of major, 3 hours of elective, and 9 hours of culminating experience (3 credits of practicum and 6 hours of capstone). In the MPH/MS in Nutrition dual degree program, the 9 hours of major credit will consist of one MPH major required course (see below) and 2 approved Nutrition courses pertinent to that major. An additional approved Nutrition course may be taken in fulfillment of the MPH Elective course. For the purposes of completing the M.S. in Nutrition, the 25 hours of Nutrition and Biochemistry will be complimented with 6 hours of MPHP courses. Default courses counting toward the MS in Nutrition will be MPHP 483 (Public Health Epidemiology) and MPH 411 (Health Behavior).

MPH Major Required Courses:

- Health Promotion and Disease Prevention:
    - MPHP 433 Community Intervention and Program Evaluation
- Health Care Policy and Administration:
    - MPHP 468 Continual Improvement of Health Care
- Global Health (choose one):
    - INTH 401 Fundamentals of Global Health
    - MPHP 484 Global Health Epidemiology
    - MPHP 494 Infectious Disease epidemiology
- Population Health Research
    - Methods course, individually determined with Population Health Research track leader

The sample program of study above is intended as a template which will vary based on student needs. While the basic coursework will remain consistent, electives will differ and the sequence or number of courses taken during different years of the program may vary. Students have the option of taking summer courses, which could change the number of credit hours per semester or the duration of their program of study. All students will meet with program liaisons from Public Health and Nutrition upon program entry and with assigned faculty advisors throughout the duration of the program to individualize their program of study and assure compliance with all program requirements. If a student elects to discontinue the dual degree program and complete only one of the degrees, they will be expected to meet full credit hour requirements of the remaining program.

5. Admissions

Target enrollment in the program is six or more students, achieved by admission of at least two students annually. Students wishing to enroll in the dual degree program apply and are admitted into each program separately. While admissions 0 Td [(adv)1e duu pr

native language. In addition, in order to be prepared to take graduate courses in the biological sciences, the applicant must have taken introductory biology, general chemistry, and organic chemistry. Additional courses such as introductory physics, calculus, statistics and genetics would strengthen the student's application although these would not be required for entry into the dual degree program. The standard national exam score to be reported will be the GRE, but as noted above, others may substitute. Once students have been admitted, they will consult with their MPH Program Advisor to determine their appropriate course of MPH study and with the Department of Nutrition Advisor to determine their appropriate program of MS study. Advisor meetings will continue at least once per semester.

6. Tuition Revenue Mechanics:

For courses taught by Nutrition, Epidemiology and Biostatistics, or Biochemistry (prefixes: NTRN, BIOC, MPHP, EPBI), the tuition return will go to the teaching department. For courses taught by other departments, usual medical school rules for the tuition return should apply, with the "home" department being Nutrition if the course is being used for the MS in Nutrition, and Epidemiology and Biostatistics if the course is being used for the MPH.

No additional costs are anticipated in the initiation or maintenance of the MPH/Nutrition dual degree program.

7. Approval Signatures

Vice Chair for Education, Department of Epidemiology and Biostatistics
Dr. Mendel Singer

Dean, School of Medicine
Dr. Pamela A. Davis

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Dean, School of Graduate Studies
Dr. Charles Rozek

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8. Student Activities

The MPH/Nutrition program liaisons or their designee will regularly contact students in the program by email with information about activities and to verify proper progress. At the conclusion of year one, the faculty advisors (from MPH and Nutrition) will notify students of their progress. During the subsequent years, yearly student evaluations will be completed once by each of the respective programs.

Students are encouraged to participate in regular Departmental activities as their schedule will allow. Under the direction of the Graduate Program Directors, all MPH/MS students enrolled in the dual degree program will meet twice a year in a colloquium retreat (approximately one-half day in length). The purposes of the retreat are (1) to ensure the programs are meeting the expectations of the students and the faculty, (2) to capture the benefits of the interdisciplinary experience, (3) to socialize the dual degree students as a group, instead of small groups of isolated students, and (4) to explore the intellectual and professional challenges of doing interdisciplinary work. Students from other dual degree programs may also be included.

In addition, at the beginning of their first semester the Graduate Program Advisors will meet with each dual degree student to review their schedule and to explore any other issues on which they need guidance and advice. All new students will be partnered with an experienced student to address questions the students may have about the program and life as a graduate student at Case. These students will initially be drawn from the ranks of existing MS, MPH, or PhD. students. Once the program is established student guides will be partnered with advanced MPH/MS students. A get-acquainted welcoming event will be organized in the fall to facilitate this process.

The MPH Capstone requirement and the MS EXAM 600 requirement may be completed jointly by the dual degree student. Each student must form a Capstone Committee that includes at least 3 members, with at least one from the MPH program and one from Nutrition. Capstone Committee membership should be driven by the student's scholarly and research topic interest. Detailed criteria and guidelines for the completion of this project are available. To satisfy requirements for both programs, the Capstone must include a focus on both nutrition and public health; and must be approved by committee members from both programs. The

product of this Capstone project may be framed as an essay, a report, or as a manuscript suitable for peer-reviewed submission. In addition to the written product, the student is required to conduct a formal oral presentation at the MPH conducted Public Health Innovations conference offered yearly in the spring and fall. Capstone evaluation includes assessment of the essay, the oral presentation, and completion of Capstone competencies by each Capstone Committee member.

Other appropriate activities for the MPH/MS students may include attending the weekly Departmental Seminar and Student Seminars, as well as annual named lectureships, participating in annual retreats, and one or more journal clubs.

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9. Advantages of the Joint Degree Program

The key advantage the MPH/MS program will be the integration of the two disciplines *during* the time the students receive their training, thus allowing the students to develop a unique focus ons to Fq(ev)14(el) *(t)2(ii16(c10(uni)6(q)6.9(aTc 6(nt)u6es8M

and 25 additional credit hours in nutrition courses would be necessary for PHNDIP application eligibility

10. MPH/MS in Nutrition programs in the US (results of a Google search) – As noted below, there appear to be very few dual degree MPH/MS in Nutrition programs in the United States. While there are some programs that have a concentration in their public health program in nutrition (University of Minnesota, University of Massachusetts, City University of New York, Hunter College, University of Washington, University of Michigan to name a few) the joint MPH/MS degree is indeed rare, as shown in the list below. The paucity of programs does not reflect the importance of this disciplinary combination or student interest in the dual degree, but rather resources necessary to offer this complex and comprehensive program. We are fortunate to have the resources and leadership vision to join this list of outstanding universities.

- Tufts University (MPH/MS Nutrition)
- University of Tennessee (MPH/MS Nutrition)
- Benedictine University (MPH/MS Nutrition)
- Saint Louis University (MPH/MS Nutrition)
- Stony Brook University (MPH/MS Nutrition)
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Course descriptions for Biochemistry and Nutrition courses anticipated to be taken as part of the MPH/MS program

Note: All listed courses have been reviewed and are currently active.

BIOC 407. Introduction to Biochemistry: From Molecules To Medical Science. 4 credits.
Overview of the macromolecules and small molecules key to all living systems. Topics include: protein structure and function; enzyme mechanisms, kinetics and regulation; membrane structure and function; bioenergetics; hormone action; intermediary metabolism, including pathways and regulation of carbohydrate, lipid, amino acid, and nucleotide biosynthesis and breakdown. The material is presented to build links to human biology and human disease. One semester of biology is recommended. Offered as BIOC 307, BIOC 407, and BIOL 407. Prereq: CHEM 223 or CHEM 224.

BIOC 408. Molecular Biology. 4 credits.
An examination of the flow of genetic information from DNA to RNA to protein. Topics include: nucleic acid structure; mechanisms and control of DNA, RNA, and protein biosynthesis; recombinant DNA; and mRNA processing and modification. Where possible, eukaryotic and prokaryotic systems are compared. Special topics include yeast as a model organism, molecular biology of cancer, and molecular biology of the cell cycle. Current literature is discussed briefly as an introduction to techniques of genetic engineering. Recommended preparation for BIOC 408 and BIOL 408: BIOC 307 or BIOL 214. Offered as BIOC 308, BIOL 308, BIOC 408, and BIOL 408.

BIOC 412. Proteins and Enzymes. 3 credits.
Aspects of protein and nucleic acid function and interactions are discussed, including binding properties, protein-nucleic acid interactions, kinetics and mechanism of proteins and enzymes, and macromolecular machines. Recommended Preparation: CHEM 301. Offered as BIOC 312 and BIOC 412.

BIOC 420. Current Topics in Cancer. 3 credits.
The concept of cancer hallmarks has provided a useful guiding principle in our understanding of the complexity of cancer. The hallmarks include sustaining proliferative signaling, evading growth suppressors, enabling replicative immortality, activating invasion and metastasis, inducing angiogenesis, resisting cell death, deregulating cellular energetics, avoiding immune destruction, tumor-promoting inflammation, and genome instability and mutation. The objectives of this course are to (1) examine the principles of some of these hallmarks, and (2) explore potential therapies developed based on these hallmarks of cancer. This is a student-driven and discussion-based graduate course. Students should have had some background on the related subjects and have read scientific papers in their prior coursework. Students will be called on to present and discuss experimental design, data and conclusions from assigned publications. There will be no exams or comprehensive papers but students will submit a one-page critique (strengths and weaknesses) of one of the assigned papers prior to each class meeting. The course will end with a full-day student-run symposium on topics to be decided jointly by students and the course director. Grades will be based on class participation, written critiques, and symposium presentations. Offered as BIOC ora1.670.006 T,c 0.0

chronic disease as they affect the ability of the aged to cope with living situations. Recommended preparation: Nutrition major or consent of instructor.

NTRN 446. Advanced Maternal Nutrition: Special Topics. 3 credits.
Analysis of the problems commonly associated with high-

This course seeks to integrate the multiple perspectives and objectives in global health by investigating how the disciplines of Biology, Medicine, Anthropology, Nursing, Mathematics, Engineering analyze and approach the same set of international health problems. Students will develop a shared vocabulary with which to understand these various perspectives from within their own discipline. The focus sites will emphasize issues related to the health consequences of development projects, emergency response to a health care crisis and diseases of development in presence of underdevelopment. Offered as INTH 301 and INTH 401.

MPHP 403. Research and Evaluation Methods. 3 Units.
This course is designed to provide an overview of research and evaluation methods for first-year MPH students. Through lecture, discussion and application exercises, students are introduced to the principles and processes of research and evaluation methods in public health, including formulation of research questions, aims and hypotheses and evaluation goals and objectives; literature review; development/selection of conceptual and theoretical models; quantitative, qualitative and mixed methods study designs; data collection approaches (including surveys, interviews, focus groups, observations and use of existing data); research and evaluation project management; and application of ethical principles and protection of human subjects in public health research and evaluation.

MPHP 405. Statistical Methods in Public Health. 3 Units.
This one-semester survey course for public health students is intended to provide the funda exveal5eBms methTd ( )T0( )15 Tnv00(i)6(s)4n Td aC14(i)6e4.5s14(des)4adespliced coloT*

of health education and health promotion are studied. Advanced concepts in health communication theory will also be explored. This course is designed to education, motivate, and empower undergraduate and graduate students to become advocates for their own health, the health of their peers, and the health of the community. Offered as MPHP 313 and MPHP 413.

MPHP 419. Topics in Urban Health in the United States. 3 Units.
This course examines patterns of urban health and disease across the life course among marginalized populations and communities. We will examine the socio-environmental contexts that impact health status (i.e., racism, health disparities, neighborhood context, and environmental stressors). Readings from epidemiology, sociology, and public health literature will provide a foundation for the multiple factors and processes that impact health. Offered as EPBI 419 and MPHP 419.

MPHP 421. Health Economics and Strategy. 3 Units.
This course has evolved from a theory-oriented emphasis to a course that utilizes economic principles to explore such issues as health care pricing, anti-trust enforcement and hospital mergers, choices in adoption of managed care contracts by physician groups, and the like. Instruction style and in-class group project focus on making strategic decisions. The course is directed for a general audience, not just for students and concentration in health systems management. Offered as ECON 421, HSMC 421, and MPHP 421.

MPHP 429. Introduction to Environmental Health. 3 Units.
This is a survey course of environmental health topics including individual, community, population, and global issues. Introduction to risk management, important biological mechanisms, and age and developmental impacts are covered in an overview fashion. A practical inner city home environment experience is included. Offered as EVHS 429 and MPHP 429.

MPHP 431. Statistical Methods I. 3 Units.
Application of statistical techniques with particular emphasis on problems in the biomedical sciences. Basic probability theory, random variables, and distribution functions. Point and interval estimation, regression, and correlation. Problems whose solution involves using packaged statistical programs. First part of year-long sequence. Offered as ANAT 431, BIOL 431, EPBI 431, and MPHP 431.

MPHP 432. Statistical Methods II. 3 Units.
Methods of analysis of variance, regression and analysis of quantitative data. Emphasis on computer solution of problems drawn from the biomedical sciences. Design of experiments, power of tests, and adequacy of models. Offered as BIOL 432, EPBI 432, and MPHP 432. Prereq: EPBI 431 or equivalent.

MPHP 433. Community Interventions and Program Evaluation. 3 Units.
This course prepares students to design, conduct, and assess community-based health interventions and program evaluation. Topics include assessment of need, evaluator/stakeholder relationship, process vs. outcome-based objectives, data collection, assessment of program objective achievement based on process and impact, cost-benefit analyses, and preparing the evaluation report to stakeholders. Recommended preparation: EPBI 490, EPBI 431, or MPHP 405. Offered as EPBI 433 and MPHP 433. Prereq: MPHP

MPHP 439. Public Health Management and Policy. 3 Units.
This course is designed to introduce students to the basics of health policy-making and includes a background on the basic structure and components of the US Health Care System (such as organization, delivery and financing). It will also cover introductory concepts in public health management, including the role of the manager, organizational design and control, and accountability. We will address relevant legal, political and ethical issues using case examples. At the end of the course, students will understand how health policy is developed and implemented in various contexts, and the challenges facing system-wide efforts at reform. This is a required course for the MPH degree. Grades will be based on a series of assignments. Prereq: Enrollment limited to MPH students (Plan A or Plan B) and EPBI Students or instructor consent.

MPHP 442. Biostatistics II. 3 Units.

practice features affecting health, compare and contrast practices and approaches, and evaluate features and context that promote or inhibit boundary spanning and promoting health. Offered as MPHP 466, EPBI 466, SOCI 466, NURS 466 and BETH 466. Prereq: Graduate student status or instructor consent.

MPHP 467. Comparative and Cost Effectiveness Research. 1 Unit.
Comparative effectiveness research is a cornerstone of healthcare reform. It holds the promise of improved health outcomes and cost containment. This course is presented in a convenient 5-day intensive format in June. There are reading assignments due prior to the 1st session. Module A, Days 1-2: Overview of comparative effectiveness research (CER) from a wide array of perspectives: individual provider, institution, insurer, patient, government, and society. Legal, ethical and social issues, as well as implications for population and public health, including health disparities will also be a component. Module B, Day 3: Introduction to the various methods, and their strengths, weaknesses and limitations. How to read and understand CER papers. Module C, Days 4-5: Cost-Effectiveness Analysis. This will cover costing, cost analysis, clinical decision analysis, quality of life and cost-effectiveness analysis for comparing alternative health care strategies. Trial version of TreeAge software will be used to create and analyze a simple cost-effectiveness model. The full 3-credit course is for taking all 3 modules. Modules A or C can be taken alone for 1 credit. Modules A and B or Modules B and C can be taken together for a total of 2 credits. Module B cannot be taken alone. If taking for 2 or 3 credits, some combination of term paper, project and/or exam will be due 30 days later. Offered as EPBI 467 and MPHP 467.

MPHP 468. The Continual Improvement of Healthcare: An Interdisciplinary Course. 3 Units.

treatment, and control of infectious diseases and, more generally, global health. This is an advanced epidemiology that embraces an active learning environment. Students are expected to invest time out of the classroom reading and working with classmates. Classes will be conducted with discussions, debates, group projects, and group presentations. By taking this course, students will develop a framework for interpreting, assessing, and performing epidemiologic research on issues of global importance. The course will be divided into three modules:1) Global Health Epidemiology 2) Helminth Epidemiology, and 3) Epidemiology of Disease Elimination. Each module is worth 1 credit hour and may be taken separately. Each module will have a separate project and/or exam. The final exam time will be used for group presentations and panel discussion. Active class participation is required through discussions, case studies, and group projects. Offered as EPBI 484, INTH 484, and MPHP 484.

MPHP 485. Adolescent Development. 3 Units.
Adolescent Development can be viewed as the overriding framework for approaching disease prevention and health promotion for this age group. This course will review the developmental tasks of adolescence and identify the impact of adolescent development on youth risk behaviors. It will build a conceptual and theoretical framework through which to address and change adolescent behavior to promote health.

MPHP 490. Epidemiology: Introduction to Theory and Methods. 3 Units.
This course provides an introduction to the principles of epidemiology covering the basic methods necessary for population and clinic-based research. Students will be introduced to epidemiologic study designs, measures of disease occurrence, measures of risk estimation, and casual inference (bias, confounding, and interaction) with application of these principles to specific fields of epidemiology. Classes will be a combination of lectures, discussion, and in-class exercises. It is intended for students who have a basic understanding of the principals of human disease and statistics. Offered as EPBI 490 and MPHP 490. Prereq or Coreq: EPBI 431 or requisites not met permission.

MPHP 491. Epidemiology: Case-Control Study Design and Analysis. 3 Units.
This course builds upon EPBI 490 with a comprehensive study of the concepts, principles, and methods of epidemiologic research. The course content specifically focuses on the case-control study design and provides a framework for the design, analysis, and interpretation of case-control studies. Rigorous problem-centered training includes exposure measurement, subject selection, validity, reliability, sample size and power, effect modification, confounding, bias, risk assessment, matching, and logistic regression. Individual and group data projects will be analyzed using SAS statistical software. Offered as EPBI 491 and MPHP 491. Prereq: EPBI/MPHP 490.

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study using a statistical package of their choice. Offered as EPBI 492 and MPHP 492. Prereq: EPBI 431 and EPBI 490 or equivalent.

MPHP 494. Infectious Disease Epidemiology. 3 Units.
This course focuses on tuberculosis (TB) and HIV epidemiology, including perspectives on these diseases in the US and globally. It is a follow-up to EPBI/MPHP 484: Global Health Epidemiology, but these courses do not necessarily need to be taken in sequence. This is an advanced course, focusing on methods and approaches in epidemiology and public health. Offered as EPBI 494, INTH 494 and MPHP 494. Prereq: EPBI 490.

MPHP 497. Cancer Epidemiology. 1 - 3 Unit.
This is a 1-3 credit modular course in cancer epidemiology and is intended for graduate students in epidemiology and biostatistics, environment health, MPH students and MD or MD/PhD students. The course will consist of 3 five-week modules: 1) introduction to cancer epidemiology (study design, etiology and causal inference, cancer statistics and cancer biology); 2) site-specific discussions of various cancers involving natural history of disease and risk factors and etiology and 3) cancer prevention and screening and cancer survivorship. Each of the modules is worth 1 credit hour for a total of 3 credit hours. Offered as: EPBI 497 and MPHP 497.

MPHP 499. Independent Study. 1 - 3 Units.

MPHP 508. Ethics, Law, and Epidemiology. 3 Units.
This course is designed to provide epidemiology students with basic knowledge about the ethical and legal principles underlying epidemiological research. This is not a public health law class. Issue papers are assigned on a weekly basis. Each issue paper requires that the student analyze the situation depicted and apply the principles learned. Some issue papers may require that the student draft a proposed rule, a portion of legislation, or a document such as an informed consent form. Other exercises may require that students critique an existing agency rule or legislation. Offered as EPBI 508 and MPHP 508. Prereq: EPBI 490 and EPBI 491 or equivalent.

MPHP 510. Health Disparities. 3 Units.
This course aims to provide theoretical and application tools for students from many disciplinary backgrounds to conduct research and develop interventions to reduce health disparities. The course will be situated contextually within the historical record of the United States, reviewing social, political, economic, cultural, legal, and ethical theories related to disparities in general, with a central focus on health disparities. Several frameworks regarding health disparities will be used for investigating and discussing the e

enhance the effectiveness and efficiency of health care organizations. Offered as HSMC 432, MIDS 432, MPHP 532 and NUNI 432.

MPHP 650. Public Health Practicum. 3 Units.
The Public Health Practicum is an integral component of the MPH curriculum, allowing students to apply, develop, and refine their conceptual knowledge and skills as part of a planned, supervised, and evaluated community-based experience. The Practicum is designed to move students beyond the walls of academia, to understand the political, economic, social, and organizational contexts within which public health activities are conducted. To complete the Practicum, students must complete three credits of MPHP 650, dedicating at least 120 hours to a substantial public health experience, and attend Community Health Research and Practice (CHRP) group meetings. Prereq: Complete at least 9 credit hours in the MPH program and be in good academic standing.

MPHP 652. Public Health Capstone Experience. 6 Units.
Public health field practicum, involving a placement at a community-based field site, and a Master's essay. The field placement will provide students with the opportunity to apply the knowledge and skills acquired through their Master of Public Health academic program to a problem involving the health of the community. Students will learn to communicate with target groups in an effective manner; to identify ethical, social, and cultural issues relating to public health policies, research, and interventions; to identify the process by which decisions are made within the agency or organization; and to identify and coordinate use of resources at the placement site. The Master's essay represents the culminating experience required for the degree program and may take the form of a research thesis, an evaluation study, or an intervention study. Each student is required to formally present the experience and research findings. In any semester in which a student is registered for MPHP 652 credit, it is required that the student attend the Community Health Research and Practice (CHRP) group at a minimum of two sessions per 3 credits. CHRP is held once a week for approximately an hour and a half for the duration of fall, spring, and summer semesters. MPHP 652 credit is available only to Master of Public Health students.