University of Washington
Institute for Public Health Genetics

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MPH in Public Health Genetics Guidelines

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Part 2
MPH Thesis Guidelines

MPH in Public Health Genetics

I. Program Goals and Learning Objectives

The *overall goal* of the MPH degree program is to train students in the fundamentals of public health genetics and its core knowledge areas (listed below). The degree requirements include course work in epidemiology, biostatistics, health services, environmental health, genetic epidemiology, pharmacogenomics, law, bioethics, and sociocultural and clinical aspects of public health genetics, and health economics; a practice experience (practicum); and completion of a research-based master's thesis. The program is designed to be completed in approximately

two years. Prospective students are expected to have an excellent academic record with a bachelor's degree and a background in human genetics or molecular biology.

Public Health Genetics Core Knowledge Areas

A: Genomics in Public Health	***B: Implications of Genetics for Society***
Genetic and Molecular Epidemiology	Ethics & Social Science
Ecogenetics & Pharmacogenetics	Law & Policy
Clinical Aspects of Genomics	Health Economics & Outcomes Research

Learning Objectives

There are two sets of learning objectives for the MPH program in Public Health Genetics.

Set I. General set of objectives for all MPH programs in the School of Public Health at the University of Washington

- Communicate effectively and persuasively, both orally and in writing.
- Work effectively in and with diverse cultures and communities (cultural competency).
- Critically read and evaluate quantitative and qualitative research findings contained in the medical, public health, and social science journals.
- Apply analytic tools to defining and describing public health problems.
- Demonstrate creativity, inquisitiveness, and evidence-based rigor in the application of public health problem-solving skills.

Set II. Objectives Specific to the Public Health Genetics Program

Learning objectives specific to the MPH program in Public Health Genetics were developed based on competencies recommended by the Public Health Genetics Training Collaboration. This collaboration consists of five universities that provide training related to Public Health Genetics, the Washington State Department of Health, and liaisons to the Centers for Disease Control and Prevention and the Genetics Services Branch of the Health Resources and Human Services Administration in 2001 (Austin MA, Arnett D, Beaty T, Durfy S, Fineman R, Gettig E, Lochner Doyle D, Peyser P, Sorenson J, Thompson JD, Watts C. Opportunities for public health genetics trainees: Results from an employer/workplace survey. Community Genetics 4:143-147, 2001.)

Following an interactive internal review of the program by students active in the program during the 2007-2008 academic year, alumni of the program, and faculty, the following, updated objectives were developed:

1. Display competency in “Genomics in Public Health” (Core Knowledge Area A):
    a. Apply knowledge of inheritance and genomic advances, including cellular and molecular mechanisms and technical developments, to understanding the etiology of a variety of rare and common, complex diseases and health conditions.
    b. Apply epidemiological and statistical approaches to the study of risk factors and diseases with a genetic component.

   c. Identify interactions among genes, environmental factors, and behaviors, and their roles in health and disease.
   d. Understand how genetic principles and genomic technologies apply to diagnosis, screening, and interventions for disease prevention.
2. Display competency in "Implications of Genetics for Society" (Core Knowledge Area B):
   a. Identify the impact of genomics on the public health activities of assessment, policy development and assurance.
   b. Apply methods to address ethical implications of the use of genetic information and technologies in public health;
   c. Understand legal concepts and the role of the law in the development of policies relating to genetics and genomics; and identify legal implications of the application of genetics and genomic technologies in public health.
   d. Apply knowledge of key social science concepts in analysis of the political, social and cultural forces that influence the research and clinical application of genetics and genomic technology in public health.
   e. Analyze the interaction and impact of market forces and public policy on the development and delivery of genetic services.

II. Curriculum: Course of Study

A. Overview

The MPH degree requires a minimum of 63 credits. Note, however, that most students take more than this total because they take electives, independent study, and/or thesis credits beyond the required minimum.

Students may choose the Satisfactory/Not Satisfactory (S/NS) grading option for approved elective courses, but not for required courses.

Required coursework. 53 credits must be earned by completing:

- 17 credits of graded MPH core courses
- 18 credits of graded PHG core courses
- 6 credits of PHG Seminar (PHG 580)
- 3 credits of Master's Practicum (PHG 595)
- 9 credits (minimum) of Master's Thesis (PHG 700)

Elective courses. The remaining 10 credits may combine:

- Approved elective courses
- Independent study (PHG 600)
- Master's Thesis (PHG 700) above the 9-credit requirement

B. MPH Core Courses (minimum 17 credits)

Course	Course name	Credits	Sugg. Year
EPI 511	Introduction to Epidemiology (EPI 512 and 513 may substitute for EPI 511)	4	1
BIOST 511	Medical Biometry I (BIOST 517 may substitute for BIOST 511)	4	1
HSERV 511	Introduction to Health Services & Public Health	3	1
ENVH 511	Environmental and Occupational Health (ENVH 517, 570, 577, or 584 may substitute for ENVH 511)	3	1 or 2
HSERV 510	Society and Health	3	1 or 2

C. PHG Core Courses (minimum 18 credits)

Course	Course name	Credits	Sugg. Year
PHG 511	Genetic Epidemiology Prerequisites: GENOME 371 or equivalent; AND EPI 511 or equivalent; AND BIOST 511 or equivalent	3	1
PHG 512	Legal, Ethical, and Social Issues in Public Health Genetics	3	1
PHG 513	Basic Concepts in Pharmacogenetics and Toxicogenomics Prerequisite: GENOME 372 or equivalent	3	1 or 2

AND

Select **one** of the following 7 combinations of 3 courses

1	2	3	4	5	6	7
PHG 521	PHG 521	PHG 521	PHG 521	PHG 521	PHG 522	PHG 525
PHG 522	PHG 525	PHG 522	PHG 525	PHG 523	PHG 523	PHG 523
PHG 523	PHG 523	PHG 542	PHG 542	PHG 542	PHG 542	PHG 542

Course	Course name	Credits	Suggested Year
PHG 521	Culture, Society, and Genomics	3	1 or 2
PHG 522	Ethical Frameworks for Public Health Genetics Prerequisite: PHG 512 or equivalent (or instructor's permission)	3	1 or 2
PHG 523	Genetics and the Law Prerequisite: PHG 512 or equivalent (or instructor's permission)	3	1 or 2
PHG 525	Public Commentary on Ethical Issues in Public Health Genetics Prerequisite: PHG 512 or equivalent (or instructor's permission)	3	1 or 2
PHG 542	Genetic Discovery in Medicine and Public Health	3	

D. Seminar, Practicum, and Thesis Credits (minimum 13 credits)

Course	Course name	Credits	Suggested Year
PHG 580	PHG Interactive Seminar 1 credit/quarter (required for 6 quarters)	1	1 & 2
PHG 595	PHG Master's Practicum See School of Public Health website for information http://sph.washington.edu/practicum/index.asp	3	
PHG 700	Master's Thesis (minimum 9 credits required for degree) See Part 2 of MPH Guidelines	9+	2

E. Electives (minimum10 credits)

The following are among the approved electives courses (see IPHG website for complete list: http://depts.washington.edu/phgen/degreeprograms/MPH_electives.shtml).

PHG 518 Computer Applications in Genetic Epi Epidemiology (2-4)
PHG 519 Statistical Methods in Genetic Epidemiology (3)
PHG 536 Bioinformatics and Gene Sequence analysis
PHG 551 Human Genomics: Science, Ethics and Society (3)
Qualitative research methods courses:
- PHG 552, Advanced Qualitative Methods;
- HSERV 521, Qualitative Methods in Health Services Research;
- HSERV 526 Qualitative Research Methods for Public Health;
- NMETH 582 Interpretative Methods in Nursing Research;
- NMETH 583 Interpretative Methods in Nursing Research;
- SOC W 505 Foundations of Social Welfare Research;
- SOC W 506 Social Welfare Research and Evaluation;
- EDLPS 544 Comparative Education: Introduction to Concepts and Methods ;
- PHG 591 PHG Journal Club (1 per quarter)