Direct Admission to the Ph.D. Program in the Division of Epidemiology and Disease Control

Rationale

The Division of Epidemiology and Disease Control of the University of Texas School of Public Health (UTSPH) is in competition with top schools of public health that offer exceptional applicants who lack a prior master’s degree direct admission to their Ph.D. programs. Currently, otherwise qualified applicants who have a master’s degree in a field other than epidemiology can be offered admission to the M.S. program with the “right to petition” for the Ph.D. program once specified course requirements have been completed. Otherwise, students who might wish to pursue a Ph.D. in epidemiology are expected to have completed a master’s degree before entering the Ph.D. program. The school, therefore, may lose some of its best applicants if other schools can offer them admission directly to a Ph.D. program. In addition to attracting highly qualified students who have only undergraduate degrees, a policy allowing direct admission to the Ph.D. program might also attract promising students who have an advanced degree, such as an M.D. degree, but no master's degree.

It should be noted that direct admission to the Ph.D. program will not entail a dramatic departure from the program now followed by students who enter and complete the M.S. program and then go on to the Ph.D. program, as the total number of credit hours that must be completed will be no less than the number of hours currently required for those following the M.S.-Ph.D. sequence. Direct admission, however, will allow the student more flexibility than the current M.S. program, which requires, among other things, that a student complete both a thesis (3-6 semester hours) and a minor (involving approximately 9 semester hours of coursework) before entering the Ph.D. program. The Ph.D. program includes (but is not limited to) 3-6 semester hours for a dissertation and 9-12 semester hours for each of the two minor areas. With direct admission, the student would no longer be required to complete the M.S. minor or thesis, but would complete two minors and the dissertation as part of the requirements for the Ph.D. degree, while still taking all of the didactic courses in epidemiology that a student in the M.S. program would take, plus additional elective courses recommended by the student’s advisory committee.

The Ph.D. program in Epidemiology and Disease Control can be completed by well-qualified students who have a bachelor’s degree with appropriate grounding in biology and mathematics or statistics and have demonstrated potential for success at the doctoral level. Graduates of the program, whether they enter it with a prior master’s degree or not, are expected to become independent investigators in the development and application of epidemiological methods to problems of human health and disease. They will be prepared to pursue careers in teaching and research, or to assume senior positions in governmental or private health research agencies.
Admission Requirements

The Admissions Process, and Factors Considered in Evaluating All Applicants

In the Division of Epidemiology and Disease Control, a subcommittee consisting of 4 - 6 members of the Division's faculty evaluates all applications for admission to determine which applicants meet the Division’s standards for admission. Multiple factors are considered in evaluating each applicant, including previous academic performance, as indicated by college transcripts and Grade Point Averages [GPAs] (both overall and in mathematics and science courses); Graduate Record Examination scores; letters of recommendation from others in a position to evaluate an applicant’s qualifications; volunteer or work experience related to public health; a goal statement describing an applicant’s qualifications, experiences, and goals in public health; and, if required, scores on the Test of English as a Foreign Language. After the subcommittee has voted on each application, those deemed not to meet the Division’s standards for admission are recommended for denial. The remaining applications from those deemed qualified for admission are then made available to all faculty members with primary or secondary appointments in the Division, so that faculty members can identify students for whom they would be willing to serve as the Academic Advisor. An advisor must be identified for an applicant before a formal recommendation for admission will be made to the UTSPH Admissions Committee, which includes as voting members one faculty member from each of the school’s divisions and regional campuses, as well as a student representative. The Division’s recommendation for each applicant, along with a summary of the applicant’s qualifications, is presented to the Admissions Committee, which, after discussion, either accepts or rejects each recommendation by majority vote.

Admissions Standards for Applicants with No Prior Master’s Degree

A student requesting direct admission to the Ph.D. program is expected to have either (1) a bachelor’s degree that indicates the development of strong scientific and analytical skills, such as a degree in biology, biochemistry, mathematics, or statistics; (2) a professional doctoral degree in a medical field, such as an M.D., D.D.S., or D.V.M. degree; or (3) a prior doctoral degree in a field not directly related to medicine or public health, coupled with evidence of adequate preparation in the biological sciences and mathematics. Applicants with only a bachelor’s degree are expected to have an overall GPA of at least 3.4 on a 4-point scale, and they should have significant research or public health experience through honors courses, internships, or volunteer work; completion of an undergraduate course in epidemiology or the biology of human disease (e.g., a medical microbiology course) is highly recommended. Applicants with advanced degrees that are not equivalent to an M.S. degree in public health are expected to have either an overall GPA of at least 3.4 in their post-baccalaureate work, or, where a GPA cannot be calculated (as in some medical school grading systems), evidence of solid academic achievement (e.g., as shown by high class rank, a significant proportion of “high pass” grades, or the receipt of scholarships or academic honors); in either case, applicants should present evidence of achievements in a
research setting, such as authorship or co-authorship of publications in peer-reviewed journals, or presentation of research results at scientific meetings. Regardless of whether an applicant has a bachelor’s degree only, a professional doctoral degree in a medical field, or a doctoral degree in a field not directly related to medicine or public health, the successful applicant will have completed advanced courses in a biological science, at least two semesters of college-level calculus courses (or the equivalent), and at least one course in statistics. It is highly recommended that applicants have combined Verbal and Quantitative scores on the Graduate Record Examination of at least 1300. The sum of all the evidence presented in support of an application for direct admission to the Ph.D. program in Epidemiology and Disease Control should convincingly demonstrate that the applicant has high potential for success in doctoral-level work.

Duration of the program

The Ph.D. program in the Division of Epidemiology and Disease Control was designed so that a student should ordinarily be able to complete all degree requirements by the end of the fourth year of full-time study. It is recognized that some students may require additional time; however, UTSPH has instituted a limit of seven years for completing a Ph.D. degree, and any student lacking the equivalent of a prior master’s degree in epidemiology who is directly admitted to the Ph.D. program will still be expected to complete the degree program within this time period.

The advisory committee for each Ph.D. student, which includes the student as a fully participating member, meets at least twice a year to discuss the student’s progress. These meetings include discussions regarding the student’s preparation for the qualifying examination; a review of the student’s academic program and consideration of possible modifications to it, as needed; and an assessment of the student’s progress and capacity to continue in the program.

Graduation Requirements

The requirements for a Ph.D. in the Division of Epidemiology and Disease Control at the University of Texas School of Public Health include the following:

1. Satisfactory completion of a prescribed course of study of at least one academic year (a minimum of 72 semester credit hours).

2. Satisfactory performance on a qualifying examination deemed by the faculty of the Advisory Committee to test depth of knowledge in the major and two minor fields of concentration in the public health sciences, and a capacity to conceive and conduct independent research in the chosen field. Students will have completed at least 50-60 semester credit hours of appropriate coursework, as determined by the Advisory Committee, in preparation for the qualifying examination.

3. Satisfactory completion of an original research dissertation, written in English, that makes a substantial contribution to knowledge in epidemiology and public health. All doctoral students must present their dissertation research in a
public forum at the school prior to graduation. All completed dissertations will be made available to the public.

All courses taken by students count toward their degree, but no more than 6 credit hours of dissertation research may be counted toward the 72 credit hour minimum required for the degree. Students must be enrolled during the semester in which they take the qualifying examination. Students must also be enrolled in the semester in which the research proposal is submitted and continuously thereafter through the semester in which the degree requirements are completed.

Students are required to satisfactorily complete a written comprehensive qualifying examination covering epidemiology and each of two minor fields. Any student who fails the qualifying examination twice will not be allowed to continue in the Ph.D. program, but the faculty members of the student’s committee will make a recommendation to the faculty of the Division of Epidemiology and Disease Control regarding the option of allowing the student to complete a thesis and receive a terminal M.S. degree. After due consideration, faculty members of the Division will vote on the recommendation of the student’s committee. Thus, the decision to allow a student who cannot complete the Ph.D. program to complete the M.S. program is not automatic.

**Ph.D. Competencies**

All graduates of the Ph.D. program are expected to be independent investigators capable of developing epidemiological methods and applying them to problems of human health and disease. They are expected to be capable of following academic careers in teaching and research, or of eventually occupying senior positions in governmental or private health research agencies. Graduates must attain the following specific competencies:

1. Use basic and advanced philosophy, theory (including causal inference), and principles of epidemiology in the practice of science.

2. Demonstrate knowledge of the history of epidemiology and its role within the broader field of public health.

3. Describe the natural history of one or more specific diseases or health conditions, including consideration of causation, control, and prevention.

4. Apply basic and advanced principles and methods of epidemiology to research questions.

5. Apply advanced quantitative methods to the study of human behavior, population characteristics, and the physical environment.

6. Design, manage, critically analyze, and interpret data from an epidemiological study as an independent investigator.
7. Evaluate research proposals and interpret results of epidemiological studies, taking into account the impact of bias and error on results.

8. Address and apply ethical issues in the practice of epidemiology.

9. Communicate with and instruct others regarding principles of epidemiology.

Curriculum

The required courses in epidemiology may be taken by any adequately-prepared student. Students in the Ph.D. program are expected to acquire a greater breadth and depth of knowledge in epidemiology than those who only complete the M.S. program. The recommended courses for those directly admitted to the Ph.D. program include all recommended courses for the M.S. program, plus all those recommended for the Ph.D. program. It is expected that most candidates for direct admission to the Ph.D. program will be prepared to undertake courses beyond the introductory level.

It is understood that courses equivalent to those listed below are acceptable as long as the student can document equivalent competency, however prior credit hours cannot be transferred. The minimum knowledge of content needed to demonstrate mastery in epidemiology is contained in the following courses:

PH 2612 Introduction to Epidemiology for Majors
PH 2615 Field Research Methods in Epidemiology
PH 2710 Advanced Epidemiologic Methods I
PH 2711 Advanced Epidemiologic Methods II
PH 2712 Experimental Methods in Epidemiology
PH 2720 Epidemiologic Proposal Development

Biostatistics (at least these two)
PH 1725 Intermediate Biostatistical Methods I
PH 1726 Intermediate Biostatistical Methods II

Epidemiology Electives (at least three); possible choices include:
PH 2730 Epidemiology and Control of Infectious Diseases
PH 2740 Cardiovascular Disease Epidemiology and Prevention
PH 2750 Epidemiology and Natural History of HIV Disease and Treatment
PH 2760 Epidemiology and Prevention of Injuries
PH 2770 NIH Proposal Development
PH 2810 Genetics and Human Disease
PH 2820 Molecular and Cellular Approaches to Human Genetics
PH 2825 Introduction to Genomics and Bioinformatics
PH 2850 Population Genetics
PH 2910 Introduction to Microarrays and Computational Systems Biology
PH 2915 Evolution of DNA and Protein Sequences
PH 2920 Human DNA Variation
PH 2925 Statistical Genetics
PH 2950 Genetic Epidemiology of Chronic Disease
PH 2998 Special Topics in Epidemiology, such as:
  Applied Genetic Methods in Epidemiology
  Biological Basis of Emerging Diseases
  Cancer Epidemiology
Causation
Current Topics in Emerging Viral Diseases
Environmental Epidemiology
Epidemiology of Aging
Neuroepidemiology
Nutritional Epidemiology
Rapid Assessment Methods in Public Health
Reproductive and Perinatal Epidemiology
Social Epidemiology
A typical plan of study for a student entering the Ph.D. program without a prior master’s degree would include the following:

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