GILLINGS SCHOOL OF GLOBAL PUBLIC HEALTH

2022 – 2023

Doctoral Handbook

"The University of North Carolina at Chapel Hill is accredited by the Southern Association of Colleges and Schools Commission on Colleges (SACSCOC) to award baccalaureate, masters, educational specialist, and doctorate degrees. Degree-granting institutions also may offer credentials such as certificates and diplomas at approved degree levels. Questions about the accreditation of the University of North Carolina at Chapel Hill may be directed in writing to the Southern Association of Colleges and Schools Commission on Colleges at 1866 Southern Lane, Decatur, GA 30033-4097, by calling (404) 679-4500, or by using information available on SACSCOC's website (www.sacscoc.org)."

The Gillings School is fully accredited by the Council on Education for Public Health (CEPH). CEPH is an independent agency, recognized by the US Department of Education to accredit schools and programs of public health.

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Gillings School Doctoral Public Health Degrees

The Gillings School doctoral degrees help students develop research and teaching skills through coursework, doctoral research, practice opportunities and preliminary doctoral examinations.

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Major Courses

Required courses for each major provide students an opportunity to develop discipline-specific knowledge and skills and demonstrate discipline-specific competencies. The required courses for each major and the associated competencies are described below in each department specific section.

Admission Requirements

Each degree program provides advanced research, course work, research, and practice opportunities, prepare individuals for careers in academia, government, and industry. Each program has differing admission requirements that are best detailed in their specific site.

Policies, Procedures, and Forms

Most forms for Gillings students can be found on the Gillings Forms page. Also included are any non-Gillings forms, and directions and procedures for each form. Students should work with their Academic Coordinator to complete each form.

For additional doctoral policies and forms, see the UNC Graduate School Handbook.

Academic Advising/Your Faculty Mentor

Upon admission, students are assigned a faculty mentor from their departmental faculty. The Academic Coordinator assists the student in navigating the Graduate School and departmental rules and expectations. The faculty mentor guides them in choosing an appropriate program of coursework and in forming a research committee, when appropriate. Usually, the faculty mentor will serve as the student's research advisor as well, though a research advisor from faculty (including adjunct faculty, or faculty in other departments) may be assigned. In this case, research advisor and mentor will serve on the student's examination committee.

Biostatistics

What You Will Learn in this Program

The Department of Biostatistics offers training and research programs to develop and apply innovative statistical methods to problems of human health and disease, including basic biomedical sciences.

Mission Statement

Our mission is to forge dramatic advances in health science research that benefit human health in North Carolina, the US, and globally through the development of profound and paradigm-shifting innovations in biostatistical methodology and the thoughtful implementation of biostatistical practice to solve public health problems.

We bring about positive, equitable, and sustainable changes in health by:

A. Supporting excellence in biostatistical practice by conducting theory and methods research of clear relevance to practice

B. Promoting sound application of new and existing statistical methods

C. Fostering equity and diversity in the biostatistics field and beyond;

D. Improving biostatistical education at the undergraduate and graduate levels

E. Working with undergraduate colleges to promote biostatistics as a discipline for graduate studies and a professional career

F. Anticipating and meeting the learning needs of our students by maintaining an open and inclusive environment in the department

G. Using the tools of our discipline to enhance human welfare through collaboration in research with colleagues in the biological and health sciences

H. Seeking opportunities to advance the biostatistics profession.

Overview

The Department of Biostatistics in the Gillings School of Global Public Health of the University of North Carolina at Chapel Hill stands as one of the best departments of its kind in the world. The Department was established in 1949 with the goals to advance statistical science and, ultimately by its application, to improve human health. To achieve these goals, the Department of Biostatistics offers training and research programs to develop and apply innovative statistical methods to problems of human health and disease, including basic biomedical sciences.

Admission Requirements

1. An appropriate prior Bachelor's or Master's degree in Statistics, Biostatistics, or a closely related field.

2. Strong mathematical training including linear algebra and multivariable calculus. Advanced calculus/elementary analysis are strongly encouraged, but on occasion exceptional students are admitted without these courses. In such cases, the student will take MATH 521 during the first year of study.

Degree Competencies

Upon satisfactory completion of this program the student will have:

1. demonstrated mastery of: (a) the theory of probability and statistical inference, by successfully passing the written qualifying exam in theory, and (b) the application of said theory to solve a variety of applied statistical problems in the health sciences, by successfully passing the written qualifying exam in applications
1. learned advanced biostatistical techniques, including the ability to
2. PH01: design cost-effective surveys and experiments (including clinical trials) for collecting data on topics relevant to health, taking account of sampling error, measurement error,

nonresponse, and other sources of bias and variability [BIOS 662, BIOS 663, BIOS 841, and BIOS 767];

3. PH02: use advanced parametric and semiparametric models for the analysis of public health data, including linear regression, mixed models, methods for categorical data, generalized linear (mixed) models, generalized estimating equations, survival analysis, and Bayesian methods [BIOS 762, BIOS 767, BIOS 780];
4. PH03: discern when standard methods are not appropriate, when nonparametric methods based on randomization and ranks may be substituted, or when new methods must be developed [BIOS 662 and BIOS 780];

- PH04: estimate survival curves from time-to-event data which may involve censoring and time-dependent covariates, and test for differences among treatments and for the effects of covariates [BIOS 780]; and
- PH05: apply advanced statistical computing methods such as the EM algorithm, MCMC method, and optimization procedures, and write efficient R, SAS, and C++ code [BIOS 611, BIOS 762, and BIOS 735];
- PH06: used computers for research data management (applying a defensible standard of documentation, archiving, protection of confidentiality, and audit trail) and for the analysis of data with standard -statistical program packages [BIOS 611, BIOS 735, BIOS 841, BIOS 850];

3. PH07: carried out independent methodological research, including the writing of a scholarly dissertation and publishing papers based on the dissertation in respected statistical journals [BIOS 994];
4. PH08: gained successful practical experience in statistical consulting, including interaction with research workers in the health sciences, abstracting statistical aspects of substantive problems, and communicating the results to persons without specialized biostatistical training; if not outside academia, then this consulting experience can be obtained by serving in the Biometric Consulting Laboratory (BCL), the Collaborative Studies Coordinating Center (CSCC), the Lineberger Comprehensive Cancer Center (LCCC), the North Carolina Translational Research and Clinical Studies (NC TraCS), or as a member of another university research project team [BIOS 841 and BIOS 843];
5. PH09: taught basic statistical theory and applications effectively, not only to biostatistics majors, but also to other health science practitioners [BIOS 850].

Degree Requirements / Curriculum

The Gillings School of Global Public Health requires a minimum of 18 semester hours of course work beyond the Master's degree for a PhD student to be able to take the PhD written qualifying examinations and to begin work on their dissertation. The Department of Biostatistics requirements are as indicated below. Requirements (1), (2), and (3) may be waived for students who have had previous training or experience deemed equivalent by the Director of Graduate Studies (DGS). Courses counted toward the Gillings School of Global Public Health requirements, or taken at UNC prior to entry into the program, may be included in (5).

1. Mathematics

1. Advanced Calculus and /or Real Analysis

The PhD student is required to take BIOS 760 and BIOS 761. This requires working knowledge of advanced calculus equivalent to at least the level of MATH 521 at UNC-CH.

- Linear Algebra

The PhD student is required to take BIOS 762. This requires working knowledge of the material in MATH 422, 577, and 547 at UNC-CH.

Students who have not taken advanced calculus and/or real analysis are required to take an equivalent course at UNC such as MATH 521

2. Statistical Computing and Data Science

- BIOS 611. This is a required course in data science.
- BIOS 735. This is a required advanced statistical computing course.

3. Basic Statistics

- The elements of probability, statistical inference, statistical methods, and linear regression. Required courses are: BIOS 662, BIOS 663, BIOS 672, and BIOS 673. Most of these courses are included in a typical MS program.

4. Advanced Statistics

- Required Courses: BIOS 735, BIOS 760, BIOS 761, BIOS 762, BIOS 767, BIOS 780, and BIOS 850
- Electives: At least 9 semester hours. Acceptable courses include all those numbered at the 700-level in Biostatistics or in (Mathematical) Statistics at UNC-CH, and equivalent courses in Statistics at other institutions as approved by the DGS. Requests to count 700-level courses in STOR toward this requirement are considered individually.

NOTE: BIOS 735, 760, 761, 762, 767 are typically taken during the second year of study and 780 is typically taken during the third year, following completion of BIOS 662, 663, 672 and 673 during the first year of study for students who are admitted to the PhD program with a bachelor's degree.

- Bootcamps
- Students taking BIOS 760 in the fall semester are required to take the Real Analysis Bootcamp, offered each summer, in the summer immediately preceding that fall semester
- Students taking BIOS 762 in the fall semester are required to take the Linear Algebra Bootcamp, offered each summer, in the summer immediately preceding that fall semester.
- PhD students taking BIOS 611 in a fall semester are required to take the SAS Bootcamp, offered each summer, in the summer immediately preceding the fall semester.

5. Supporting Program

- A supporting program of at least 6 semester hours, including EPID 600 or 710 and SPHG 600 (or equivalent), is required.

6. Practicum

- BIOS 841 and BIOS 843 (4 semesters (credits)) are required. BIOS 843 can be taken only if you have taken both the theory and applications written qualifying exams. Note that there are mandatory attendance requirements for BIOS 843 described in the course syllabus.
- In addition, each PhD student may be required to grade up to 3 courses (up to 4 for a combined MS/PhD program).

7. Dissertation Registration

- All doctoral students must register for a minimum of 3 credit hours of dissertation work (BIOS 994).

8. Transfer of Credits

- A doctoral student may request transfer up to 6 credit hours from another institution. Courses transferred are subject to examination at the time of the PhD oral examination. The Committee may recommend the transfer of both course and residence credit in its report to the Graduate School, which has the final responsibility for approving the transfer. Transferred credit does not relieve the student of the residence requirement of at least one academic year of continuous full-time study, or the equivalent, at UNC-CH.

Examinations and Dissertation

Written Qualifying Examinations

Each PhD student is required to pass the PhD written qualifying examinations in biostatistics theory and applications. The PhD written qualifying examinations are usually taken in the beginning of the third year of the program, depending on the student's prior obtained degree before entering the program.

Preliminary Doctoral Oral Examination

In the Department of Biostatistics, the preliminary oral examination consists of two parts, a written document, and an oral presentation. The preliminary doctoral written document also consists of two parts:

- The first part is the student's review of the literature for the proposed dissertation topic, on which the student will be questioned by the Committee. This portion of the written document must be at least 12 pages in length, excluding the bibliography section.
- The second part is concerned with the research already obtained, and the feasibility of the proposed dissertation research. This portion of the written document must be at least 20 pages in length, excluding the bibliography section. An appropriate maximum length for the literature review and proposal is about 40 pages.

As stated in the Graduate School Handbook, students should have fulfilled, or will have fulfilled by the end of the semester in which the preliminary oral examination is to be taken, all required course work and the minimum residence requirements for the doctorate. Additional considerations include the following:

1. No doctoral student is allowed to take the preliminary oral examination until they have passed both the theory and applications written qualifying examinations.
- No doctoral student is allowed to take the preliminary oral examination without having completed all necessary coursework covered on the exam.
- A student must be registered for at least three (3) credit hours of BIOS 994 to take the preliminary oral examination.
- The preliminary oral examination must precede the final thesis defense by at least 4 months.

- In addition, no preliminary doctoral examination can be scheduled until the student has obtained some tangible research results as judged by the dissertation advisor.
- The literature review and proposal to be considered at the preliminary oral examination must be submitted to the Doctoral Committee at least three weeks before the oral is scheduled. An appropriate maximum length for the literature review and proposal is about 40 pages

Preliminary Oral Examination Instructions

It is important that all PhD students follow the timeline and process for the preliminary oral examination described here. This process should be started as soon as the dissertation committee is confirmed with the advisor. A checklist of items that should be completed or are in progress before the preliminary oral examination process can begin include:

- Student must have completed and passed the written qualifying examinations (theory and applications).
- An abstract must be completed.
- The full proposal can be added later, but no less than 3 weeks before the prelim date.
- Both the Doctoral Committee Composition and Doctoral Exam Report forms must be completed, saved, and uploaded into a folder created to contain all the dissertation materials. To begin the process, students should access http://internal.bios.unc.edu, enter their ONYEN and password, click OK, and proceed by clicking on Oral Exam Request. The following is a brief summary of the timeline and steps required to complete the process:
- Section one should be completed. The student should enter their room information after they have received confirmation from SPH.
- Section two should be completed. The dropdown box will have names of all BIOS faculty. If a dissertation committee member is not in the list, their name will need to be entered.
    - If a dissertation committee member is not listed on Graduate School Designation, a copy of their CV should be uploaded. In general tenure track/tenured professors are on the list, and fixed term may or may not be on the list. By clicking on Graduate School Designation, a student can see if their committee members are listed.
- At 5 weeks out, the student will need to upload their abstract and ensure the Doctoral Committee Composition and Doctoral Exam Report forms are uploaded.
- At 3 weeks out, the student will need to have their proposal uploaded in the online system. If the time to the scheduled prelim is less than 3 weeks, the system *will not* allow the proposal to be uploaded, and the prelim will need to be rescheduled.
- At 2 weeks out**,** the system will send out a prelim announcement, the doctoral committee composition and doctoral exam report forms, and the proposal and abstract to the student and their dissertation committee members.

After the examination, the completed reporting forms should be returned to the Academic Coordinator. For any part of the prelim, the Dissertation Committee may award a PASS or FAIL, or a PASS subject to specified conditions (such as additional course work, or the passing of a special examination covering a specific topic). A student who fails a part of the prelim is entitled to one re- examination, but not until at least 3 months have elapsed. Re-examination of the first part may be in writing, by request of the student. Appeals of Committee decisions may be made to the faculty of the Department through the Department Chair.

Final Dissertation Defense

When a date for the final dissertation defense (referred to as the Final Oral Examination in the Graduate School Handbook) is chosen, the student will access http://internal.bios.unc.edu, enter their ONYEN and password, click OK, and proceed by clicking on Final Exam Request. The student should enter their room information, upload their abstract and dissertation. The system will notify the doctoral committee, Biostatistics faculty and peers. enter their ONYEN and password, click OK, and proceed by clicking on Final Exam Request. The student should enter their room information, upload their abstract and dissertation. The system will notify the doctoral committee, Biostatistics faculty and peers.

At least three weeks after entry into http://internal.bios.unc.edu the candidate takes the final dissertation defense. This includes a public exposition and defense of the dissertation, presented as a seminar or colloquium, at which time the candidate answers questions regarding the dissertation that are raised by the Committee and others present. Immediately after the public meeting, the Committee members meet with the student to conclude the thesis defense, at which time they may also ask questions of the student about the dissertation or other areas of research.

The Graduate School form for reporting the results of the final dissertation defense is sent by the Academic Coordinator to the doctoral committee chair prior to the defense; the completed form is returned to the Academic Coordinator following the defense.

A student must be registered for BIOS 994 for three (3) credit hours to take the final dissertation defense.

Environmental Science and Engineering

What You Will Learn in this Program / Mission Statement / Overview

Chair's Statement (from Barbara J. Turpin, Ph.D.)

Increasingly, the faculty and students of the Department of Environmental Sciences and Engineering (ESE) are responding to, planning for, and working to mitigate new and evolving public health threats – that oftentimes have a disproportionate impact on marginalized communities. Some of these threats include viruses transported by airborne particles, hazardous agents in contaminated floodwaters, antibiotic resistance, air pollution exposures from drought-enabled wildfires, changes in water availability in low-income countries, extreme weather-impacts on the financial health of local water districts and exposures to legacy and emerging contaminants.

This work is uniquely possible at a place like Gillings, where engineering, science and public health are found together, and where health equity is a part of our mission. Addressing surprising new challenges requires a depth of knowledge, but also a willingness to teach and learn from others, to broaden your perspective, to be creative and to work collaboratively across disciplinary boundaries. You will make the most of your education when you seek out and embrace opportunities to do this.

We will need integrated and holistic solutions. If anything, the past decade has shown that stove-piped responses will not deliver the long-term, sustainable results we need. Engineering solutions to household water service provision, for example, must be done within the broader context of a one-health approach to providing a disease-free living environment if we are to meaningfully reduce water-

related diseases. As environmental scientists and engineers located within the top *public* school of public health, ESE is ideally positioned to provide holistic, intersectoral responses to mitigate and prepare for the pressing environmental challenges (e.g., by characterizing susceptible populations, characterizing and prioritizing health risks, examining energy policy options with co-benefits for health, engaging communities to improve resilience, and designing next-generation technologies). Thus, while we celebrate a century of environmental solutions to public health problems, we affirm our commitment to build public health resilience to climate and environmental change.

ESE's history of leadership. Our work today builds on ESE's long tradition of local and global impact. We are the nation's first engineering department in a school of public health. We enrolled our first Sanitary Engineering master's student, Roy Jay Morton, under Thorndike Saville in the fall of 1920, when there was a pronounced need to improve water safety in the towns and cities of North Carolina and also stark inequities in water, sanitation and health between white and black neighborhoods. Our public health achievements were notable, and also severely hampered by systemic racism. ESE was a founding department of UNC's School of Public Health (1940) under Herman Baity. The student body and curriculum began a substantial evolution in the 1960s. We began admitting women (e.g., Linda Little) and African American students (e.g., Bill Small, Otto White) and international aid organizations began sending students from several continents to be educated by the department. A 1971 survey estimated that 25% of graduates were addressing water and sanitation challenges in international health organizations and foreign governments, including African and Latin American countries. Three of the first four Directors of Environmental Health at the World Health Organization were our alumni. Under the leadership of Dan Okun (1955-1973) and continuing under Russell Christman (1973-1989), ESE became a truly interdisciplinary department, providing a quantitative education in environmental sciences and engineering, with faculty expertise spanning sciences, engineering, management and policy domains in air, water and industrial hygiene. The department's current name was adopted in 1962 and William Glaze (1989-1997) added faculty in the health sciences.

Building the next generation of leaders. Today, ESE has over 2000 practicing alumni. Our graduates take with them an integrated, interdisciplinary, quantitative, mechanistic education that links health risks back to sources. They are engaged in efforts to improve environmental quality locally and globally, including through technological innovation, effective environmental policies, research and community engagement. We have an internationally recognized faculty in air pollution, environmental health sciences, climate change and health, global water policy, infectious disease and microbiology, environmental chemistry, transport, energy, and engineering. We are home to UNC's Water Institute, Center on Financial Risk in Environmental Systems, the Institute for Environmental Health Solutions, and participate in UNC's strong university-wide environmental and climate change communities. Since its founding, the Gillings School of Global Public Health has been a consistent advocate for health equity locally and globally.

Help us build a more healthy, equitable and sustainable future.

Department Overview

The Department of Environmental Sciences and Engineering (ESE) focuses on the interface between people and the environment. Interdisciplinary programs in air quality and atmospheric processes,

human exposure and health effects, and sustainable water resources draw from faculty expertise in the physical and life sciences, engineering and policy. We work to:

- Understand the environmental transport and transformation of chemicals and infectious agents;
- Protect vulnerable populations from toxic exposures;
- Mitigate the impacts of climate change on air, water and health; and
- Create a healthy, sustainable and equitable future.

This document is intended to provide a quick reference for students in our department.

What You Will Learn in this Program

The Doctor of Philosophy (PhD) degree, a terminal degree, is intended for students with a strong background in the sciences or engineering and prepares graduates for careers in basic and applied research, education, advanced practice, and management in the field of environmental sciences and engineering. Research, and publication in peer-reviewed journals, is a major focus of a PhD education.

Success in achieving the Environmental Sciences and Engineering PhD discipline specific degree competencies (see section C) is measured by the successful completion of all degree requirements including formal course work; a comprehensive written examination; a preliminary oral examination (proposal defense); preparation of a dissertation; and final oral defense of the dissertation. All PhD students prepare a research proposal and present their work in the Departmental Seminar (ENVR 400). Although not a requirement, most will present their work at national and international meetings and publish in peer-reviewed literature.

We offer a variety of primary and specialized courses intended to allow students to meet degree-specific competencies.

ESE Student Services is the first point of contact for any questions or concerns. Email them at: ESEStudentServices@unc.edu. A complete listing of faculty and staff is available online.

Note: *At UNC-Chapel Hill, the Graduate School administers graduate degrees and is the official School for graduate students. Its regulations, as set out in the Graduate School Handbook, are the final authority on academic matters.*

Admission Requirements

Detailed admission requirements for the PhD in Environmental Sciences and Engineering can be found on The Graduate School's website, under the Environmental Sciences and Engineering degree program link in the Public Health section.

If a Master's student is interested in moving from a Master's to a Doctoral program, they should consult with their faculty advisor and ESE Student Services. The Graduate School offers three options, including proceeding beyond the master's and bypassing the master's completely. The third option is that a student might be encouraged to apply to the PhD while in their Master's program, which would allow them to qualify for recruitment awards through the department and The Graduate School. Students are encouraged to talk with their advisor about which option to take.

Concentration Competencies

Competencies developed by ESE faculty define what students should know and be able to do upon completion of the PhD program. Competencies guide our curriculum planning process and serve as a measure against which student achievement is assessed. Following are the degree-specific competencies for the PhD in Environmental Sciences and Engineering:

- Identify key knowledge gap(s), integrate knowledge, and design sound research strategies to fill gap(s) in knowledge in a specific area within environmental sciences and engineering.
- Develop the ability to critically evaluate environmental sciences and engineering research.
- Demonstrate depth of knowledge in a specific area within environmental sciences and engineering to support success in research.
- Develop skills to successfully execute a research design within the discipline of environmental sciences and engineering.
- Develop the ability to present/communicate environmental sciences and engineering research results formally to a broad audience.

Degree Requirements / Curriculum

Note: *At UNC-Chapel Hill, the Graduate School administers graduate degrees and is the official School for graduate students. Its regulations, as set out in the Graduate School handbook, are the final authority on academic matters.*

All graduate degrees offered by ESE involve a culminating experience – a thesis (MS), technical report (MSEE, MPH and MSPH), or dissertation (PhD). The culminating experiences provide students an opportunity to synthesize, integrate and apply knowledge and skills learned in coursework and other learning experiences and require students to demonstrate attainment of program competencies.

Upon admission, students are assigned a faculty mentor from the ESE faculty. The Academic Coordinator assists the student in navigating the graduate school and departmental rules and expectations. The faculty mentor guides them in choosing an appropriate program of coursework and in forming a research committee, when appropriate. Usually, the faculty mentor will serve as the student's research advisor as well, though a research advisor from faculty (including adjunct faculty, or faculty in other departments) may be assigned. In this case, research advisor and mentor will serve on the student's examination committee.

The requirements for the PhD are governed by the Graduate School and ESE and include:

- Formation of a five-member (or more) committee tailored to the student's area of interest that guides all aspects of the student's study and research. A majority of the committee must be regular faculty at ESE, though an exception may be requested from the Graduate School via a written request from the Director of Graduate Studies;
- **Mastery of a depth of knowledge in a particular area of environmental health, sciences or engineering**: consisting of at least 15 credits of courses approved by the student and their dissertation committee;

- **Mastery of two research skills**: to be determined by the student and dissertation committee. This requirement can be met by taking two courses, hands-on workshops or other trainings leading to certification, for example in various modeling software, or operator training on specialized instrumentation;
- **ENVR 400** (Departmental Seminar): for PhD students, this requires enrolling in 0.5 credits each semester until students have attended 30 seminars, completed associated assignments, and presented a seminar on their research. See the course website and information below for additional details;
- **SPHG 600** (Introduction to Public Health);
- **ENVR 601** (Epidemiology for Environmental Scientists) **or EPID 600** (Principles of Epidemiology for Public Health): higher level epidemiology courses can be substituted with approval of the Director of Graduate Studies;
- **ENVR 703** (Proposal Writing for Environmental Research): taken when the student is or about to write the dissertation proposal;
- **ENVR 704** (Critical Analysis of Environmental Research): must be taken twice, preferably during the first and second years;
- **Completion of a comprehensive written examination** to test student's knowledge and evaluate preparation for dissertation research (see Section E);
- **Completion of an oral exam defending the student's research proposal** (see Section E);
- **Completion of a significant and original body of research**, which requires a minimum of six semester hours of ENVR 991 (Research in ESE) and a minimum of six hours of ENVR 994 (Doctoral Dissertation) (see Section E); and
- Preparation, presentation, and **defense of the research dissertation**.

The PhD Course Planning Worksheet can be found here. The Worksheet includes an *approximate* timeline for PhD students.

Full Time Status after Comprehensive Exam & ENVR 994

The following is ESE policy regarding credits necessary to maintain status as full-time student: Once a PhD student's Dissertation Committee has certified that the student's coursework has been completed, they have passed the doctoral written exam, and the coursework/exam paperwork is on file with ESE Student Services, **the student will be considered full-time as long as the student is registered for a minimum of 3 credits of ENVR 994**. Students must be registered for a minimum of 3 credits of ENVR 994 when they take their preliminary oral exam (dissertation proposal defense)

Courses

A current listing of courses is available on our department's course page.

ENVR 400 - Seminar Series

ENVR 400 is intended to provide students with exposure to the breadth of research activities in the Department. It also provides an opportunity for doctoral students to gain experience presenting their research to a diverse audience. Attendance and feedback policies are designed to encourage students to

support their colleagues in this endeavor, to provide feedback to them, and to ask questions to gain a better understanding of their work.

Students who matriculated prior to Fall 2021 should follow the rules in place before then but refer to the course website to ensure that you are fully acquainted with them. Students beginning their matriculation in Fall 2021 or later semesters should follow the rules described in this document. For specific descriptions of terms used here (such as attendance credit, hours of credit, feedback etc.), please refer to the appropriate links on the course website.

Students pursuing doctoral degrees must receive attendance credit for 30 seminars (and complete associated assignments/feedback) in the ENVR 400 Seminar Series with at least 15 before admission to doctoral candidacy. PhD students must also present a seminar in the series no later than the semester before the one in which the dissertation defense (final exam) is scheduled. ***Seminar attendance credits received by students while on the Master's track in this department carry over to the PhD track.***

Students must begin meeting the ENVR 400 requirement in the first semester of their program. They should register for 0.5 credits every semester they plan to attend ENVR 400 toward fulfilling its requirements. Students must receive a minimum of 4 attendance credits each semester to receive a Pass grade for that semester. PhD students continue to register and complete ENVR 400 requirements until they have received 30 attendance credits and have presented their own seminar. Students should contact the instructor of the course to schedule their seminar presentation. Typically, this should be given no later than the semester in which they intend to graduate and they should contact the instructor during the semester prior to the one in which they desire to present.

To receive attendance credit, students must attend, answer the questions posed by the lecturer correctly, and complete assignments (feedback) as specified on the course website. Each semester between 8 and 10 seminars are scheduled in the ENVR 400 series at a fixed time and place identified on the course website and the course Sakai site. You must submit feedback for at least half of the seminars that you attend in any semester. This means that if you attend nine seminars and only provide feedback for four of them, you will only receive credit for eight seminars. If you provide feedback for five or more, all nine will count. Feedback **cannot** be submitted in a future semester to count against attendance in a different semester. If a student does not receive at least 4 attendance credits during a semester in which they are registered for ENVR 400, they will receive an incomplete which can be converted to a Pass grade in a subsequent semester once the requirement for that previous semester is met. However, there is no double counting and future attendance credits will only be given once the incomplete is converted to a Pass grade. Students are responsible for monitoring their progress and must report any discrepancies in their record without delay to the instructor. If an Incomplete grade remains for more than 2 semesters, the student will automatically receive a Fail grade which will prevent the student from graduating.

This course meets a discipline specific competency and successful completion is required for graduation.

This course is currently (as of Fall 2022) being taught in a remote format. In semesters when the course is taught "in person," students will be expected to be present in person to receive attendance credit unless special permission is obtained in advance. Details will be provided in the syllabus and course website.

Students on the PhD track are required to present their own seminar in ENVR 400 no later than the semester prior to the one in which they intend to graduate. They should reach out to the instructor well in advance to schedule.

ENVR 991 - Research in Environmental Sciences and Engineering

Before completion of coursework, students should register for ENVR 991 each semester that they are doing research. Research credits should be a reflection of the research effort of the student. Students can register for 1- 9 credits of ENVR 991 per semester.

Prior to completing the comprehensive written exam, research hours typically account for a significant number of credit hours each semester. Typically, a full-time student will carry a total semester load of approximately 16 credits. Please note, 16 credits is the maximum number of credit hours a graduate student can register for during a semester, without an exception to policy (i.e., tuition increases above 16 credits). Keeping in mind these guidelines, students should speak with their faculty advisor to determine the appropriate number of credits of ENVR 991 for which to register.

Students who are near the end of their program and are registered for ENVR 994 might not need to register for ENVR 991. Please speak with your faculty advisor to determine if you need to register for research credits while working on your thesis or professional paper.

Part-time students should speak with their advisors and or the ESE Academic Coordinator should they have questions about registering for ENVR 991.

How to determine your research hours? Each semester, students who have not yet completed coursework should register for any desired classes, making sure they are registered full-time (total of 9 credit hours including ENVR 991, or 3 credits of ENVR 994). Then, if appropriate, the student may increase the number of registered ENVR 991 credit hours until the sum of all credit hours is 16 for the semester. Please speak with your faculty advisor and/or the ESE Academic Coordinator so they can help you calculate the appropriate number of research credit hours for which to register. For guidance in deciding the number of ENVR 991 credits for which students should register, students and advisors may consult the credit hour definition by the UNC Registrar's Office here.

ESE graduate students work hard on research, and this should be reflected in the number of research hours students register for each semester. Registration for research credits ensures that you are enrolled in the correct number of credits that corresponds with the work you are doing, and so department resources are allocated accordingly.

Tuition Note: As outlined by the UNC Cashier's Office, tuition is assessed on a per credit hour basis. For most graduate programs, tuition is capped at full time enrollment, which is nine hours for graduate students. Estimated rates by program can be found using the tuition estimator. This means that 9 -16 credits cost the same amount of tuition. For more detailed tuition and fees information see the Cashier's website.

Declaring a Minor

To request a minor, **graduate students** must fill out the appropriate form ("Minor Declaration Form" on the Graduate School's forms page, and email it to ESE Student Services. Note that the courses in the

minor field must be completed ***in addition*** to ESE requirements for the graduate degree, as per the Graduate School's handbook.

Waiving School of Public Health Requirements

Students may petition to waive School of Public Health course requirements if they possess the appropriate background, or they may substitute other courses in certain circumstances. More information is available on the Gillings Academic Forms and Policies website.

PhD students with previous public health degrees do not need to meet the SPHG 600 requirement. Students can find the exemption form that needs to be completed here.

Examinations and Dissertation

Overview

All PhD applicants in ESE must pass a comprehensive Written Doctoral Examination and a Dissertation Proposal Defense prior to official acceptance as a doctoral candidate. As a doctoral candidate, students complete their research and document it in the form of a Dissertation that they submit to their Dissertation Committee and defend orally during what is called the Dissertation Oral Defense. For the entire process (i.e., coursework, written doctoral exam, dissertation proposal, and dissertation defense), the student should seek the advice and approval of the Dissertation Committee.

Dissertation Committee Composition

The Dissertation Committee should be formed by the end of the first calendar year. The Committee consists of at least five members with the following requirements:

- The majority of the committee members must hold tenured, tenure-track, or research faculty appointments in ESE
- Other committee members may be members of other academic departments at UNC, or members of the Graduate Faculty or special appointees
- Special appointees must be approved by the Dean of the Graduate School
- Committee membership must be approved by the Graduate School

Students should decide, in consultation with their advisor, the composition of their Dissertation Committee.

Doctoral Qualifying Written Examination

Before scheduling the Doctoral Qualifying Written Examination, the following must be completed:

1. All required coursework (except ENVR 400 and 703) or the student must be in the final semester of the course plan approved by their Dissertation Committee
2. Residency requirement and any conditions attached to admission

Once these milestones have been completed, the student meets with their Faculty Advisor for **approval to take written examination**. A Dissertation Committee meeting is then scheduled. During this meeting

the student should seek approval from the Dissertation Committee to take the Doctoral Qualifying Written Examination.

When approval is granted, the student and advisor sign and return the Application to Take the PhD Comprehensive Written Examination Form to ESE Student Services. In signing the form, the faculty advisor certifies that the student is qualified to take the exam. ***The signature of the Faculty Academic Advisor (if different from the Research Advisor) is required to certify that the Committee agrees that the coursework is complete.*** The completed form is submitted to ESE Student Services.

The following items should be sent to the committee members prior to the meeting and are to be brought to the meeting.

- A list of all coursework and research skills completed
- A brief outline/description of dissertation topic
- A timeline for completion of research

Doctoral Qualifying Written Examination Format: The format of the Doctoral Qualifying Written Exam shall be proposed by the student's academic and/or research advisor, after consultation with the student, and approved by the Doctoral Dissertation Committee.

***The following Graduate School form must be signed after passing this comprehensive exam: Doctoral Exam Report* Form (PART I)**

Once a PhD student's Dissertation Committee has certified that the student's coursework has been completed, they have passed the doctoral written exam, and the coursework/exam paperwork is on file with ESE Student Services, **the student will be considered full-time as long as the student is registered for a minimum of 3 credits of ENVR 994**.

Dissertation Proposal Defense

The Dissertation Proposal Defense should be scheduled as soon as reasonably possible, generally within no more than six to twelve months after successful completion of the Doctoral Written Examination. The Dissertation Proposal Defense cannot be taken before the Doctoral Written Examination is passed. The student should coordinate with the Dissertation Committee to schedule a date for the Dissertation Proposal Defense. Once a date is determined, the student must schedule a room and ensure the availability of the appropriate technology.

Copies of the dissertation proposal should be distributed to the dissertation committee members 3 weeks before the defense. The Dissertation Proposal Defense is administered by the Doctoral Dissertation Committee with the faculty advisor (academic advisor if different from the research advisor) as chairperson – all committee members must be present.

Students must be registered for a minimum of 3 credits of ENVR 994 when they take their preliminary oral exam (dissertation proposal defense). Note that a minimum of six hours of ENVR 994 needs to be taken during a doctoral student's program – a student may consider registering for three hours of 994 prior to the Dissertation Proposal Defense if they anticipate graduating after only one additional semester.

Dissertation proposal document format: The format of the dissertation proposal document should be discussed with the research advisor (and academic advisor if different). Many students write a proposal using the guidelines for research proposals set by funding agencies such as EPA, NIH or NSF.

The Permission to Take the Oral Exam , signed by the student's research advisor, documents that the student is ready to take the preliminary oral exam (Dissertation Proposal Defense).

The following Graduate School form must be signed after passing the proposal defense: ***Doctoral Exam Report* Form (PART II)**

Dissertation Oral Defense

After passing both the Doctoral Written Examination and Dissertation Proposal Defense, a PhD dissertation must be written and defended orally. The candidate's faculty advisor (academic advisor if different from research advisor) must review and approve the dissertation draft before distribution to the Dissertation Committee. The Committee must have sufficient time to review the dissertation draft prior to the defense. Therefore, copies of the dissertation should be distributed to the Dissertation Committee approximately two weeks before the Dissertation Oral Defense. The doctoral candidate must coordinate with the Committee the date and time for the Defense.

The Permission to Take the Oral Exam, signed by the student's research advisor, documents that the student is ready to take the ***final oral exam*** *(Dissertation Oral Defense).*

Dissertation document format: a Dissertation is a highly technical document comprising the body of original research work performed by the student during their doctoral studies. Students should discuss with their advisors the specific format to use, but a typical format is composed of 5-6 chapters where the first chapter is an Introductory chapter, the following three chapters are three distinct scientific contributions to the student's field of study (e.g., three research papers published or publishable in peer-reviewed journals), and Conclusions/Implications/Future Work chapter(s).

Dissertation Oral Defense format: For all degrees, the thesis/dissertation defense (final oral exam) is a 45-minute public seminar in which the results of research are presented, using visual aids (e.g., PowerPoint) as appropriate. The presentation is organized according to specific aim(s), description of the background and context of the research, the experimental design (and hypothesis if appropriate), the experiments, and the results obtained. The presentation concludes with a discussion of the significance of the findings, and the implications for environmental health. The general audience then has the opportunity to ask questions. After the open questions (and possibly a short break, and/or private discussion among the Committee), the Committee will meet in closed session with the candidate to ask more detailed questions about the research, the presentation and interpretation of the results, the conclusions, and potentially any other material that a student in the designated program could reasonably be expected to know. At the conclusion of the closed session the candidate will be excused while the Committee confer among themselves to evaluate the thesis/dissertation and defense.

The Committee makes recommendations for revisions to the thesis/dissertation. The final revised version should be signed on the cover page by the committee members to signify their approval of the final revised version. A PDF file of the final dissertation is uploaded to ProQuest.

The following Graduate School form must be signed after passing the dissertation defense (final oral exam): ***Doctoral Exam Report* Form (PART III)**

The following Graduate School form must be signed when the Committee approves the dissertation: ***Doctoral Exam Report* Form (PART IV)**

Completing Graduate School Defense Paperwork

Please see our detailed help documentation that identifies where ESE students and faculty should complete and sign the defense paperwork required by The Graduate School (**see Section F, below)**. This paperwork must be completed and submitted to the ESE Academic Coordinator (esestudentservices@unc.edu) before students submit their dissertation to The Graduate School.

Dissertation Submission

Please refer to The Graduate School submission instructions. After the dissertation is revised to the dissertation committee's satisfaction and signed, the student will upload it to the ProQuest Thesis and Dissertations database https://gradschool.unc.edu/academics/thesis-diss/ (note that there is a fee). The Graduate School will review it before it is published and may require some revisions (usually formatting) from the student.

Guidelines for Formatting Dissertations

Dissertations must follow the formatting guidelines as laid out in the Graduate School Thesis and Dissertation Guide.

Guidelines for Submitting Dissertations

These are currently outlined on the Submission of Final Work webpage. Dissertations are uploaded to the ProQuest database through the Graduate School.

Other Important Information

Courses

A current listing of courses is available on our department's course page.

Inter-Institutional Registration

UNC-Chapel Hill has inter-institutional agreements with Duke University, North Carolina State University, North Carolina Central University, and the UNC Campuses in Charlotte and Greensboro.

More information is located here on the Registrar's website. The form must be signed by the student and their advisor before being submitted to ESE Student Services.

***Note**: Gilling's policy for accepting inter-institutional classes differs from the UNC Registrar. Before registering for a class, meet with the Academic Coordinator to make sure credit can be transferred and applied.*

Faculty Research Interests

Please see our faculty research page here.

Residency and Tuition Remission

The state of North Carolina distinguishes between residents and non-residents for tuition purposes. Non-residents must pay an out-of-state portion of tuition.

Non-resident students should start taking steps to apply for residency as soon as they arrive. Information on residency is located on the registrar website. US citizens and US permanent residents who are non-residents are strongly encouraged by the Department to apply for NC residency once in state for 365 days. It is possible to obtain residency shortly after a year of living in North Carolina, but only if a substantial number of tasks (e.g. registering a vehicle, registering to vote, paying taxes in North Carolina) are completed within a short period of time after moving to the state. The intent of this process is to demonstrate that the student is intending to set up domicile in North Carolina – not simply live here to go to university.

International students cannot apply for residency, though permanent residents of the United States can (see the North Carolina State Residence Manual linked to from the Graduate School's website for more information).

Why ESE Graduate Students Need to Gain NC Residency?

We expect domestic students to obtain residency during their first year. You should gain residency as soon as you can because the out-of-state portion of tuition costs each student about $18,000/year. For students who serve as TAs, the sponsoring department rarely covers the out-of-state portion after the first year. Thus, students need to begin the process of applying for residency as soon as they arrive. Students can reapply every semester until residency is granted.

You can find more information about the NC Residency Eligibility Requirements here.

Insurance

If a student is on the RA/TA/Fellow (GSHIP) plan, they must waive the compulsory UNC Student Blue insurance every semester. If a student is on other insurance (e.g. a spouse's) they must also waive the compulsory UNC insurance every semester.

Otherwise, the student will be enrolled in the regular student plan and be billed accordingly.

RAs, TAs and Fellows who are on the GSHIP will be sent a 1112.1.1f UNC-CH Graduate Student Health Insurance Program form. Students will need to return this form as soon as they can, preferably before August.

Note that for students graduating or coming off payroll, the GSHIP is cancelled quite soon afterward (the end of May for May graduates, or for those coming off payroll in May), so they should make other arrangements as soon as they can, whether through an employer or through the marketplace. Continuing students who are coming off payroll and GSHIP insurance in May can enroll in Student Blue plan at any time of the year as losing GSHIP is considered a qualifying life event to enroll in Student Blue.

Committee and Faculty Advisor Meeting forms

A **Committee Meeting form** should be submitted to the student services office for every formal meeting that takes place between a student and their committee. In lieu of this form, a brief statement describing the meeting (who was present, discussion topics etc.) could be submitted. Any changes to a student's committee should be reported to the student services office.

We also encourage you to use the **Faculty Advisor Meeting form** when you meet with your faculty advisor.

Policies for Changing Advisors

Students may change their academic or research advisor if they find a willing new advisor to take them on. There is no formal process for this, but students should consult with their current advisor, particularly if they are being funded through a research assistantship with that advisor.

Students who need assistance handling a problem with their advisor should talk to the Director of Graduate Studies or the Academic Coordinator. If they find they need additional assistance, they can make an appointment with the ESE Department Chair (ESEChair@unc.edu).

Addressing Students Concerns

Your well-being and positive student experience are important to us. Please visit and bookmark this page for reference. We are committed to addressing issues in a fair, timely and professional manner. We know it will not be possible in some cases, but to help us achieve the best outcome, we ask students to **follow the 5 steps below whenever possible**:

Step 1: Contact your instructor, the individual with whom you have a concern, or your faculty mentor as appropriate. Most concerns can be resolved through discussion between the person(s) involved. If you are uncomfortable interacting directly with the person(s), or if the concern is not resolved satisfactorily, proceed to step 2.

Step 2: Discuss the matter with your department's Director of Graduate Studies (DGS) or the ESE Academic Coordinator. If you have consulted with the DGS, or designee, and still believe the matter has not been dealt with satisfactorily or equitably, proceed to step 3.

Step 3: Discuss the matter with your department chair. If you believe the matter has not been dealt with satisfactorily or equitably, you can proceed to step 4.

Step 4: Schedule a meeting with Charletta Sims Evans, the SPH Associate Dean for Student Affairs (simsevan@email.unc.edu), if you need further consultation.

Step 5: If the issue is still not resolved and you are a **graduate student**: schedule a meeting with Kate McAnulty, the associate dean for student affairs in The Graduate School (kmcanulty@unc.edu). **Undergraduate students**, contact the Office of Dean of Students.

Room and Audio/Video (AV) and Other Equipment Reservations

Relevant information is located on the Gillings website.

Other equipment for check-out as well as audio and video editing facilities are located in the basement of the House Undergraduate Library.

Poster Printing

Conveniently located at the center of campus on the third floor of Student Stores, the UNC Print Stop and Copy Center offers printing and copying services. You can find more information about poster printing here.

Defense Timeline and Announcements

To announce your defense, students should send an email to esestudentservices@unc.edu that contains their name, the type of defense they will complete, date of defense, zoom link or location, thesis or dissertation title, abstract, and committee members (indicate dissertation committee chair/advisor). Please follow the following format/template:

1. Student Name
2. Type of defense
3. Date
4. Zoom link or Location
5. Title:
6. Abstract:

7. Committee Members (indicate committee chair):

Defenses should be scheduled at least two weeks before The Graduate School submission deadlines so that students have time to incorporate any committee edits and complete submission formatting requirements.

Students are encouraged, but **not** required, to make their defense open to the public.

How to Complete Required Defense Paperwork

Completing the official defense paperwork required by the Graduate School can be confusing. We have laid out where students and faculty need to sign these forms (below, **Figure 1** & **Figure 2**). This paperwork should be returned to the ESE Academic Coordinator at esestudentservices@unc.edu.

Students should communicate with their faculty advisor/mentor about what other materials they should bring to their defense.

Figure 1: Report of Doctoral Committee Composition and Report of Approved Dissertation Project
([click here to access this form](#) via The Graduate School – High Res)

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Report of Doctoral Committee Composition and Report of Approved Dissertation Project Form
Use this form for ALL PhD Students

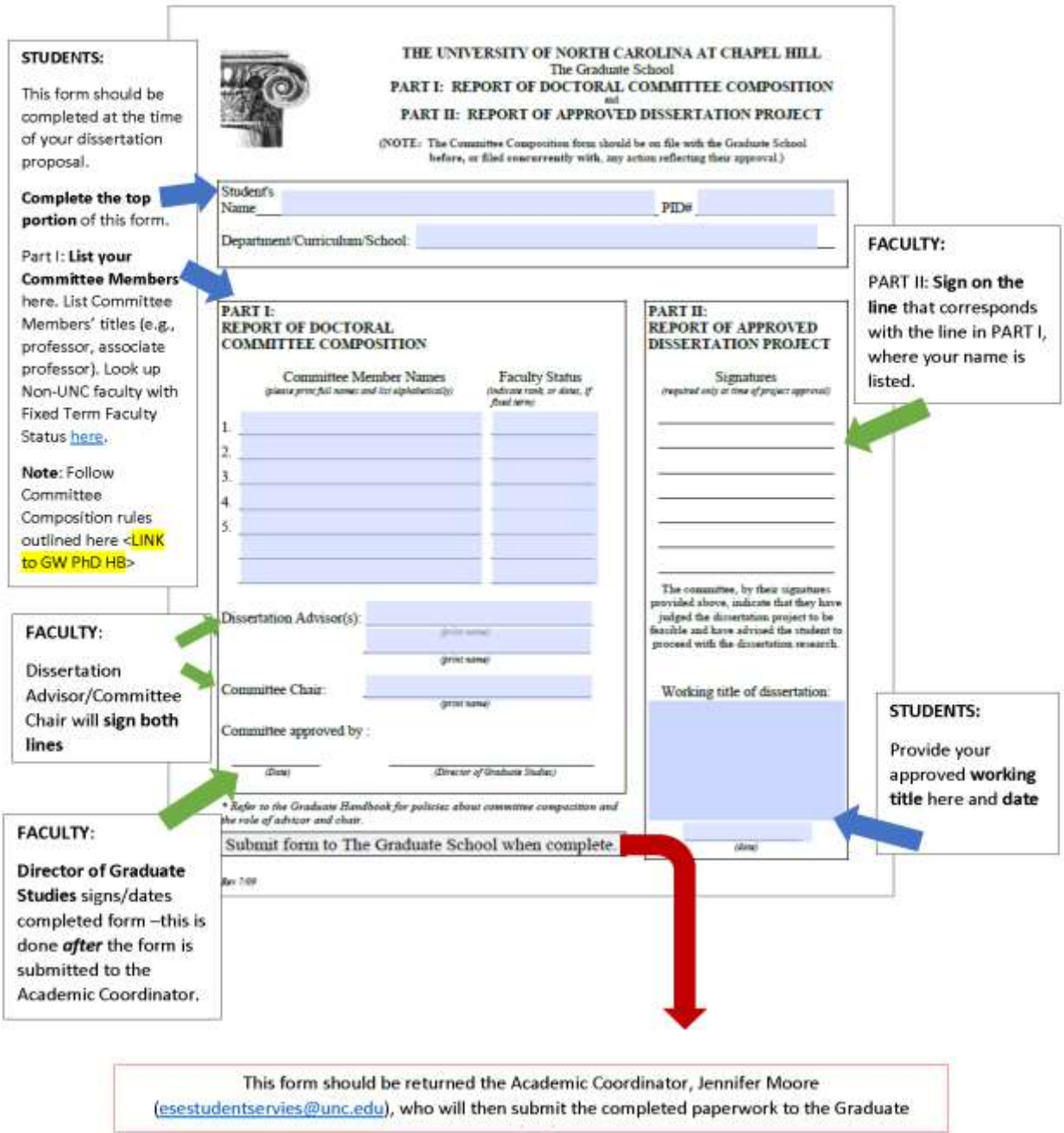
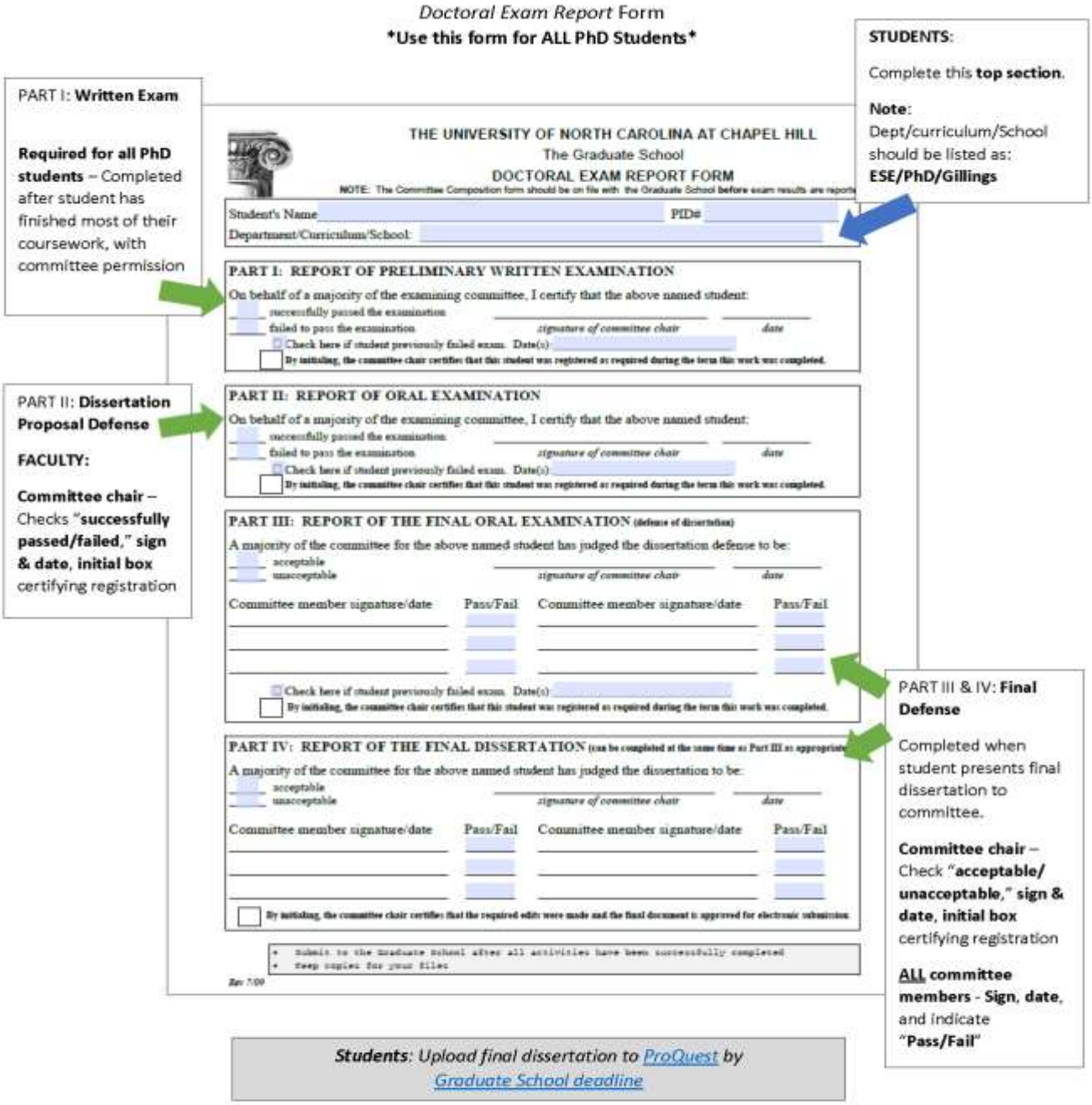


Figure 2: Doctoral Exam Report (click here to access this form via The Graduate School – High Res)



This form should be returned the Academic Coordinator, Jennifer Moore (esestudentservies@unc.edu), who will then submit the completed paperwork to the Graduate

Epidemiology

What You Will Learn in this Program / Mission Statement / Overview

This section of the handbook provides comprehensive information on policies and requirements for the Doctoral program in the Department of Epidemiology. It is intended for the use of students and faculty and is updated annually. Many forms are referenced throughout this document and can be found at the links below. You need to pay close attention to the instructions in this document regarding which forms you complete and which ones the Academic Coordinator will complete.

What you will Learn in the Program

Students in the Department of Epidemiology master study design, methodological, and quantitative analysis skills and develop subject area-specific expertise so as to advance knowledge regarding the causes and prevention of disease and the promotion of health.

Department Mission Statement

Our mission is to improve the public's health by training epidemiologists and by advancing knowledge concerning the causes and prevention of disease and the promotion of health. We strive to creatively integrate substantive knowledge and methods from many fields into epidemiologic research, teaching, and practice, with an ultimate commitment to benefit public health.

Overview

Department Organization

The Department of Epidemiology's Chair is Til Stürmer, MD, PhD. Dr. Audrey Pettifor is Associate Chair of the department. Department faculty as of July 2022 include 39 tenure track faculty (including 10 jointly appointed) and 23 fixed-term faculty (including 2 jointly appointed). There are 56 staff who help with the central and research administrative aspects of the department. A listing of department faculty and staff can be found here- https://sph.unc.edu/epid/epid-faculty-and-staff/.

The students have a central organizational group – the Epidemiology Student Organization. Their email address is eso@unc.edu.

The Department of Epidemiology has four standing committees: 2 Admissions Committees (PhD/MSCR and MPH), Graduate Studies Committee and Epidemiology Inclusive Excellence. In addition, there is faculty representation to several SPH committees: IRB, Academic Programs Committee, Inclusive Excellence Council, Research, Space, and Academic Promotion and Tenure.

The Admissions Committees handle all aspects of the admissions and recruitment process. Membership consists of faculty from the major focus areas, as well as the Academic Coordinator.

The Graduate Studies Committees provide oversight for the department's graduate program with respect to overall curriculum development and evaluation, requirements, qualifying examinations, new course and program approval, and other academic matters. Membership consists of departmental faculty representing both methods and substantive areas, and the Academic Coordinator. In addition, 2 to 3 student representatives are identified by the Epidemiology Student Organization to serve on the committees.

Admission Requirements

- A relevant master's or professional degree is beneficial, but not required. Students who have earned a bachelor's degree may still be admitted.
- Strong quantitative and biological preparation is highly encouraged.

Degree Competencies

The PhD program presupposes a foundation of knowledge of concepts and skills of epidemiology, an understanding of public health concepts and the population perspective, and the ability to read with sophistication reports of clinical and epidemiological studies. The PhD program assumes that graduates' professional identity and primary area of expertise will be in epidemiology, though the student may possess a prior area of professional expertise (such as medicine, nursing, or pharmacy).

The PhD program is designed to equip persons to function as independent researchers in academia, research institutes, government, or industry. While graduates often seek additional experience by way of postdoctoral training, a graduate of the PhD program is prepared to function as a faculty member of a

graduate program in a university or in a position in a public health organization, government or industry, or multi-disciplinary setting of comparable independence and responsibility.

The competencies of the doctoral program in Epidemiology (listed below) guide our curriculum planning process and serve as a measure against which student achievement is assessed. The competencies should be read in relation to the School's mission. They fully meet the competencies set out for doctoral education at the UNC School of Public Health.

Upon satisfactory completion of the PhD degree program the student will be able to:

1. Identify, critically review, and synthesize the relevant body of scientific literature, identifying gaps and important questions, constructing specific research questions, and considering the perspectives of relevant community stakeholders.

2. Design epidemiologic studies - including appropriate study populations, considering the relevance and importance of diversity in study populations, strategies of data collection, data collection instruments, ethical data collection procedures - to identify or monitor public health problems, investigate etiologic and preventive relations, predict health outcomes, and provide epidemiologic input for program evaluation.
3. Develop detailed protocols for collecting epidemiologic data by means such as questionnaires, biomarkers, interviews, medical records, data systems and other data sources, with adequate consideration of diverse group perspectives, historical experiences, ethical and privacy considerations, data management principles, data security, quality control, and oversight.
4. Develop detailed data analysis plans and conduct data analyses for epidemiologic data such as data collected from individuals and data systems, including datasets made available by governmental and other organizations, to address research questions and estimate relevant population parameters, taking account of data quality, measurement error (including measurement of social constructs such as race, ethnicity, and gender) potential for bias, including confounding.
5. Work in interdisciplinary teams and contribute results from epidemiologic research to an integration with findings from other scientific literature (biological, psychological, sociological) and other substantive information (e.g., community perspectives, concerns, and historical injustices).
6. Understanding how epidemiological research relates to improving population health and working to advance health equity.
7. Develop skills in teaching epidemiology and in presenting oral and written reports and explanations to professional, student, and lay audiences; providing comments, questions, and suggestions to colleagues presenting epidemiologic research or methods in written and oral form; and responding professionally and effectively to comments and questions from editors, peer reviewers, and readers/students/listeners.

Research Program Area Learning Objectives

Each major program area has established guidelines to ensure that the curriculum successfully addresses those issues that are specific to that area of research. This includes identification of learning objectives, methods for satisfying those learning objectives and monitoring of evidence of achievement of the learning objectives. Learning objectives are provided for the following program areas: cancer, cardiovascular disease, environmental/occupational, infectious diseases, injury, pharmacoepidemiology, reproductive/perinatal/ pediatric, and social epidemiology. The learning objectives can be found online at sph.unc.edu/epid/epidemiology-research/. Click on the program area of interest and follow link to "Learning Objectives and Courses."

Degree Requirements/Curriculum

The PhD in Epidemiology is the academic doctoral degree. It is a research degree, centered on a major research project within a broad public health orientation and seeking to integrate related disciplines. The program averages three to five years. Coursework and preliminary examinations normally require three years, with the remainder of the time devoted to the research and completion of the dissertation. The Department specifies degree requirements within a framework prescribed by the Graduate School.

For a checklist of doctoral degree milestones, as well as sample schedules and timelines, go to the Epidemiology Student Resources site on Sakai.

Required EPID Core Methods Courses

- EPID 704: Socially Responsible Epidemiology
- EPID 705: Introduction to Logic and Probability Logic in Epidemiology
- EPID 710: Fundamentals of Epidemiology [EPID 711 may be substituted by clinicians]
- EPID 712: Readings in Fundamentals of Epidemiology
- BIOS 600: Principles of Statistical Inference **or** BIOS 650: Elements of Probability and Statistical Inference I **or** BIOS 662: Intermediate Statistical Methods
- BIOS 645: Principles of Experimental Analysis **or** BIOS 663: Intermediate Linear Models
- EPID 715: Theory and Quantitative Methods in Epidemiology
- EPID 716: Epidemiologic Data Analysis
- EPID 718: Analytic Methods in Observational Epidemiology
- EPID 722: Epidemiologic Analysis of Time-to-Event Data
- EPID 726: Epidemiologic Research Methods

Additional Courses

- SPHG 600: Introduction to Public Health (Students who hold a public health undergraduate or graduate degree (e.g., BSPH, MPH, MSPH, DrPh) from a CEPH-accredited school or a CEPH accredited program may be exempt. Other students may be able to exempt, see details at Applying for a Core Exemption.)

- Substantive epidemiology courses: minimum of two courses; consisting of 1.) a minimum of 2 credits in the student's program area of study **and** 2.) a minimum of 2 credits in an area (or areas) outside of student's program area of study (i.e., one 2 credit course, or two 1 credit courses).
- Advanced statistics course/s as determined with mentor and specified by intradepartmental review committee (e.g., BIOS 664, BIOS 665, BIOS 667). Other courses approved to date by the GSC to meet this requirement include HBEH 762 (the 3-credit version only), SOWO 916, SOWO 917, SOCI 711, SOCI 717, and SOCI 718. Note that intermediate level BIOS courses (i.e., 550, 662, 663) do not count as the 3rd level course.
- Other coursework as stipulated by program area guidelines. (Refer to relevant focus area at sph.unc.edu/epid/epidemiology-research/.)
- Other coursework as determined with mentor and specified by intradepartmental review committee.
- EPID 994: Dissertation research hours, minimum of a total of six credit hours required (At minimum, three credits when defending proposal and three credits at final defense. Additional credit hours as needed.).

On-Site Doctoral Studies Policy

Doctoral students are strongly encouraged to complete their doctoral studies on-site, such that they can freely participate in planned (e.g., seminars, journal clubs, peer group meetings, etc.) and impromptu activities with the local community of scholars. This is not to discourage valuable off-site experiences, such as internships, practicums, study site visits, or data collection; rather, this is to discourage relocation outside commuting distance to the UNC campus before completion of doctoral studies.

Off-site doctoral studies may be permissible after successful completion of the following: (i) Graduate School residency requirements, (ii) Epidemiology qualifying examinations, (iii) dissertation proposal defense, and (iv) written approval by the mentor and a majority of the doctoral research committee.

Doctoral students should be aware of the following: (i) NIH training grants do not allow off-site doctoral studies, (ii) some Epidemiology faculty members will not work with off-site students, and (iii) periodic return trips to UNC will be required to meet with your mentor and committee members. Time to completion of the doctoral degree is often longer for off-site students.

Other Degree Requirements

- One semester teaching experience in epidemiology (see next page for list of approved courses)
- Practicum requirement demonstrating experience in a minimum of two study implementation activities as determined with mentor
- Competence in statistical computing and data management; may be satisfied by:
    - EPID 700: SAS and Data Management
    - BIOS 511: Introduction to Statistical Computing and Data Management, or
    - Prior experience using SAS (exemption exam required prior to beginning fall term)
- Competence in scientific writing

- Intradepartmental Review planning session
- Other requirements as specified by mentor (e.g., some may require two papers submitted, attendance at journal clubs and/or seminars, etc.)
- Other requirements as specified by program area (follow link to your specific area of focus- sph.unc.edu/epid/epidemiology-research/)
- Preliminary Doctoral Examinations:
    - Written examination: Doctoral Qualifying Examination- Methods and Substantive Components
    - Oral Examination: On the dissertation proposal
- Submission of a minimum of one manuscript from dissertation research to an external peer
- review mechanism
- Doctoral Dissertation
- Final Defense of Dissertation

Doctoral students plan coursework beyond the core requirements in consultation with the mentor and the intradepartmental review committee. Doctoral students are expected to take some higher-level biostatistics course(s). Additional substantive epidemiology courses are strongly recommended.

Teaching Requirement

The teaching experience is a requirement for students admitted into the doctoral program. The purpose of the teaching requirement is to make available to all doctoral students a learning experience in effective communication in their field of scientific work, and a tutored practice in the teaching of epidemiology. These skills and their application are part of the department's goals in the training of an epidemiologist leading to the PhD degree.

The student's mentor(s) is/are responsible for assisting in the development of a plan and timing that best fits the student's training path. The teaching experience may be paid (Teaching Assistant, or TA). For students who are not eligible to receive pay, or who choose not to, the experience may be reflected in credit hours by registering for EPID 883 (Teaching Intern, or TI). We encourage students to seek out teaching experience (either paid, for credit, or volunteer) beyond this single requirement, especially in courses that are pertinent to their program area or focus of research.

Goals of the Teaching Requirement

The main goals of the teaching requirement are to gain experience in direct instruction of students in epidemiologic research, typically through classroom instruction or office hours; academic support of students; and evaluation of student work typically through grading. While not always an opportunity for teaching assistants, experience in development of course materials and syllabus can also be valuable. A TA position that is primarily administrative (e.g., Sakai management, guest lecturer coordination) would not meet the goals of the requirement.

Options for Satisfying the Teaching Requirement

There are many options for satisfying the teaching requirements. Courses that often have opportunities for epidemiology PhD students are SPHG 712 (Public Health Methods and Measures), one of the courses in the MPH Integrated Core, and EPID 600 (Principles of Epidemiology for Public Health), a service course for non-majors. TAs for EPID 600 may have the option of assisting with the on-campus version or the distance-learning version. Students who have completed more advanced training may serve as TAs for EPID 700, 705, 710, 712, 715, 716, 718, or 722, or EPID 711/PUBH 760. TAs in the advanced level courses usually serve at the invitation of the primary course instructor; however, the instructors will always welcome an inquiry from students who have a strong interest in a particular course. Other options approved to date by the GSC for satisfying the teaching requirement are EPID 743, 750, 759, and 790. Courses may be added to this list at the request of the primary instructor with supporting justification that the course's TA position addresses the goals of the teaching requirement. Requests for a course to be added should be submitted by the primary instructor to the Graduate Studies Committee through the Academic Coordinator.

Doctoral students who have acquired comparable experience in the teaching of epidemiology prior to entry into the doctoral program may request an exemption from this requirement by documenting their past experience in this respect. Requests for exemptions to the teaching requirement are submitted to the Graduate Studies Committee through the Academic Coordinator. A request should carry the co-signature of the student's mentor.

International students who plan to TA should first complete GRAD 810, Communication in the American Classroom. If an international student has extensive experience in US classrooms (e.g., earned an undergraduate and/or graduate degree in the US), then they can submit a request to waive this requirement.

Doctoral Practicum Requirement

The field conduct of studies and related activities is an integral part of the life of an epidemiologist. Practical aspects of study conduct can include everything from designing questionnaires and subject recruitment to the collection of biologic samples and laboratory analysis. These activities are challenging and require a number of skills and experiences. Moreover, failure to properly conduct studies can waste precious resources and potentially invalidate study findings. Because students often conduct their dissertation research based on secondary analysis of data, this requirement will ensure that doctoral students in the Department of Epidemiology have been directly involved in at least two hands-on experiences in the practical conduct of studies.

Requirement Details

All students in the PhD program must demonstrate adequate practical experience in a minimum of two study implementation activities. *Adequate practical experience will be defined as a meaningful field experience, study conduct or implementation activity totaling approximately 80 hours for all activities*. The student's mentor (not the Academic Coordinator) will assist with the selection of eligible activities, the time and effort required, and provide the final approval. The mentor is not required to supervise the actual activities. These activities can be part of the dissertation project. Pay is neither required nor prohibited.

Options for Satisfying the Practicum Requirement*

- Development and testing of study protocols
- Staff training and certification
- Subject recruitment
- Questionnaire design and pretesting
- Interviewing
- Working with the community to implement research and community engagement
- Coding, Data management, Data organization
- Medical or other records abstraction
- Designing and implementing quality control activities
- Biospecimen collection
- Laboratory analysis
- Environmental, occupational, or personal exposure monitoring
- Collection of measurements on study participants
- Other activity as approved with mentor

*Does not include activity that is at the same time, a required part of an existing course.

Format

No exemptions based on practical experience prior to entrance into the doctoral program will be allowed; the student will have to choose an activity not performed in the past.

Checkpoints: (a) Planning and scheduling of this activity with the mentor, (b) Intradepartmental Review and proposal defense. The deadline is the final defense of the dissertation.

Report of Completion

A brief (1 page) final report is to be turned in to the mentor, along with the **Practicum Verification form** (Epidemiology Student Resources site on Sakai) for *each* activity separately. The report should summarize the activities conducted to satisfy the requirement and refer specifically back to the doctoral

competencies. Copies of both the report and the verification form are then to be submitted to the Academic Coordinator.

The Intradepartmental Review

Composition of the intradepartmental review committee is decided in consultation with the doctoral mentor and consists of three members of the epidemiology faculty. A subject matter expert can be substituted for one member with departmental approval (contact the Academic Coordinator for approval). At least one must have a primary appointment (neither adjunct nor clinical) in the Department of Epidemiology.

At least a week before the intradepartmental review the student provides each participant with the following (in no particular format):

- An updated CV
- Information on progress to date, including courses completed, research activities, etc.
- A summary or outline of the proposed dissertation project.
- IRB training certificate in the student's name
- Practicum requirement verification (if complete)
- An item-by-item description of the degree to which the student has met each of the doctoral learning competencies (as listed in Academic Policies) and those of the program area, if applicable.

A copy of the entire packet given to your IDR Committee must be provided to the Academic Coordinator.

The student must obtain the **Intradepartmental Review form** through the Epidemiology Student Resources site on Sakai. The form will be completed by the Committee Chairperson during the IDR. During the session, the student and committee plan the training needs and opportunities best suited to the doctoral research identified by the student. The student is responsible for giving a copy of the signed checklist to each member of the IDR committee and filing the original copy with the Academic Coordinator.

Additional Degree and Curriculum Information

Academic Advisor Assignment

The Academic Coordinator for the Department of Epidemiology is the academic advisor for all students during their time in the program.

Faculty Mentor Assignments

When a student is admitted to the EPID program, a faculty mentor assignment is made based on factors such as mutual interests and faculty mentoring load. Within the student and faculty population, there is great diversity in work styles. While in most instances the original assignment will prove to be a

satisfactory and fulfilling relationship, there are reasons why these first matches may not always be the best pairing to meet the needs of the student. Therefore, there may be times when the student and/or the mentor feel that the student's needs may be better served by another mentor. Change is encouraged to facilitate the best possible mentoring experience.

Changing Faculty Mentors

Once the student identifies a new faculty member who is willing to serve as their mentor, the student asks the faculty member to sign a **Mentor Assignment/Change form** (available on the Epidemiology Student Resources Sakai site) indicating that they have agreed to mentor the student. This form is then filed with the Academic Coordinator.

A student who is considering a change in mentors is encouraged to discuss the situation with their current mentor. If for any reason the student is not comfortable doing this, they should consult with the Academic Coordinator about how to proceed, depending on the specific circumstances. When a change in mentors is made, the student should notify the now-prior mentor as a matter of courtesy. However, if this proves to be a problem, the Academic Coordinator should be asked to assist.

Communication

The mentor/mentee relationship benefits from good communication. Establishing expectations of both the faculty member and the student at the outset of the mentor/mentee relationship is a major component of good communication. Listed below are some suggestions for topics for discussion between mentor and mentee, beginning at the first meeting:

1. preferred method of communication (telephone, email, walk-in, sign-up at door, schedule appointment)
2. frequency of meetings
3. responsibility for initiation of meetings
4. how the mentor will communicate which of his/her suggestions are recommendations and which are requirements
5. how much course planning should be done with the mentor (i.e., is it necessary to meet with the mentor prior to registration for courses)
6. who will be responsible for ensuring that the student has met all degree requirements
7. to what extent the mentor will assist in identifying funding opportunities
8. to what extent the mentor will assist in identifying master's paper and/or dissertation topics
9. what the mentee's expectations are in terms of faculty involvement in identifying topics and funding opportunities
10. what the mentor's expectations are in terms of professional development opportunities (i.e., manuscript review, proposal writing, data analysis, literature reviews, presentations at meetings, etc.)
11. how often the student and mentor should meet to assess the student's progress, and in what manner that assessment will be made

12. how often the student and mentor should meet to assess the appropriateness of the mentor/mentee match, and in what manner that assessment should be made

Individual Development Plan

The Graduate Studies Committee encourages faculty to work with their mentees to complete an Individual Development Plan (IDP) at the start of each academic year. An **IDP template** is available on the Epidemiology Student Resources site on Sakai. Students are encouraged to prepare a draft IDP and then meet with their mentor to discuss and refine it. Topics for inclusion on the IDP include:

- perceived strengths and weaknesses
- progress made in the previous academic year (i.e., courses, presentations, degree milestones)
- plans for the upcoming academic year
- remediation plan (in cases of Qualifying Exam failure)
- progress toward thesis
- steps taken toward post-graduation career plans (e.g., CV preparation, networking, job search)

Process Evaluation

It is recommended that the mentor and mentee regularly assess the mentoring relationship to evaluate the appropriateness of the match and to identify areas where improvement can be achieved. Students and mentors are encouraged to discuss openly the concerns of either party and to try to negotiate solutions to any problems.

Course Registration

A complete list of courses, along with course descriptions and current syllabi, is available on the Courses webpage of the department's website.

Independent Study, Independent Research, and Lab Practice

Independent study, independent research, and field training are options available to the mentor and the trainee to introduce individualized and flexible learning opportunities into a student's training path. The distinctive features that define each of these are listed below:

Readings in Epidemiology (EPID 886) is a course organized between faculty and one student (or fewer than five students) with defined learning objectives, an evaluation, and credit hours to meet a student's training objectives outside/beyond the established courses and seminars. This independent study activity can include review of the substantive and/or methodologic knowledge base in a particular area, and/or their application. This course is not intended to support research hours. Students who wish to register for this course must also complete an **Independent Study Learning Agreement** (available on the Epidemiology Student Resources site on Sakai).

Independent Research (EPID 910) provides a mechanism for training opportunities based on active participation in research with faculty. It is based on defined learning objectives for this activity, their evaluation, and a pre-established number of credit hours. The student's time is allocated primarily to an active role in research activities as part of a research team, as opposed to a review of the scientific background and/or knowledge base pertinent to the research.

Independent research is a training activity for academic credit. Remuneration as a research assistant for the student's participation in a research project related to this learning activity is an option, to the degree that the objectives and responsibilities for the independent research and the research assistant activity are specified and do not overlap. Both the learning activity and its objectives, as well as the funding implications, must be discussed explicitly at the outset of this activity and established in writing.

Epidemiology Practice (EPID 900) provides credit for the required Master's practicum experience. The Master's practicum provides students with the opportunity to apply their academic training to experientially address master's competencies in the context of public health practice. All students will register under the faculty practicum coordinator.

Epidemiology Lab Practice (EPID 905L) is any learning activity conducted off-campus, designed to support the student's training goals. Such activities are either formal training activities listed on the curriculum or designed specifically for the student with approval by the mentor, specifying learning objectives, number of credit hours, an evaluation, and the student's responsibilities.

A student's participation in independent study, independent research, or lab practice requires approval by the supervising faculty.

Exemption from Required Courses

Exemption from any course requirement is on the basis of equivalent work. A student seeking exemption from, or substitution for, a School of Public Health core requirement must submit for approval the School of Public Health's Core Course Exemption/Substitution Application Form (http://sph.unc.edu/students/academic-and-policies/). To be exempted from a departmental requirement, the student submits a departmental exemption request form to the Academic Coordinator. The petition should describe clearly the equivalent coursework and/or experience. This form is available on the Epidemiology Student Resources site on Sakai.

Exemptions may be granted for introductory substantive courses on an individual basis. We expect both the course instructor and Program Area Leader to consider such requests carefully to ensure that the student is well prepared should s/he elect to take the Substantive QE in that area. We expect our students to meet the substantive epidemiology course requirements by choosing topical areas, and course levels within a program area, that complement the knowledge base that they bring to the program.

Departmental Grading Policies

Policy on "L" Grades

A grade of P is the lowest acceptable grade in core methods courses (EPID 705, EPID 710, EPID 712, EPID 715, EPID 716, EPID 718, EPID 722, and EPID 726). A grade of L in one of these courses requires re-taking the course if the student is to continue in the program.

Diagnostics

It is each student's responsibility to assess his/her performance in courses and the need for remedial action. For this, students are encouraged to seek help from the Academic Coordinator, their mentor, course instructors or others, as needed. In addition, a grade of L in an Epidemiology core methods course requires that a meeting among the student, the mentor, the course instructor, and the Academic Coordinator take place within two weeks. The purpose of the meeting is to ascertain the factors associated with the poor performance and to implement the steps described below. The Academic Coordinator will notify the student's mentor of the L grade. The Academic Coordinator is responsible for initiating this meeting at the earliest convenience of all involved. A grade of L often reflects the need for an adjustment in workload, study habits, or other activities rather than a lack of aptitude. Many students go on from L grades in core courses to have great success in the remainder of their academic program and future careers.

Implementation

Students who receive a grade of L in a core methods course must re-take the course and receive a minimum grade of P, unless exempted below. The student is expected to retake the course – or to be granted an exemption by the Graduate Studies Committee (GSC) – within one year of taking the core methods course that resulted in an L grade. If this timeline is not met the student must ask the Academic Coordinator to present an alternative timeline to the GSC.

Conditional advancement to a higher-level course for a student who receives a grade of L in a core methods course

Students who receive a grade of L in a core methods course may advance to the pertinent higher-level methods course in epidemiology (prior to re-taking the course in which they received an L) only if approved by the instructor of the higher-level course and endorsed by the student's mentor and the Academic Coordinator. These exceptions will be rare.

Exemption from the requirement to re-take a core methods course

For EPID 705, 710, 712, 715, 716, and 718, a high performance in the higher-level course (above the 85th percentile) allows the student to submit a request to the GSC to be exempted from having to re-take the lower-level course graded as 'low pass' (L).

Progress Assessment

The purpose of tracking student progress is the early identification of possible problems so that they may be remediated in a timely fashion. It is expected that the student will take ownership of their education by seeking assistance if any of the criteria identified below exist. A student interested in receiving assistance should contact the Academic Coordinator. With the student's input, they will identify a mentoring committee (including at least one GSC member) to assist in resolving stumbling blocks to success in the program. This committee may or may or may not include the mentor, depending on the student's preferences.

Helping students resolve conceptual misunderstandings, improve methodologic skills, prioritize their responsibilities, and address obstacles to their progress early in their training improves long-term success in the program and in the student's career. Remediation activities would consist of completing a plan to address weaknesses and/or other identified obstacles. The plan would be developed by the student in conjunction with members of the Graduate Studies Committee, the Academic Coordinator and mentor. This arrangement may include tutoring, re-taking or auditing a core methods course (or portions of it), a project designed to augment specific skills, or other agreed-upon activities. For students further along, remediation may consist of re-prioritization of responsibilities or other agreed-upon steps to ensure milestones (e.g., IDR) are met.

Indicators that a progress assessment meeting is advisable:

- When a student receives 6 or more credits of "L".
- When a student fails his/her first qualifying examination, methods or substantive (or master's comprehensive exam, if relevant).
- When a student fails his/her doctoral proposal defense.
- PhD students in their 4th academic year without having completed their IDR.

The list above is not exhaustive. At any time, a faculty member may identify students thought to be in jeopardy and ask GSC to convene a meeting. However, the faculty member should first set up a meeting with the student to discuss their concerns.

Although this process may create some anxiety among students, it is important to remember that the intention is be a proactive step to ensure that all students will succeed in the program. It is not intended to label students as weak or inferior in any way. There are many factors (personal and financial, as well as academic) that contribute to slower progress and/or subpar performance. The role of the Graduate Studies Committee is to assist students in successfully negotiating our challenging program.

Statistical Computing and Data Management

Competence in statistical computing and data management is a requirement of the program. Statistical computing using SAS is a component of several of the methods courses, and is required for one's own research, as well as for many research assistantships. Various training resources are available for students without prior experience. Some of these are:

1. EPID 700: SAS and Data Management (3 credits)
2. BIOS 511: Introduction to Statistical Computing and Data Management (4 credits)

3. Non-credit short courses offered by the UNC Odum Institute for Research in Social Sciences (https://odum.unc.edu/education/short-courses/)

A SAS exemption exam is offered over the summer for those students not enrolling in EPID 700 or BIOS 511.

EPID 701 (R for Epidemiologists) is another statistical computing course offered by the department. While this course is an additional resource and students are encouraged to take it, completion of this course does not fulfill the SAS competency requirement.

Adequacy in statistical computing is assessed as part of the intradepartmental review discussion for doctoral students.

Human Subjects Review

All students – without exception - must complete training in the protection of human research subjects. The website for this training is https://research.unc.edu/human-research-ethics/getting-started/training/. Students should select training in either Group 1 or 2. **Group 3 does not suffice.**

Students may obtain a copy of their CITI training verification online at https://acap.research.unc.edu/research_training/?event=administration.certificates.pgCertSelectTraining

The "Responsible Conduct of Research" course offered by the N.C. Translational and Clinical Research Sciences (TraCS) Institute during the summer can be taken in lieu of the CITI training. This course is typically announced via email by the TraCS program.

Examinations and Dissertation

Preliminary Doctoral Written Examination: The Doctoral Qualifying Exam

Preliminary Doctoral Examinations in the Department of Epidemiology are designed in accordance with Graduate School requirements for a written and an oral examination, together constituting a comprehensive examination of the student's command of his or her field. The student must be registered at the time the preliminary examinations are taken. The examinations are covered by the Honor Code.

Purpose

The written examination is the Doctoral Qualifying Examination. It is a diagnostic tool designed to indicate to the Department whether the student has the substantive knowledge and the methodologic skills to engage in doctoral research and proceed in the doctoral program. The purpose of the examination is to yield diagnostic information on the student's command of several skills and competencies considered necessary for doctoral research.

Content and Structure of the Qualifying Examination

The Doctoral Qualifying Examination is administered in two independently graded portions. The methods component is a standardized test of proficiencies in applying epidemiologic methods at the level of EPID 715/716/718/722. The substantive component consists of topical questions related to the program area declared by the student, prepared (and graded) by a committee established by the program area leader. The two components of the Qualifying Examination are taken independently, but students need to pass both parts prior to the preliminary oral examination. An outline of each part of the Doctoral Qualifying Examination follows.

The **methods component** of the Doctoral Qualifying Examination consists of written responses to questions designed to test the student's ability to apply the concepts and methods covered in the required epidemiology and biostatistics courses. It is administered as an in-class examination, and questions may call for short essay answers; computations and set up of computations; interpretation of software output; construction, analysis and interpretation of results in tabular form; and analysis of data provided.

The **substantive component** of the Doctoral Qualifying Examination consists of written responses to questions designed to assess the student's command of the topical/programmatic area declared for the intended doctoral research. It is administered as an in-class, closed book examination. Program areas are those defined by the Department of Epidemiology as providing training in a substantive/topical area. The objectives of the substantive portion of the examination are to ascertain:

- the degree of sophistication of the student's knowledge base in the study area,
- his/her awareness of a salient area of research, reflecting familiarity with the current literature,
- the student's ability to apply epidemiologic methods to a topical issue in the study area, and
- the student's ability to identify and discuss the public health implications of a topical issue in the area selected for the proposed doctoral research.

Expected Competencies

To achieve a "pass" level on the Doctoral Qualifying Examination students must demonstrate (a) mastery of and the ability to apply the epidemiologic concepts and methods covered by the core methods curriculum, and (b) a command of the knowledge base, topical issues, and public health applications in the substantive area selected for the proposed doctoral research.

Planning

In the course of a student's Intradepartmental Review (IDR) a timeline is identified for the optimal time to take each part of the Doctoral Qualifying Examination, if not already taken.

Students prepare for the **methods component** of the examination by reviewing the pertinent course materials and publications cited in the course materials and textbooks. At the discretion of the examining committee, additional guidelines *may* be provided prior to the exam. A set of representative

questions are available for review and are posted on the Epidemiology Student Resources site on Sakai. These, along with older exams posted on the site, can serve as good practice opportunities.

To assist students in preparing for the **substantive component** of the Doctoral Qualifying Examination program areas are responsible for providing a "study guide" for students, to include the learning objectives of the program area and recommended readings for developing the minimally necessary expertise in the area (not selected solely for the purpose of addressing specific exam questions).

Previous guidelines and past examinations for substantive component are posted online on the Epidemiology Student Resources site on Sakai.

Timing

Given the qualifying nature of this examination, the Doctoral Qualifying Examination should be taken before work on doctoral research is begun. Both the Methods and Substantive components must be completed satisfactorily for a student to continue in the doctoral program.

The methods component of the qualifying exam is offered at the end of each spring semester. **It should be taken after completion of EPID 722.** The student is required to consult with the mentor before registering for the methods component of the doctoral qualifying examination, to confirm the student's readiness to take the examination at that time.

The substantive component of the Doctoral Qualifying Examination is offered early during the fall semester. Special interest area examinations (i.e., genetic, physical activity, etc.) are also scheduled at that time. The Academic Coordinator will email an announcement to the listserv when registration is open.

The program area director will make study guidelines available no later than three months prior to the date of the examination.

The substantive component of the Qualifying Examination should be taken after a student has selected a topical/programmatic area for the doctoral research and has completed the relevant courses defined in the learning objectives of each program area (typically fifth semester), but it can be taken before the methods component. The student's mentor should be actively engaged in the student's decision about when to take the substantive component. However, no documentation of completed requisites is needed for a student to register for the substantive component of the Doctoral Qualifying Examination.

Administration

The **methods component** of the Doctoral Qualifying Examination is prepared by the Doctoral Qualifying Examination Committee of the Graduate Studies Committee, drawing on other faculty as needed. For each examination, a faculty committee is established, with responsibility for developing, testing, and grading the examination. The committee includes at least one member of the GSC.

For the **substantive component** of the Doctoral Qualifying Examination the program area director forms a committee of faculty members, at least one of whom will have a primary appointment in the

Department of Epidemiology. Inclusion of adjunct faculty of the Department is permissible and desirable. The program area director is responsible for providing study guidelines in advance.

To be examined in areas that are not established program areas, the student must file a request through the Academic Coordinator justifying the need for a "special interest" examination. (With the exception of the oral epidemiology program, such requests are rarely approved.) If approved by the Graduate Studies Committee, the student's mentor will form an *ad hoc* examining committee. At least one of these must have a primary appointment in the Department of Epidemiology. *The mentor plays an important role in selecting the questions but does not take part in grading.* However, to aid in standardization of the examination across program areas, special interest area questions require prior approval of the Graduate Studies Committee.

This *ad hoc* committee does not constitute a dissertation committee - since approval of both parts of the Qualifying Examination is a requisite for setting up a doctoral committee - but it can serve as the core around which the dissertation committee is subsequently established. The *ad hoc* committee is responsible for grading its questions and for providing diagnostic feedback to the student. The latter is channeled through the Doctoral Qualifying Examination committee of the Graduate Studies Committee and the Academic Coordinator.

Format

The methods component is an in-class exam, designed to be completed within a four-hour time period. However, a total of six hours will be allowed. Students must bring a pocket calculator or laptop (for using a spreadsheet application ONLY) and may bring the following written material: Rothman KJ, Greenland S. Lash TL. Modern Epidemiology. Philadelphia: Lippincott Williams & Wilkins. Annotations from coursework are allowable, but annotations for the purpose of the exam are not. The exam will be 20-25 questions, some of which may be clustered in multi-part questions based on a table, figure, abstract, or scenario. All items are to be answered, and their point values will sum to 100.

The substantive component of the Doctoral Qualifying Examination is administered as an in-class, closed book examination. Page limits are defined for each question, and the full examination is designed to be answered in three to five hours. The time limit for this part of the Doctoral Qualifying Examination is six hours. Two pages of notes (personally prepared, one piece of paper, two sides) of the student's choice, a foreign language dictionary, and a calculator are allowed. The student will be given at least three questions to answer. The examining committee may: (1) ask the student to choose two; (2) require the student to answer three and the best two grades will be submitted; or (3) specify for the student one question to answer and allow the student to choose which one of the remaining questions to answer.

Submission of an exam is final. Students should review their exams carefully prior to submission to the Academic Coordinator. **For either component, a student may terminate the exam prior to submission with no penalty.**

Copies of past qualifying exams are available on the Epidemiology Student Resource site on Sakai.

Grading

An overall grade of Pass on the Doctoral Qualifying Examination requires a Pass on both the Methods component and the Substantive component.

The Methods component will be assigned a score from 0-100% by the examining committee. Examination answers are graded by a member of the examining committee without knowledge of the student's identity. In cases where there is some question about the appropriate grade for an answer, the primary grader consults with another faculty member. The overall score is the sum of the points awarded for the answers to each of the approximately 20-25 questions on the examination, divided by the total points available. The examining committee may add an upward adjustment if deemed appropriate to shift the score distribution. A Pass on the Methods component requires a score of 70%.

For the Substantive component, each of the two questions chosen is typically graded by one member of the examining committee, if possible, without knowledge of the student's identity. In cases where there is some question about the appropriate grade for an answer, the primary grader consults with another faculty member. A Pass on the Substantive component requires a Pass on each of the two questions answered by the student.

Report of Outcome

Within 3 weeks of the examination (either part), notification of the outcome is communicated to the student by the Doctoral Qualifying Examination Committee of the Graduate Studies Committee.

A student who fails either component of the examination is required to consult with her/his mentor and the Academic Coordinator and conduct an in-depth review of diagnostic information related to his/her performance and any additional feedback or advice from the Doctoral Qualifying Examination Committee. Following this review, the student submits a brief report to the Graduate Studies Committee, with a copy to the mentor and the Academic Coordinator, assessing the reasons for the sub-standard performance and outlining an itemized plan for remedial action, which should include an Individual Development Plan (IDP). This analysis and plan are due to the Academic Coordinator within one month of the report of the examination outcome unless a longer time is agreed to by the Chair of the Graduate Studies Committee. A reply from the Graduate Studies Committee will ordinarily be provided following the next scheduled GSC meeting after receiving the student's plan. Unless a different timing is recommended by the Graduate Studies Committee, the student must obtain a grade of Pass the next time that component of the Doctoral Qualifying Examination is offered in order to remain in the doctoral program.

Appeal of Failure

An appeal of a failing report is considered by the Graduate Studies Committee.

An appeal must be submitted to the Academic Coordinator within 3 weeks of receiving the official notice of the examination grade. Appeals must be in the form of a written justification and should be presented in such a way that the appeal can be considered without revealing the identity of the student

involved. The appeal should be self-contained (other than references to standard textbooks or examination materials).

Students are expected to decide on their own whether to appeal an examination outcome. The examination can be discussed with the mentor or other faculty members. Appeals are regarded as part of the examination, and therefore subject to the Honor Code. The appeal must be the student's own work and be accompanied by a signed pledge. To preserve anonymity, the pledge will be separated from the appeal itself and retained by the Academic Coordinator.

The GSC will select an Appeal Committee to serve on an ad hoc basis. The student may suggest that the GSC consult with a particular faculty member; however, the GSC is not required to do so.

The Appeals Committee will review the appeal materials without knowledge of the student's identity. *To preserve anonymity, all communication between the student and the Committee will take place through the Academic Coordinator until the appeal has been decided.* The Appeal Committee will bring the results of its review to the next scheduled GSC meeting for discussion. In reaching its decision the Committee will award full credit to answers that are judged to be equally as good as those originally proposed.

The GSC will review the appeal results and reach a final decision. The GSC decision is final with respect to the substantive issues. The final GSC decision will be communicated to the student within 6 weeks of submission of the appeal. The student may appeal to the Department Chair only on grounds of alleged irregularities in procedure.

The Dissertation Committee

The Dissertation Committee is established after both components of the doctoral qualifying exam have been passed. The Dissertation Committee is composed of five or more members, a majority of whom must be “regular” members of the University of North Carolina Graduate School Faculty from the Department of Epidemiology. All tenured and tenure track faculty at the ranks of assistant, associate and full professor are automatically “regular” members of the Graduate Faculty (this includes tenure track faculty School of Medicine, School of Pharmacy, other SPH Departments, etc.). Per Graduate School guidelines, "other persons may be appointed to the Graduate Faculty for “fixed” term membership; these appointees may include: faculty emeriti, clinical or research professors, scholars from other institutions, independent scholars, and practitioners." Confirmation of any individual's status can be obtained online at gradschool.unc.edu/policies/faculty-staff/faculty/.

At least three committee members must be “regular” faculty of the Department of Epidemiology. Research track faculty, adjunct faculty, and committee members from outside the UNC-CH system will need to email to epidemiology@unc.edu an electronic copy of their current CV so that they can be nominated for a fixed-term appointment with the Graduate School for the purpose of serving on committees. Be sure to confirm status online as noted above as there are research track faculty in Epidemiology who have special approval as “regular.”

Committee members from outside the UNC-CH system DO NOT have to be given adjunct appointments to serve on a student’s committee. The role of the Committee Chairperson is to follow

the student's progress throughout the dissertation process and to ensure that all departmental policies and expectations are adhered to. For this reason, the Committee Chairperson must be someone whose primary appointment is in the Department of Epidemiology**.** Graduate School policy requires that the Committee Chairperson be a "regular" member of the Graduate Faculty.

The Committee should also include a biostatistician or someone who can function in that capacity. Inclusion of members from outside the department is encouraged when their point of view is warranted by the research question. Such members may be drawn from any of the disciplines bearing on the study of the distribution and determinants of human health and disease. A student who is minoring in another program must have a faculty member from that program on his/her committee.

Dissertation committees should be comprised of the people best suited to serve the student on project needs. If necessary, exceptions to policy can be made. The student, in conjunction with the committee chair, must submit a written justification to the Academic Coordinator. The Department will petition the Graduate School for an exception. Please consult with the Academic Coordinator for a sample petition.

Committee members are proposed by the student and approved by the dissertation mentor using the **Request for Doctoral Dissertation Committee Approval form** (available on the Epidemiology Student Resources site on Sakai). The student submits this form to the Academic Coordinator for departmental approval. The Academic Coordinator then completes and submits the Graduate School's "Report of Doctoral Committee Composition" form. The Committee composition must be constituted and submitted for approval at least 2 weeks prior to the Preliminary Oral Examination.

The Preliminary Oral Examination

Off-site doctoral work is acceptable ONLY after a successful defense of the doctoral proposal, inclusive of an off-site work plan and a timeline approved by the doctoral committee. (See full policy under "Summary of Degree Requirements/Schedules/ Timelines for the PhD.")

The Preliminary Oral Examination is the second of the preliminary doctoral examinations. It is held after the Qualifying Examination has been passed, at a time when the student's dissertation committee determines that the dissertation proposal has reached a suitable stage, and in accord with Graduate School regulations. The Graduate School policy requires that by the time of the second preliminary examination the student must have fulfilled all required coursework and the minimum residence requirements for the doctorate or will fulfill these by the end of the semester in which the examination is taken. **A student must be registered for 3 credits of EPID 994 at the time of the preliminary oral examination.**

The purpose of the preliminary oral examination is to review a structured proposal of the student's doctoral research that includes its objectives, hypotheses, and work plan, submitted for formal approval by the doctoral dissertation committee. **The content and format of the dissertation proposal is defined by the student and the doctoral mentor/doctoral committee chair** at an early stage of this process. At a minimum, the doctoral research proposal includes a comprehensive statement of the background and critical assessment of the literature, a statement of objectives and their rationale, the study hypothesis(es) and design, and a proposal plan of analysis. Formal approval of the dissertation proposal

and pertinent supporting materials by the doctoral committee takes place during the oral examination. Sample proposals are available online on the Epidemiology Student Resources site on Sakai.

The preliminary doctoral examination includes a presentation by the student of the proposed doctoral research. Discussion of the proposal during the preliminary doctoral examination is not constrained by the contents of the proposal. Members of the doctoral committee are free to pose questions on any substantive or methodologic subject related to the proposed doctoral work, a minor program, or aspects of another program or curriculum which is transferred into the candidate's doctoral program.

Also, during this examination the committee should review and discuss manuscript authorship issues with the student.

The student should submit a draft of the proposal to each committee member well in advance of the date planned for the examination (a minimum of 4 weeks ahead of the examination date), to allow time for review and comment. The committee must approve the proposal before the student may proceed with the doctoral research. After the approval of the proposed research, the "Report of Approval of Dissertation Project" and the "Report of Oral Examination" are signed by committee members. These forms are obtained from the Student Services Office and should be returned after the examination. **Do not print these forms from the Graduate School website. They are multi-use forms that have already been filled out and printed by the Student Services Office.**

Following the oral examination, the student must submit a tentative schedule for completion of the dissertation to each committee member.

Significant weaknesses in the dissertation proposal or in the level of preparation of the candidate may result in a failed examination, which can be repeated as defined in the Graduate School Handbook.

Admission to Candidacy

Admission to candidacy for the doctorate is a certification that the student has completed all requirements for the degree except for the dissertation and/or defense

The student must have completed all course work required by the program and the dissertation committee, completed all minor program requirements if a minor has been declared, passed both components of the doctoral written examination and the dissertation proposal defense (counts as oral examination).

The Doctoral Dissertation

The purpose of this capstone experience is to provide students an opportunity to synthesize, integrate and apply knowledge and skills learned in coursework and other learning experiences and require students to demonstrate attainment of program competencies. According to Graduate School policy, the doctoral dissertation "is expected to be of such scope, independence, and skillful presentation as to indicate that the candidate has acquired a command of the subject, has the demonstrated ability to

contribute fresh knowledge or a fresh outlook to the subject, and has mastered the research methodology of the discipline."

The student is expected to consult with members of the dissertation committee at frequent intervals throughout the progress of the research and is **required under Graduate School policy to submit a progress report to each member of the committee at least once a year.** More frequent reporting is desirable and may be specified by an individual committee.

The Graduate School requirements for dissertation format are specified in the publication, The Graduate School Thesis and Dissertation Guide. Formatting is challenging. Start your formatting when you start your writing! A video with UNC dissertation formatting instructions can be found here: https://m.youtube.com/watch?v=YVLDnWWOEV0

Human Subjects Review

All proposed doctoral research must be submitted to the School of Public Health Institutional Review Board (IRB) as soon as the project has been approved by the doctoral committee. This applies to all proposals, whether sponsored or not sponsored. While practice in the context of training is not subject to review by IRB, generalizable research conducted by students and/or faculty is subject to a determination whether review by the IRB is required. This determination is the purview of the IRB. Since the dissertation is a research activity that takes place under the leadership of the student with support from a mentor, safeguarding the ethical conduct of this research activity is a responsibility shared by the student.

Guidance for any IRB action required for student research can be found here ohre.unc.edu and guidance for any IRB action required for student research is also in the "*IRB Guidance for Student Research and Class Projects*" document found on their IRB Guidance Information web page. Registration of dissertation proposals follows the rules for IRB action presented on the website referred to above. The student is listed as the lead investigator for the research activity and a faculty mentor is identified who holds ultimate responsibility for ensuring that this project complies with all University, regulatory, and fiscal requirements.

Depending on the data and research environment of the dissertation project it may be possible or desirable for student research to be subsumed under an existing IRB approval extended to the lead investigator of a "parent study" that supports a student's research. The decision about what is reasonable and whether the student's proposed research meets this Institution's guidelines for ethical conduct of research involving human subjects is made by the IRB. Students should consult with their mentors in preparing IRB applications.

Upon receipt of IRB approval, the student must complete the Verification of Compliance with Institutional Review Board Requirements form (available on the Epidemiology Student Resources site on Sakai). **A copy of the IRB committee's decision must be attached to the form.**

See website at ohre.unc.edu for information and online submission of applications.

Data Use Agreements

If using data that is not publicly available, the IRB Committee requires a data use agreement. This form is available on the Epidemiology Student Resources site on Sakai. This form should be submitted to the study's Principal Investigator.

Standards and Expectations for Doctoral Research in the Department of Epidemiology

The research question for a dissertation in Epidemiology can be substantive, methodologic, or theoretical. In any case, it should have a demonstrable potential for advancing the state of knowledge or practice. Standards for an adequate doctoral dissertation are expressed by expectations for a high level of achievement in the following areas:

1. **Originality** is expected in doctoral research. It may be achieved through innovation in theory, methods or substantive content, or by creative application of existing theory or knowledge to a new problem. Research that replicates findings of others without this kind of innovation, while often a worthwhile contribution, is not sufficiently original to satisfy the expectations for the dissertation.

2. **Depth** in the definition and treatment of the research topic is a requirement for doctoral-level research. It implies both technical competence and intellectual sophistication. Depth is to be gauged by the doctoral committee against standards of work publishable in peer-reviewed communications.

3. **Scholarship**. The dissertation should be competent in scholarship, as well as in scientific technique. The problem should be introduced, the study justified, and the results discussed in such a way as to place the work in its academic context. That is, the dissertation should demonstrate familiarity with the work of others, awareness of important developments and controversies, and an ability to critically synthesize and convey such knowledge.

4. **Writing Skills**. Competence in scientific writing is among the evaluation criteria for the doctoral dissertation.

Publication Requirement

The program leading to the Doctor of Philosophy in the Department of Epidemiology is research oriented, and the candidate's doctoral research is expected to make a scientifically meaningful contribution to methodology and/or substantive knowledge. Peer review in assessing whether these standards have been met is the responsibility of the doctoral committee, acting in the capacity of an internal review body.

Peer reviewed communication of research findings is both a yardstick by which the merit of scientific work is measured, and a mandate for scientists in the field of public health. The acquisition of the skills that will enable a scientist to implement these expectations should be an integral part of the doctoral training in epidemiology.

A mentored application of new skills is the preferred and most effective mode of learning and is applied to as many components of the doctoral training in the department of Epidemiology as is feasible. The publication of research findings and encountering external peer review should be first experienced in the didactic and supportive environment of a training program. Postponing these experiences until after graduation can be a significant hurdle to career development.

Implementation

As part of the doctoral research proposal approved by the doctoral committee, a minimum of two manuscripts intended for publication must be proposed. The choice of topics and an outline of the scope of the manuscripts are prepared with input from the doctoral mentor and are approved by the doctoral committee.

The doctoral committee, or the doctoral mentor and at least one member of the doctoral committee, serve as an internal peer review group for the final drafts of these manuscripts.

Completion of the doctoral program requires that one manuscript be submitted to an external peer review mechanism approved by the doctoral mentor. Unless an exception is requested by the doctoral mentor, the default external peer review mechanisms are a scientific journal, or a publication/scientific peer review group established by a parent study that has sponsored the doctoral research. Verification of submission is required prior to the final defense by completing the **Verification of Submission of Dissertation Manuscripts form** on the Epidemiology Student Resources site on Sakai. Review of the manuscript by a co-author who is not a member of the doctoral committee does not substitute for external peer review.

Neither completion of peer review by a journal nor acceptance for publication is required prior to scheduling the doctoral defense. Timely submission of manuscripts resulting from the doctoral research process is encouraged, to give the candidate an opportunity to receive external peer review comments and to experience the interaction with external peers and journal editors. Rejection of a manuscript by a journal (or equivalent external peer-review process) does not preclude a successful completion of the doctoral program. Conflicts that may emerge between recommendations from external peer reviewers and the doctoral committee are resolved by the doctoral committee, according to the academic requirements of the doctoral program. The doctoral committee is the only, and final, arbiter of the acceptability of the doctoral dissertation.

If doctoral research is proposed that does not lend itself to publication according to the process outlined above, an alternative pathway to publication needs to be approved at the time of the Preliminary Oral Doctoral Examination, to provide an equivalent learning opportunity to this student. If in the opinion of the doctoral committee the analytic results of the doctoral research do not merit publication, this committee develops an alternative to meet the expectations of the doctoral program and to make available to the student the experience of the publication process.

Authorship Expectations from Doctoral Research

The doctoral candidate is expected to assume the role of lead investigator for his/her doctoral research, exercising these responsibilities and decision-making prerogatives with guidance from the dissertation committee Chair. Consistent with this role, the doctoral student is expected to serve as lead author on publications that originate from doctoral research, unless an alternative is stipulated at the time of the doctoral dissertation proposal defense as required by access to data or resources. Under these circumstances, the student's record should indicate in writing his/her agreement with the data use specifications as well as the mentor's endorsement. Service on the doctoral committee does not confer authorship to faculty; contributions to a publication that deserve authorship recognition should be measured individually. Authorship recommendations from the scientific editors of the major health sciences journals serve as the guidelines for this process, as summarized in JAMA 1993; 269:2282-2286 and the instructions to authors provided by the major journals.

Assuming lead authorship responsibility and its roles is part of the career development competencies acquired as part of the doctoral training. The doctoral mentor is responsible for assisting the candidate in negotiating authorship issues, particularly in the case of multi-site collaborations, and for studies that have established publication and authorship policies. Guidelines to assist in this process are found in JAMA 1997; 278:579-85, and others.

If the doctoral research is conducted in collaboration with another institution, scientist(s) or agency supplying the data, negotiations should take place early in the planning of the doctoral research and no later than at the time of the defense of the doctoral dissertation proposal. Expectations of authorship for all publications resulting from the doctoral work should be made explicit as part of such negotiations. Such negotiations should include the student, the doctoral mentor, and the collaborating scientist(s). A written confirmation or understanding of the agreement should follow these negotiations.

It is recommended (not required) that the doctoral mentor and at least one member of the doctoral committee be willing to assume co-author roles on each of the two manuscripts, to guarantee full involvement and timely critical input.

Format of the Dissertation

The traditional dissertation format is a single document with no page limit. Despite its greater length, less careful and time-consuming editing is typically required than for journal publication. However, it has the disadvantages of being time-consuming to read and difficult to reduce to publishable proportions. In the preferred format, often referred to as a "manuscript dissertation," the results chapters are prepared as manuscripts ready to be submitted for external peer review. This collection of related manuscripts is preceded by two or three chapters that present a unified review of the literature, the study questions, their rationale, the corresponding hypotheses, and the general methods common to the results chapters/manuscripts. Although each manuscript has its own discussion section, a common discussion is included as the last chapter of this type of dissertation. This format is attractive in many ways and is encouraged. Although more demanding in the writing stage, the use of this format will result in a shorter, more readable dissertation, and more importantly, it leads more quickly to its submission for publication.

The "manuscript dissertation" is strongly recommended by the Department and is used almost without exception. A minimum of two manuscripts must be prepared by the student, in collaboration with members of the doctoral committee in supporting roles. These manuscripts must be of a quality sufficient to have the potential to be published in a first rate, peer-reviewed journal. *Even if a monograph style is chosen as the format for the dissertation, a minimum of two manuscripts must be prepared by the student, one of which needs to be submitted for external review prior to the defense.* Exceptions to the format should be specifically applied for (to the mentor).

While the actual manuscripts are formatted as stand-alone documents ready to be submitted for external peer review, for the dissertation they must be integrated into a coherent document that meaningfully links these manuscripts to the aims of the doctoral research. Thus, the complete doctoral dissertation document includes the following elements (all but an introduction are required).

1. Abstract
2. Introduction
3. Critical review of the literature
4. Specific aims or statement of the study questions, and their rationale
5. Hypotheses to be tested
6. Study design, population, measurements/instruments, and quality assurance
7. Analytic approach
8. Results (manuscripts)
9. Overall discussion and interpretation of findings (with reference to overall aims of the doctoral research)

For details on table of contents, pagination, typeface, etc., consult The Graduate School Thesis and Dissertation Guide.

Data Source

The source of data or study material for dissertation research is determined by the study question. Primary data collection and secondary analysis of existing data may be acceptable, as determined in collaboration with the mentor.

Breadth

Innovation rather than breadth is a requirement for the dissertation research question. The dissertation may be narrowly focused on a specific problem, if it has the potential to advance the state of the science in a substantive, methodologic, or public health area. However, consideration of the wider implications of the research question and results in the Introduction and Discussion portions of the dissertation is expected.

Timeline and Interaction with the Doctoral Committee

1. The doctoral committee convenes with the student on at least three occasions. These meetings are required, formal milestones in the student's doctoral research and preparation of a doctoral dissertation. They are

   i. Preliminary oral examination (defense of the doctoral research proposal).

   ii. One or more interim meetings.

   At least one interim meeting of the committee is held approximately six months prior to final defense (a minimum of four months prior to final defense) to review progress and to provide input from the full committee for the remaining stages of the doctoral research and publication process leading to the final defense. The interim meeting includes a presentation by the candidate to the committee. A majority of the committee must convene on the UNC campus; off-site members of the committee may participate via a mutually agreeable conferencing medium. Exemptions from the requirement to hold an interim meeting of the doctoral committee due to exceptional circumstances require approval by Graduate Studies Committee.

   The purpose of the interim meeting is to provide an opportunity for the student to obtain direct consultation with the entire committee prior to completion of the doctoral research process and the dissertation. Issues to be addressed in the interim meeting include reaching consensus on the scope, completeness, and timeline of the dissertation, clarifying outstanding issues of analysis and interpretation, and to set up a dissertation close-out schedule. At that time, the Chair of the doctoral committee also asks each committee member to identify any concerns regarding the status of the doctoral research. Following this meeting a brief summary of the decisions and recommendations is distributed by the student and the committee chair to the full committee and a **Documentation of Interim Doctoral Committee Meeting and Dissertation Close-out Schedule** (available on the Epidemiology Student Resources site on Sakai) is submitted by student to the Academic Coordinator.

   iii. Final doctoral defense.

   A final defense may not be scheduled without a prior interim meeting of the committee. ***In addition, the announcement of the final defense may not be made without prior permission of the Academic Coordinator. This is to ensure that all administrative tasks have been satisfied prior to the defense.***

2. Notification of final defense.

The dissertation close-out schedule, signed by the mentor and the student, constitutes the notification of final defense, and is filed with the Academic Coordinator.

The student submits the final dissertation document to the committee one to two months prior to the final defense. **Failure to meet this timeline may result in the need to reschedule the doctoral defense**. The student contacts each member of the committee at that point to establish a schedule that allows (a) time for each committee member to read the dissertation, (b) time for the student to meet with each

committee member if needed, and (c) an opportunity for the student and mentor to rehearse the defense presentation.

3. Responsibilities of the Committee Members

The student must provide adjuncts or committee members from other departments with a copy of the departmental policies (available online at https://sph.unc.edu/students/gillings-school-student-handbook/). At the preliminary oral examination, the committee Chair will review the process described above, the roles and expectations, and the timeline. The student is then authorized to proceed with the proposed doctoral research.

Submission of Doctoral Dissertation

The policy adopted by the Epidemiology faculty for submission of the dissertation follows:

The written dissertation document must be in final form prior to the final defense. This implies that all pages, references, and appendices are in place and that a thoughtful discussion has been completed. The dissertation will have been thoroughly proofread and editorial problems corrected. It is expected that following the defense, substantive changes in the written document will be minimal. Any subsequent retyping should at most involve a few pages. This being the expectation of the student, the implication is that each committee member will have reviewed thoroughly the entire finalized document well in advance of the defense.

REMINDER: Do not use forms from Graduate School for report of defense. These pre-filled forms need to be picked up from the Academic Coordinator before the final defense.

Application for Graduation

To be eligible for graduation in a given semester, students must apply for the degree early in that semester. Students need to apply for graduation in ConnectCarolina through their Student Center. Deadlines for applying for graduation in a given term can be found on the Graduate School's website. If a student fails to graduate in the term applied for, s/he must re-apply; no prior application will suffice.

Final Defense of the Dissertation

The Final Defense (the final doctoral oral examination) is a formal requirement of the Graduate School. **The student must be registered for 3 credits of EPID 994 at the time it is held, and all committee members are required to be in attendance.** It is the perception of the GSC that dissertation committee meetings tend to operate more smoothly when all members of the committee are present in the same room. For the defense of the dissertation proposal, and for the final dissertation defense, it is highly desirable for all members of the dissertation committee, especially the Chair, to be present in the room. The GSC strongly recommends that no more than one member of the dissertation committee should participate electronically. If the Chair of the committee must participate electronically, high-quality

video conferencing (e.g., at the Mayes Center) should be used; and, it is recommended that another committee member, who is physically present, should be delegated to moderate the open session.

Once a date and time have been agreed upon by the student and committee members, the student should arrange for a room for the defense. **The defense must be announced via the epidsems distribution list (epidsems@unc.edu) at least one week in advance.** From this announcement, a flyer will be prepared for posting in the department. The announcement should include student name, title of presentation, indication that this is a doctoral defense, name of mentor, date, time, and location. Program areas are encouraged to issue specific invitations to colleagues outside the department, citing the paper titles.

The announcement of the final defense may not be made without prior permission of the Academic Coordinator. This is to ensure that all administrative tasks have been satisfied prior to the defense.

The final defense includes a presentation of the results of the doctoral research to the doctoral committee, other faculty, and students. This is followed by discussion and criticism of the scientific work presented and the final written document.

The first portion of the Final Defense is open. The candidate presents the research, and a general discussion period follows. Following this open meeting, the student and Committee meet in closed session for a final examination of the work. The results are reported to the Graduate School after all committee members have signed the "Report of the Final Oral Examination" obtained from the Academic Coordinator. **The Chair of the dissertation committee should not sign this document until the dissertation is in final form. This form will not be submitted to the Graduate School until all corrections/modifications to the final document have been completed.**

Submission of the Dissertation to The Graduate School

The student should consult The Graduate School Thesis and Dissertation Guide for information on preparation of the dissertation for submission to the Graduate School. These guidelines must be followed in order for the final product to be accepted by the Graduate School.

Dissertations must be submitted to The Graduate School in electronic format. Refer to The Graduate School webpage Thesis and Dissertation Resources for specific details.

Submission of the Dissertation to the Department

Once a student's dissertation has been approved by The Graduate School, it is the student's responsibility to send a copy of the dissertation in PDF format to the department's Academic Coordinator.

Health Behavior

WHAT WILL YOU LEARN IN THIS PROGRAM/MISSION STATEMENT/OVERVIEW

Overview

The Department of Health Behavior is in the UNC Gillings School of Global Public Health. The department offers the Doctor of Philosophy (PhD) and the MSPH (Master of Science in Public Health)-to-PhD degrees. The *Handbook* describes the competencies guiding training and degree requirements for both programs. Additional resources (including archives of guidelines from previous academic years) are available on the department website, Teams, and Canvas.

Two other documents contain important information and regulations: (1) *Gillings School of Global Public Health Student Resources* and (2) *The Graduate School Handbook*. *The Graduate School Handbook* describes policies and procedures of The Graduate School, including academic requirements and regulations, which apply to all graduate students. Other useful information is available on The Graduate School webpage. It is the student's responsibility to be aware of and comply with all requirements in these documents.

Mission

Doctoral training in Health Behavior prepares graduates for research careers in academic, non-profit, and governmental settings and for leadership roles. Graduates are trained to conduct independent research on the context and etiology of health-related behaviors that contribute to domestic and global public health problems and to develop, evaluate, and disseminate interventions to ameliorate those problems.

Key personnel

The doctoral program is administered by the doctoral program director, in coordination with the doctoral program Academic Coordinator. The doctoral program director is responsible for all issues related to enrolled doctoral students. The doctoral program is guided by a doctoral advisory committee (DAC) made up of department faculty members. Committee members are appointed by the chair of the department. The doctoral program director serves as the chair of DAC.

A commitment to anti-racism and equity

The Health Behavior department is committed to promoting anti-racism and equity in our training, research, and practice. We also aim to create an inclusive and supportive environment for students, faculty, and staff. We recognize that such a commitment requires intentional action, critical reflection, and iterative assessment of our individual and collective actions. To advance our processes of anti-racist reflection and action, we have created several structures in the department. The Equity Collective (https://sph.unc.edu/diversity/equity-collective/) was established by a group of Health Behavior students in 2017 to create, promote and sustain equity in the Department of Health Behavior. The Health Behavior Equity Task Force (https://sph.unc.edu/hb/equity-task-force-updates/) is a group of Health Behavior faculty formed in 2020 to promote anti-racism and equity through the development of an Equity Action and Accountability Plan. The department also establishes ad hoc equity work teams for specific topics as needed that involve additional faculty, staff, or students as appropriate; all faculty have served on at least one such group in the past.

Doctoral Student Advisory Committee

The doctoral student advisory committee (DSAC) serves as a representing body of the doctoral students; nominations to DSAC are made annually. The primary role of DSAC is to serve as a liaison and representative voice of the doctoral student body to the departmental faculty and administration, including representation at faculty meetings. In addition, DSAC coordinates events and purchases with student fees to facilitate social interaction and professional development and to support recruitment and orientation processes. In addition to serving on DSAC, doctoral students are strongly encouraged to

participate regularly in other aspects of department life. This participation could include: attending lectures sponsored by the department and school; attending dissertation defenses; meeting with faculty candidates; serving as a student representative (if invited) for faculty searches or other *ad hoc* assignments; and/or serving in a leadership role in one of the many other student organizations in the school and on campus.

Protection of human subjects
Training in ethical issues related to research involving human subjects is required of all students who are engaged in the planning, conduct, or analysis of research at UNC that involves human subjects. In the first fall semester, doctoral students must complete a web-based training program, the Collaborative IRB Training Initiative (CITI), and must be registered in the UNC Ethics Training Database. Information about the CITI on-line course and registration in the database may be found at UNC's Office of Human Research Ethics (OHRE) webpage.
All research involving human subjects must be approved by the Institutional Review Board (IRB) for the Protection of Human Subjects. Doctoral students must have IRB approval for research conducted as part of the doctoral dissertation.

The Honor Code
Doctoral students are subject to the regulations of the Honor Code and are expected to review and understand the code. The complete code can also be found in *The Graduate School Handbook*.

Residency and enrollment requirements
PhD students must register full-time in the department (nine or more credit hours per semester) for the fall and spring semesters during the first two years. MSPH-to-PhD students must register full-time for fall and spring semesters during the first three years. Following successful completion of the comprehensive exam at the end of the second year, full-time enrollment is 3 credits of HBEH 994 (dissertation credits). Students may continue to take other courses as needed to meet their course requirement and training needs.

Full-time enrollment exceptions in the second (or third for MSPH-to-PhD students) year may be made under special circumstances, subject to approval of the department chair and doctoral program director. See Registration in *The Graduate School Handbook* *for minimum* requirements. The department strongly recommends that students continue to maintain residency at least until the oral qualifying examination is passed and the dissertation is underway. *See also Residence Credit in The Graduate School Handbook* for the minimum number of semester registration requirements at UNC-Chapel Hill.

Continuous Enrollment
Doctoral students are expected to engage year-round with faculty on research and other mentored activities. Students are encouraged to stay continuously involved, including over summers, in activities to advance their training. Students are expected to discuss their summer plans and registration with their mentors.

Registration is required during the first or second summer session if students are taking a course(s), completing a practicum, or fulfilling work related to an academic milestone. Academic milestones include completing the doctoral written comprehensive exam, the oral comprehensive exam, and the dissertation defense. PhD students completing the primary (HBEH 842) or secondary (HBEH 843) practicum or MSPH-to-PhD students completing the research practicum (HBEH 744) during the summer are required to register for at least one credit in summer session I or II. Students must be registered for three credit hours of dissertation (HBEH 994) during the semesters or summer sessions in which the dissertation is proposed (oral exam) and defended.

Leave of Absence
Students in good academic standing may request a leave of absence for a defined period (up to one year), during which no academic progress is made. After consultation and approval from the faculty

mentor and doctoral program director, students should complete a Request of Leave of Absence form, available on the Graduate School website (https://gradschool.unc.edu/). Students should give the completed form to the doctoral program director for completion of the departmental section and signature; the Academic Coordinator will file the application with the Graduate School.

Parental Leave

UNC's Graduate Student Parental Leave Policy is designed to assist a full-time graduate student immediately following the birth or adoption of a child with 6 weeks of consecutive leave if the student is the primary child-care provider. The form to request parental leave can be found here.

Leaving the Program before Finishing the Degree

If a doctoral student finds that the PhD Program in Health Behavior is not a good fit with their interests and long-term career goals, they are encouraged to speak with their faculty mentor and the doctoral program director. The faculty mentor and doctoral program director may be able to point the student towards courses and resources that better support the student or help with applications to other programs or career opportunities.

In some cases, students leaving the program before completing the PhD may be eligible to earn a Master of Science in Public Health (MSPH). To be eligible, students need to complete the following requirements: all doctoral required core courses; a total of 40 credit hours with at least P grades; the primary practicum (HBEH 842); and a publishable manuscript. Students who wish to be considered for this option should consult with their faculty mentor and the doctoral program director. Students who matriculated into the MSPH-to-PhD track should consult the guidelines to determine requirements for earning the MSPH as a terminal degree.

Academic Advising and Progress Reporting

The Faculty Mentor

Students are assigned a faculty mentor upon entering the doctoral program. The department considers student preference, match of faculty and student research interests, and faculty preference and availability in assigning mentors. The faculty mentor is responsible for guiding students' academic and research program and approving activities that satisfy course requirements.

If appropriate, either the student or mentor may decide later that another faculty member is more suitable as faculty mentor for that student. These types of changes occur routinely, pending the approval of the doctoral program director, with the only potential barriers being the availability of a departmental faculty member qualified and willing to serve as mentor. The faculty mentor will typically serve as the chair of the student's dissertation committee but that is not automatic (see Doctoral Dissertation).

Doctoral students are expected to work independently to make appropriate progress in the program, even as they also work closely with the faculty mentor and other faculty. The mentor helps the student identify courses and practica and assists with any problems affecting the student's relationships with faculty, colleagues, or the department at large. Students are responsible for seeking meetings as needed with their faculty mentors. As a rule, students should proactively schedule at least one face-to-face meeting with their mentor or dissertation chair each semester, no matter where they are in the doctoral program. We also encourage students to get to know and work with a range of faculty during their first 2 years of training.

Cohort Advising

The doctoral program director meets with doctoral students by cohort in the first three years for PhD students and during the first year for MSPH-to-PhD students. These meetings facilitate sharing of updates regarding program requirements, soliciting student feedback and input, and identifying any concerns or challenges affecting the cohort.

First Year Progress Review and Academic Committee
At the end of their first year in the program, the PhD student and faculty mentor form an academic committee to formally review the student's progress in the doctoral program.[1] The academic committee consists of the student's faculty mentor plus two other faculty members approved by the faculty mentor. See **Appendix 1** for guidance on first year progress review meetings. These meetings generally take place in May or June following the completion of the first academic year in the program.

At least one week before the progress review meeting, the student sends the committee members a **summary report** including:

(1) Educational and professional objectives,
(2) Completed and proposed coursework, with grades for completed coursework (use the Checklist of Requirements for the PhD degree in **Appendix 2)**
(3) Practicum descriptions and learning contracts (if available),
(4) A description of other involvements and responsibilities (e.g., research assistantships, fellowships),
(5) A list of questions for the committee, and
(6) Current curriculum vitae.

The student's faculty mentor opens and closes the meeting, with the student taking the lead in reporting their progress over the first year. Within a week after the meeting, the student prepares a brief summary statement of the committee's evaluation and recommendations and submits it electronically to the faculty mentor, each committee member, the doctoral program director, and the Academic Coordinator for inclusion in the student's permanent file**.**

If the faculty mentor deems it appropriate, the academic committee may be activated for additional meetings after the first-year progress review.

Written Progress Reports
At the end of the fifth semester[2] and every semester thereafter until graduation, students provide a written progress report via email to the faculty mentor (or dissertation chair), the doctoral program director, and the Academic Coordinator for inclusion in the student's permanent file. The report should be submitted no later than the beginning of exam week for the fall and spring semesters and should be no longer than two pages. Students should include an updated Checklist with each report (**Appendix 2**) indicating any coursework or milestones completed since the last report.

For students who have not yet passed the oral qualifying exam (i.e., presented the dissertation proposal), the report should identify:

(1) the dissertation topic or progress toward identifying a topic;
(2) the dissertation research questions/aims or progress toward formulating them.
(3) the likely chair or possible candidates and faculty with whom the student has met to discuss dissertation ideas;
(4) specific, achievable goals over the next semester to move closer to being ready for the oral qualifying exam;
(5) barriers to progress; and
(6) how the department can help the student achieve the goal of progressing to, and ultimately passing, the oral qualifying exam.

For students who have passed their oral qualifying exam, the report should include the following information:

(1) date of the oral qualifying exam;

[1] This meeting takes place in second year for students enrolled in the MSPH-to-PhD Program.
[2] Seventh semester for students enrolled in the MSPH-to-PhD Program.

(2) names and department affiliations of dissertation committee members;
(3) subject area or working title of the dissertation;
(4) report of progress since the last end-of-semester progress report including what stage(s) of the dissertation process the student is in (e.g., data collection, analysis, writing up results);
(5) a self-assessment of the degree to which the student achieved each of the goals included in the previous progress report;
(6) specific, achievable goals for what progress will be completed over the next semester;
(7) barriers to progress;
(8) expected date (month and year) of the dissertation defense; and
(9) any problems, special circumstances, successes since the last report.

Progress reports provide a basis for the written dissertation plan students are expected to prepare each semester in which they are enrolled for dissertation credits (see Doctoral Dissertation). Dissertation plans and progress reports should be submitted after a "check in" with the student's faculty mentor or dissertation chair.

As noted earlier, doctoral students should schedule at least one meeting with their faculty mentors each semester (though most students meet with their mentors more frequently). Faculty mentors are also encouraged to scheduled additional meetings if they determine that an advanced doctoral student would benefit.

Progress Meetings
Beginning at the eighth semester[3], students who have not successfully passed the oral qualifying exam must schedule an annual progress review meeting with a committee made up of at least three departmental faculty members including: (1) the doctoral program director, who chairs the committee; (2) the faculty mentor (or dissertation chair if already selected); and (3) one or two other departmental faculty members, approved by the doctoral program director. While welcomed as members of dissertation committees, faculty members from outside departments are not appropriate as members of the progress meeting committee.

At the beginning of the semester, students who are due for a progress meeting will be notified by the doctoral program director and asked to nominate faculty members other than the faculty mentor to serve on the committee. The doctoral program director can approve the nominations or name other faculty members to the committee. Once committee membership is established, the student is responsible for contacting committee members to schedule the meeting and for reserving a meeting location. Students should submit the written progress report to all committee members one week prior to the meeting.

Students who require a progress meeting but who have formally scheduled the oral qualifying exam may request a waiver of the progress meeting by emailing the doctoral program director. The progress committee provides guidance to the faculty mentor/dissertation committee chair on whether the student is making adequate progress toward completion of the doctoral degree. If warranted, the progress committee may recommend more frequent meetings with the student than annually. Also, if there are committee concerns about student progress, the committee may establish written expectations and a timetable for benchmarks that the student must meet for successful completion of the degree. The faculty mentor/dissertation chair will use these expectations in grading student progress on the dissertation (see Doctoral Dissertation).

Departmental File
The department's Academic Coordinator maintains a permanent file for each student. Copies of progress meeting materials, progress reports, practicum learning contracts, requirement checklists, and all other paperwork related to the student's academic career are stored in the file. It is the student's responsibility to provide copies of these documents to the Academic Coordinator.

[3] Tenth semester for MSPH-to-PhD students.

Student Employment

Students are encouraged to seek and complete service work through research, teaching, and graduate assistantships as an integral part of training. To support and enable students' academic progress, the department recommends that throughout their training, students' service work or other employment not exceed 20 hours per week on average. This maximum is cumulative across all positions during fall or spring semesters. During required coursework (i.e., fall and spring semesters of years 1 and 2 for PhD students; years 1, 2, and 3 for MSPH-to-PhD students), 20 hours is the maximum allowable hours of employment per week that can be paid through sources that flow through UNC-Chapel Hill's accounting. Note that a non-service stipend paid through the university by a fellowship is usually considered to be equivalent to employment at 20 hours per week. If allowable by the fellowship, students may complete a full or part-time teaching assistantship and be compensated for it; research assistantships typically are not allowed. Students are encouraged not to exceed the 20-hour limit through employment outside of UNC-Chapel Hill. International students are subject to visa requirements and should consult the International Student and Scholarship Services Office for employment policy and related restrictions.

Employment Issues Related to MSPH-to-PhD Program

For the purposes of employment within the department or university, students enrolled in the MSPH-to-PhD program are classified as doctoral students and thus qualify for the doctoral minimum stipend for research and teaching assistantships.

ADMISSIONS REQUIREMENTS

Applicants must have received a masters degree prior to matriculating in the program. We do a holistic review of each application, focused on the following:

- *Fit with the department*: is the applicant interested in the type of research done in the department? If previous training is in a different field, does the applicant reflect an understanding of public health and explain why they want to switch fields?
- *Fit with a faculty member*: do we have a faculty member willing to advise the student? Ideally, we would like to see fit with 2-3 faculty members.
- *Experience with research*: does the student have at least 1-2 years of part- or full-time research experience? We are training researchers, so want to be sure applicants have a basic understanding of what research is and what it entails. Note: we are also interested in practice experience, and consider this in admissions, but do not require it.
- *Articulation of research interests*: has the student described an interest in health behavior-research that is likely important to the field, and both narrow enough to reflect some intentional thought, and flexible enough to adjust during the training process?
- *References*: strong references from academic and professional sources (generally faculty or other professional researchers who have taught/advised students and employers).
- *Academic record*: We look for strong grades, especially in graduate training or late undergraduate training. GPAs above 3.0 are preferred. We also review the application statement to assess writing and critical thinking. As of the 2021-2022 admissions cycle, GREs are no longer accepted as part of the review process.
- *International students*: International students are required to provide transcripts from all training institutions. If they have not received training at an English-language institution, they will be required to submit standardized test scores for the TOEFL or IELTS.
- *Diversity*: We aim to train a diverse public health research workforce and employ a broad definition of diversity in our admissions process.

CONCENTRATION COMPETENCIES

Doctoral students are expected to gain and demonstrate competency in theoretical foundations of the field, research methods, interventions, and in professional development topics. These competencies represent minimum objectives that form the foundation of doctoral training in Health Behavior. By the end of the program doctoral students will be able to:

1. Integrate social science and behavioral theories and empirical research to critically assess how health behaviors are formed and changed.

2. Critique the scientific literature in terms of the study design, methodological approach, interpretation, and presentation of research relevant to the field of health behavior.

3. Identify essential and compelling gaps in understanding of determinants and outcomes of health behaviors and develop appropriate research questions to address these gaps.

4. Select and apply appropriate study designs, operational measures, and analytic methods to evaluate relevant research questions and hypotheses related to health behaviors.

5. Apply theories, conceptual paradigms, and evidence to inform the design, implementation, evaluation, adaptation and dissemination of health behavior programs and policies.

6. Communicate health behavior research to diverse audiences via presentations and publications.

All students have additional learning objectives and develop specialized and in-depth competencies in their specific areas of interest.

DEGREE REQUIRESMENTS/CURRICULUM

Students complete a minimum of 58 credits across the following categories: 1) required core and elective courses (45 credits min.); 2) written comprehensive exam (1 credit); 3) practica (6 credits); and 4) dissertation (6 credits min.) (see **Table 2).** In addition, students without a prior bachelor's or MPH or equivalent degree from an accredited school of public health must complete a one-semester 3-credit Gillings School of Global Public Health core course (SPHG 600/FLO: Introduction to Public Health). See **Table 3** for the sequence of requirements by semester.

When taking electives in other school or university departments, students must enroll in courses higher than the 400-level and be graded (not pass/fail) to have those credits count towards the minimum number of credit hour hours required for graduation. Undergraduate-level foreign language courses cannot be counted toward a graduate degree. Students may take these courses as additional credits.

Students are required to take 3 advanced elective courses including one in interventions (min. 3 credits), one in methods (min. 2 credits) and one in theory (min. 3 credits). Advanced electives must be approved by the doctoral program director on an individual basis. Students should email their intended advanced elective courses and accompanying syllabi to the doctoral program director for approval prior to taking the class. Approval is done on an individual basis due to changes in course content and focus.

Table 2. Minimum PhD Requirements (58 Credits[1])

Area	# of Credits
Theoretical Foundations	*9*
HBEH 815: Foundations of Health Behavior I*	3
HBEH 816: Foundations of Health Behavior II*	3
One advanced theory course[+]	3
Research Methods	*17*
HBEH 760: Advanced Research Methods*	3
HBEH 761: Generalized Linear Modeling with Health Behavior Applications*	4
HBEH 762: Advanced extensions to linear regression*	2
HBEH 763: Measurement*	3
HBEH 860: Research Proposal Development*	3
One advanced methods course[+2]	2+
Interventions	*6*
HBEH 811: Development and Evaluation of Health Promotion and Disease Prevention Interventions *	3
One advanced interventions course[+]	3
Professional Development	*3*
HBEH 812: Professional Development I*	2
HBEH 813: Professional Development II*	1
Electives	*10*
Practica	*6*
HBEH 842: Primary practicum*	4
HBEH 843: Secondary practicum	2
Doctoral Comprehensive Exam (HBEH 891-045)	*1*
Dissertation credits (HBEH 994)	*6*
TOTAL[3]	*58*

*Required before the written comprehensive exam. +Encouraged before the written comprehensive exam but may be taken after. Must be graduate-level courses offered in HB or other departments [1]Students without a prior bachelor's or master's degree from an accredited school of public health must take the 3-credit SPHG 600/FLO course by the 4th semester and before the written comprehensive exam. It does not count towards the 58 required credits.
[2]Students are encouraged to take advanced quantitative or qualitative methods courses.

Table 3: At a Glance: PhD Sequence of Requirements (Years 1 and 2)

Year 1		
Fall 2022	**Spring 2023**	**Summer 2023**
HBEH 760: Advanced Research Methods (3) HBEH 812: Professional Development I (2) HBEH 815: Foundations of Health Behavior I (3) Optional[1]: HBEH 842: Primary Practicum (1-4 credits) Optional[1]: HBEH 843: Secondary Practicum (1-2 credits) SPHG 600/FLO: Introduction to Public Health (3)][2] Elective(s)/advanced core (3-6 credits)	HBEH 761: Generalized Linear Modeling (4) HBEH 816: Foundations of Health Behavior II (3) Optional[1]: HBEH 842: Primary Practicum (1-4 credits) Optional[1]: HBEH 843: Secondary Practicum (1-2 credits) Elective(s)/advanced core (3-6 credits)	Optional: HBEH 842, Primary Practicum (1-4 credits) HBEH 843, Secondary Practicum (1-2 credits) Elective courses
Year 2		
Fall 2023	**Spring 2024**	**Summer 2024**
HBEH 811: Development & Evaluation of HPDP Interventions (3) HBEH 762: Advanced extensions to linear regression (2) Optional[1]: HBEH 842: Primary Practicum (1-4 credits) Optional[1]: HBEH 843: Secondary Practicum (1-2 credits) Elective(s)/advanced core (2-6 credits)	HBEH 813: Profession Development II (1) HBEH 763: Measurement (3) HBEH 860: Research Proposal Development (3) Optional[1]: HBEH 842: Primary Practicum (1-4 credits) Optional[1]: HBEH 843: Secondary Practicum (1-2 credits) Elective(s)/advanced core (3-6 credits)	HBEH 891-045: Comprehensive Exam (1)

[1]The primary and secondary practicum can be completed starting with the first semester in the program and are optional in the summer. The primary practicum is required to be completed prior to the written comprehensive exam.

[2]Students without a prior bachelor's or master's degree from an accredited school of public health must take the 3-credit SPHG 600/FLO course before the completion of the 4th semester and before the written comprehensive exam. It does not count towards the 58 required credits.

Extension of timeline for completing course requirements

Occasionally, students seek, or are recommended by their faculty mentor to seek, an extension of time for completing the two years of required course work for the PhD or three years of required course work for the MSPH-to-PhD. The reasons for seeking an extension are typically personal, such as family-related reasons, or are related to academic concerns.

Because of course sequencing requirements and the annual (i.e., summer session I) schedule for the doctoral written comprehensive exam, extensions will typically be granted for one year. Students are discouraged from seeking more than a one-year extension because the written doctoral comprehensive exam is based on the two years of preceding required courses. Course content may change from year to year, which may impact student preparation for the exam.

Students who seek an extension should meet with their faculty mentor to prepare a course completion plan and timeline. Faculty mentors are expected to provide advice and support to students in developing the extended schedule and plan. Students are expected to take responsibility for following

the schedule and related plans and for keeping the faculty mentor informed of their progress. Requests, plans, and the timetable for an extended timeline must be approved by the doctoral program director.

Credit for Previous Coursework
Doctoral students are permitted to transfer in up to six course credit hours required for the degree, pending approval. Such work must represent courses relevant to the field of health behavior and the student's program of study, with course content and level of instruction resulting in student competencies at least the equivalent to those of currently enrolled doctoral students (i.e., 700- or 800-level courses in our department). Courses for which credits are given must be equivalent to those offered by the department or approved as electives, and a grade of P (or B) or higher must have been received from an accredited graduate institution.

Credit reductions do not influence the residency and enrollment requirements or comprehensive examination procedures.

HBEH 760, 761, 762, 763, 811, 812, 813, 815, 816, and 860 *cannot* be exempted, and prior credits earned in courses or seminars similar to these courses cannot be applied toward the required credits.

Students who wish to submit a credit transfer request should first review the guidelines set forth in the Graduate School Handbook. Credit transfer request form and supporting materials are typically submitted to the Academic Coordinator's office in the student's second semester. The Academic Coordinator screens the student's application materials and certifies the request.

Once a credit transfer application has been certified by the Academic Coordinator, the student may submit the request to the first year Progress Review Committee, which then makes a transfer credit recommendation. The doctoral program director has final department-level approval. The request is then reviewed by the Graduate School, which makes a final decision on the matter. If approved, the credits will appear on a student's course history and transcript as transfer credit.

Minor Degree
Students may elect to complete a formal minor in another department. A minor consists of at least 15 credits hours in the minor department and any other requirements specified by the minor department. To count toward the minor, all credits must be for courses listed (or cross-listed) in other departments. Minor credits may not count for departmental course requirements. The minor must be approved in advance by the student's faculty mentor, the doctoral program director, and the director of graduate study in the minor department. The student should complete a Minor Declaration Form which will be sent to The Graduate School by the Academic Coordinator.

Students from Other Departments Pursuing Minors in HB
Students enrolled in other departments who wish to earn a minor in Health Behavior must have a departmental faculty member as a minor faculty mentor and must earn a minimum of 15 credits in the department including: HBEH 730 (or an equivalent course), HBEH 815, HBEH 816, and HBEH 811.

Professional Development

Professional development is continuous over the course of doctoral training and occurs both informally and formally. Periodic training sessions, workshops, and other requirements help enhance engagement with the department and field of health behavior and increase professional development in the areas of the responsible conduct of research, information literacy, research funding strategies, and other areas. The Doctoral Student Advisory Committee also identifies and hosts professional development activities.

Students must register for two professional development courses: HBEH 812 (2 credits) in the first fall semester and HBEH 813 (1 credit) in the second spring semester.

Manuscript Preparation
The ability to publish research findings in peer-reviewed scientific journals is fundamental to a research career. Although not a formal course requirement, students are encouraged to seek out opportunities, prior to the dissertation project, as both a co-author and as a lead author in writing manuscripts.

Students may complete manuscripts as part of a research practicum, as part of a research assistantship, as an independent study, in collaboration with a faculty mentor, or through some other circumstances. Students are encouraged to discuss their research interests with faculty to learn of opportunities for collaboration on manuscripts. Note: MSPH-to-PhD students are required to complete a publishable manuscript to earn the MSPH.

Practica

A fundamental assumption of the practicum requirements is that mentored practical experience can enhance knowledge and skills taught in courses. Students complete a primary practicum in research and a secondary practicum in teaching, research, or some other experience that enhances professional skills (e.g., an internship in a congressional office, government agency, or non-profit organization). More time is devoted to the primary practicum (4 credits, 480 hours) than to the secondary practicum (2 credits, 240 hours). Practica can be paid learning experiences.

Each practicum is individually designed by and for the student and requires a practicum learning contract (Appendix 3). The practicum learning contract must be completed before the start of the semester when the student will be completing the practicum credits. A practicum can occur within the department or elsewhere. The preceptor is usually a department or adjunct faculty member, but that is not required. Regardless of the affiliation of the preceptor, the student's faculty mentor is responsible for assuring that the student has a worthwhile and appropriately mentored practicum.

Primary Practicum

The primary practicum is designed to enhance knowledge and skills in research through work on one or more research projects. It can occur within the context of a research assistantship, but that is not required. The practicum may involve: designing and implementing a research project, including developing and evaluating a health behavior intervention; carrying out data analyses; writing manuscripts; assuming responsibility for part of a project; or a combination of these activities.

Students must register for HBEH 842 for a total of 4 credits for the primary practicum; the credits should be split over the semesters (fall, spring and/or summer) in which the practicum takes place. Practicum credits do not apply to the 46 required course credits. If the practicum takes place during the summer students must register for at least one credit in summer session I or II. A separate practicum learning contract is required for each semester in which practicum credits are completed.

Students must devote the equivalent of 15 hours per week for two regular semesters (32 weeks) for a total of 480 hours. The primary practicum can be completed in one or two semesters and work can occur in the summer. Students may distribute the 480 hours across more than one project to optimally match their practicum learning objectives. Students must complete the primary practicum prior to taking the written comprehensive exam.

Secondary Practicum

The secondary practicum is designed to enhance knowledge and skills in teaching, research, or another area relevant to professional goals. A secondary practicum in research may involve work on the same or different projects than in the primary practicum but must emphasize different skills. Students must devote the equivalent of 15 hours per week for one regular semester for a total of 240 hours. The practicum may be completed in one or more semesters, and work can occur in the summer.

Students must register for HBEH 843 for a total of 2 credits for the secondary practicum; practicum credits do not apply to the 46 required course credits. Students must complete the secondary practicum prior to taking the oral qualifying exam.

To fulfill the secondary practicum, the student must be involved in teaching a 2- or 3-credit undergraduate, master's, or doctoral level course. Minimum responsibilities for the teaching practicum are described below. The student must be mentored by a faculty member and devote a total of 160 hours to teaching responsibilities (i.e., approximately 10 hours a week over 16-weeks). In addition, students must complete two or more workshops offered by the Center for Faculty Excellence and designed to prepare graduate students for instructional responsibilities in their future careers (e.g., the

online new TA orientation, workshop on writing a teaching statement). Completion of the workshops satisfies the remaining required hours. Students must complete FERPA training prior to TAing.

Minimum Student Responsibilities (at least two)

- Developing or significantly modifying a course syllabus as part of course planning
- Developing and implementing the equivalent of three hours of class instructional sessions (e.g., lectures, case studies, distance learning activities)
- Grading student assignments that require detailed, qualitative, evaluative feedback; i.e., merely grading multiple choice answers does not meet this requirement
- Facilitating discussion groups

During or at the conclusion of the practicum experience, each student should begin to articulate a teaching philosophy as a precursor to developing a teaching portfolio.

Faculty and Student Roles
Consideration of practica begins at the time of matriculation. The student and faculty mentor together are responsible for identifying prospective practicum assignments and mentors. The faculty mentor must approve any changes to the practica. Faculty mentorship is at the core of all practica. The faculty mentor is expected to provide opportunities that will allow students to fulfill their practicum requirements and to provide feedback to students on their performance of major responsibilities. The faculty mentor has the final responsibility for assuring that the student has the opportunity for a worthwhile practicum, even when the faculty mentor is not the mentor for the practicum.

Practicum Contract
Before a practicum begins, the student prepares a learning contract that specifies learning objectives, lists the skills to be enhanced, and describes activities that will contribute to the objectives. See **Appendix 3** for a template of the practicum learning contract. The contract is signed by the student, faculty mentor, and practicum preceptor (if different from the faculty mentor) and submitted to the Academic Coordinator to be stored in the student's departmental file.

International Travel
UNC students planning to travel internationally for any academic purposes, including conducting research, participating in practice experiences, or in any way fulfilling an academic requirement must familiarize themselves with university and school travel policies. As of August 2022, all university-affiliated global travel is prohibited unless approval is obtained. Please review current travel policies here: *https://sph.unc.edu/global-health/global-travel-toolkit-2/***.**

Waiving Practica
Because practica have such significant potential for being valuable learning experiences, and knowledge and skills in research, teaching, and other professional skills can always be enhanced, extremely compelling reasons are necessary for a practicum requirement to be waived. Extensive prior experience is a necessary but not sufficient condition for a waiver. Waiver of a practicum requirement requires the unanimous approval of the student's academic committee and written approval of the doctoral program director.

MSPH-TO-PHD DEGREE

The Department of Health Behavior offers a doctoral degree track for students holding a bachelor's degree but not a Master of Public Health (MPH) or other master's degree. Students in this degree track earn the Master of Science in Public Health (MSPH) degree before completing the requirements to receive the PhD.

MSPH-to PhD Training Sequence

Students must meet all requirements within 8 years from the date of first registration in the MSPH-to-PhD Program. **Table 5** shows the general timetable of steps for completion of the degree. **Appendix 5** is a Checklist of Requirements for the MSPH-PhD Degree.

Table 5. MSPH-to-PhD Training Sequence and Timetable

Academic Event	Semester after Entry
Completion of master's level required courses	2
Completion of first year MSPH progress review	2
Completion of master's level research practicum	2+
Completion of master's level comprehensive examination	2+
Completion of SPH integrated core course requirements	2
Completion of publishable paper	5
Completion of minimum course requirements[1]	6
Completion of primary practicum requirements[2,3]	6
Completion of secondary practicum requirements[4]	6+
Written doctoral comprehensive examination[5]	6 (Summer I)
Selection of doctoral dissertation committee	7+
Written progress reports[6]	7+
Oral qualifying examination[7]	7+
Admission to doctoral candidacy	7+
Oral defense of dissertation	9+
Award of doctoral degree	9+

[+]A semester number followed by "+" indicates the earliest semester that the event typically happens.
[1]9 credits, not including specific required courses, may be completed after the written comprehensive exam.
[2]May begin doctoral primary practicum before finishing MSPH publishable paper requirement.
[3]Primary practicum must be completed before the written comprehensive exam.
[4]May begin secondary practicum before primary practicum is completed, but both must be completed before the oral qualifying exam. [5]MSPH requirements must be completed prior to the doctoral written comprehensive exam.
[6]Required at the end of the 7th semester and every subsequent semester until graduation.
[7]At the beginning of the 10th semester, students who have not passed the oral qualifying exam must schedule a progress meeting. The progress meeting is scheduled annually until the oral qualifying examination is passed.

MSPH-to-PhD Course Requirements

Students enrolled in the MSPH-to-PhD track complete 84 credits of required course work in (**Table 6**); 50 of those course credits (plus 4 practicum credits for the research/paper practicum) must be completed before the MSPH is conferred. Courses in year 1 consist of MPH core courses that focus on foundational knowledge in public health and health behavior. In years 2 and 3, MSPH-to-PhD students enroll in doctoral required courses in the competency areas of a) theoretical foundations of health behavior, b) research methods, c) interventions, and d) professional development, as well as elective courses. See **Table 6** for MSPH-to-PhD requirement and **Table 7** for the sequence of requirements by semesters.

Table 6. Minimum MSPH-to-PhD Requirements (84 Credits)[1]

Area		# of credits
HB Master's Level Courses		***10***
HBEH 730: Theoretical Foundations of Health Behavior†*	3	
HBEH 750: Applied Research Methods†*	2	
HBEH 753: Qualitative Methods in Health Behavior†*	3	
HBEH 752: Health Behavior Survey Methods†*	2	
School Integrated Core Courses		***12***
SPHG 711: Data Analysis for Public Health†*	2	
SPHG 712: Methods and Measures†*	2	
SPHG 713: Understanding Public Health Issues†*	2	
SPHG 721: Conceptualizing Public Health Solutions†*	2	
SPHG 722: Developing, Implementing and Evaluating Public Health Solutions†*	4	
MSPH Paper		***4***
HBEH 744: MSPH Research Practicum†*	*2*	
HBEH 745: MSPH Publishable Paper Practicum†*	*2*	
Doctoral Level Required Courses		***58***
Theoretical Foundations		***9***
HBEH 815: Foundations of Health Behavior I†*	3	
HBEH 816: Foundations of Health Behavior II†*	3	
One advanced theory course+	3	
Research Methods		***17***
HBEH 760: Advanced Research Methods†*	3	
HBEH 761: Generalized Linear Models with Health Behavior Applications†*	4	
HBEH 762: Advanced extensions to linear regression*	2	
HBEH 763: Measurement*	3	
HBEH 860: Research Grant Proposal Development*	3	
One advanced methods course+[2]	2+	
Interventions		***6***
HBEH 811: Development and Evaluation of Health Promotion and Disease Prevention Interventions*	3	
One advanced interventions course+	3	
Professional Development		***3***
HBEH 812, Professional Development I†*	2	
HBEH 813, Professional Development II*	1	
Electives[3]		***10***
Practica		***6***
HBEH 842: Primary practicum*	4	
HBEH 843: Secondary practicum	2	
Doctoral Written Comprehensive Exam (HBEH 891-045)		***1***
Dissertation credits (HBEH 994)		***6***
TOTAL		***84***

†Required for conferral of MSPH degree

*Required before the doctoral written comprehensive exam.

+Encouraged before the written comprehensive exam but may be deferred until after comps. Must be graduate-level courses offered in HB or other departments

[1]Note, the MSPH degree is not conferred until students have: (a) completed at least 50 hours of course credits; (b) completed 4-credits of research and paper practicum; (c) submitted the paper for publications and (d) passed the master's level comprehensive examination.

[2]Students are encouraged to take advanced quantitative or qualitative methods courses.

[3]Graduate level courses offered in HB or other departments. Students are encouraged to choose electives in HB and other departments, take additional advanced methods courses, and select courses that reflect their substantive interests.

Table 7 At a Glance: MSPH-to-PhD Sequence of Requirements (Years 1, 2 and 3)

Year 1		
Fall 2022	**Spring 2023**	**Summer 2023**
HBEH 730: Theoretical Foundations of Health Behavior (3) HBEH 750: Applied Research Methods (2) SPHG 711: Data Analysis for Public Health (2) SPHG 712: Methods and Measures (2) SPHG 713: Understanding Public Health Issues (2)	HBEH 744: Research Practicum (2) HBEH 753: Qualitative Research Methods (3) HBEH 752: Health Behavior Survey Methods (2) SPHG 721: Conceptualizing Public Health Solutions (2) SPHG 722: Developing, Implementing & Evaluating Public Health Solutions (4)	
Year 2		
Fall 2023	**Spring 2024**	**Summer 2024**
HBEH 745: Publishable Manuscript (1-2) HBEH 760: Advanced Research Methods (3) HBEH 812: Professional Development I (2) HBEH 815: Foundations of Health Behavior I (3) Optional[1]: HBEH 842: Primary Practicum (1-4 credits) Optional[1]: HBEH 843: Secondary Practicum (1-2 credits) Elective(s)/Advanced Core (3-6 credits)	HBEH 745: Publishable Manuscript (1-2) HBEH 761: Generalized Linear Modeling (4) HBEH 816: Foundations of Health Behavior II (3) Elective(s)/Adv. Core (3-6 credits)[2] Optional[1]: HBEH 842: Primary Practicum (1-4 credits) Optional[1]: HBEH 843: Secondary Practicum (1-2 credits)	*Optional:* HBEH 842, Primary Practicum (1-4 credits) HBEH 843, Secondary Practicum (1-2 credits) Elective courses
Year 3		
Fall 2024	**Spring 2025**	**Summer 2025**
HBEH 811: Development & Evaluation of HPDP Interventions (3) HBEH 762: Advanced extensions to linear regression (2) Optional[1]: HBEH 842: Primary Practicum (1-4 credits) Optional[1]: HBEH 843: Secondary Practicum (1-2 credits) Elective(s)/Advanced Core 3-6 credits)	HBEH 813: Professional Development II (1) HBEH 763: Measurement (3) HBEH 860: Research Proposal Development (3) Elective(s)/Adv. Core (3-6 credits) Optional[1]: HBEH 842: Primary Practicum (1-4 credits) Optional[1]: HBEH 843: Secondary Practicum (1-2 credits)	HBEH 891-045: Doctoral Comprehensive Exam (1)

[1]The primary and secondary practicum can be completed starting with the first semester in the program and are optional in the summer. The primary practicum is required to be completed prior to the written comprehensive exam.

MSPH Research Practicum and Publishable Paper

Overview. The MSPH research practicum and paper are designed to enhance students' knowledge and skills in research through work on a research project that leads to a publishable paper. The paper is an approved substitute for a master's thesis, as required by the Graduate School for the master's degree. Consideration and planning for the research practicum and publishable paper begins in the fall semester of year 1 and the requirements must be completed by last day of classes in the fall semester of year 3. The timetable for completing the research practicum and paper is shown in **Table 8**.

Practicum. The research practicum usually begins in the spring semester of year 1 and is completed by fall of year 2. Students typically work on their faculty mentor's research for their practicum. If such an opportunity is not available, the faculty mentor should work with the student to identify an appropriate practicum opportunity, either in the department or in another unit. Practicum preceptors are usually faculty members within the University, although this is not required. All preceptors must hold a PhD, ScD, DrPH, or MD and must commit to mentoring the student. To complete the research practicum requirements, students should:

(1) Work with the faculty mentor to identify a research practicum and, if indicated, a preceptor.
(2) Once the practicum is identified, complete the research practicum contract and file it with the Academic Coordinator (**Appendix 6**) and
(3) Register for research practicum credits with the faculty mentor when ready.
(4) At the end of year 1, schedule a meeting with a two- or three-person committee composed of the faculty mentor, the practicum preceptor (if different than the faculty mentor), and one doctoral advisory committee member. The purpose of this meeting is to review/finalize plans for the practicum and begin developing a plan for the publishable paper that will emerge from the practicum (**Appendix 4**).
(5) Two credits (200 hours) are required for the research practicum. Students should enroll in 2 credits of HBEH 744 in the spring semester of year 1 or 1 credit in the spring of year 1 and 1 credit in the fall of year 2.
(6) Complete the research practicum by the end of the fall semester in year 2.

Paper. The research paper is completed over the course of the second year in the program and must be completed before the beginning of the third year. To complete the research paper students should:

(1) Enroll in 2 credits (HBEH 745) in fall or spring year 2 or by fall of year 3; credits may be spread over semesters and summer sessions.
(2) Work with the practicum preceptor, and possibly other members of the research team, to develop paper ideas. The paper topic should be finalized no later than the last day of classes of the fall semester in year 2.
(3) Take the leading role in conducting the analysis, interpreting the results, and writing the paper, with guidance from the practicum preceptor and, as applicable, other research team members. The preceptor reviews the paper and approves it when it is judged to be of publishable quality. Revisions are likely to be requested by the preceptor throughout the process.
(4) Submit the paper to a peer-reviewed journal by the last day of classes of the fall semester in year 3. Authorship order on the submitted paper is made by the practicum preceptor in accordance with authorship guidelines for the journal to which the paper is to be submitted.
(5) Complete the MSPH Research Paper Requirement form and obtain the preceptor's signature as required when events are completed (**Appendix 7**). The form should be filed with the Academic Coordinator.
(6) Send an electronic file of the submitted paper to the Academic Coordinator and the doctoral program director by the last day of classes of the fall semester in year 3.

Grading. The research practicum and paper are graded by the faculty mentor, with input from the preceptor if the preceptor is different than the faculty mentor. The research practicum and research

manuscript are graded using the permanent graduate grades (H, P, L, F). Grades include consideration of the timeliness of meeting the deadline as well as the quality of the work.

Table 8. MSPH Research Practicum and Paper Sequence and Timetable

MSPH-to-PhD cohort meeting with doctoral program director on the research practicum and paper requirements	Fall semester, year 1
Meet with faculty mentor to identify research practicum possibilities and, if applicable, the practicum preceptor	Fall semester, year 1 – spring semester, year 1
Meet with faculty mentor, doctoral advisory committee member, and preceptor, if applicable, to finalize the practicum and begin developing plans for the paper.	End of spring semester, year 1
Complete the research practicum contract*	Spring semester, year 1-fall semester, year 2
Complete research practicum[1]	Spring semester, year 1-fall semester, year 2
Meet with preceptor to develop paper ideas	Summer, following year 1 – Fall semester, year 2
Finalize paper topic*	Deadline: last day of classes, fall semester, year 2
Complete research paper & submit to preceptor*	Deadline: first day of classes, fall semester, year 3
Preceptor reviews paper and approves*	Fall semester, year 3
Submit paper to peer-reviewed journal*	Deadline: last day of classes, fall semester, year 3
Submit copy of the submitted paper to doctoral program director and Academic Coordinator	Deadline: last day of classes, fall semester, year 3

*Signatures required.

Additional Requirements for the MSPH Degree

Students must complete the MPH comprehensive exam. The MSPH is conferred after all MSPH-required courses, the MSPH practicum, and MPH comprehensive exam requirements have been fulfilled.

Additional Requirements for PhD Degree

Additional requirements for the PhD are the same as for those enrolled in the traditional PhD Program. These include completion of a primary and secondary practicum, passage of the doctoral written and oral comprehensive exams, and successful completion and defense of the dissertation. Note that the publishable paper must be completed and approved by the faculty mentor by the end of fall semester in year 3 for the student to be eligible to take the doctoral written comprehensive exam.

Special Note on Advising for MSPH-to-PhD Students

The department recognizes that first-year MSPH-to-PhD students have advising needs distinct from MPH or PhD students. For that reason, the doctoral program director schedules cohort advising for first year MSPH-to-PhD students in the fall and spring of the first year.

After spring semester of year 1, MSPH-to-PhD students schedule a meeting with a two- or three-person committee composed of the faculty mentor, the practicum preceptor (if different than the faculty mentor), and a doctoral program committee member. This meeting helps guide the student on: (a) identifying/designing a summer research practicum and (b) developing a plan for the publishable paper that will emerge from the practicum. The meeting gives students an opportunity to receive guidance on progressing through the program. **Appendix 4** has detailed guidance on these meetings. Additional information on academic advising for doctoral students can be found on pages 6-9 (Academic Advising and Progress Reporting).

Transferring to the MPH Program

In rare cases, MSPH-to-PhD students will decide that the MPH Program better suits their career goals and that they would like to transfer to that program. Such a transfer is only possible by applying to the MPH degree program and receiving an offer of admission. Students wishing to apply to the MPH Program must meet all requirements for admission to that program. In addition, they must:

- submit a new complete application through the SOPHAS system by the SOPHAS MPH program deadline (this includes official transcripts from all universities/colleges attended);
- pay the SOPHAS application fee;
- submit the UNC Graduate School supplemental application by the MPH application deadline;
- pay the application fee;
- address in the required statement why they now want, and should be considered for, the degree to which they are applying.

Suitability for the program is based on (a) performance in the student's first year MPH classes and (b) support of the MPH program director and the faculty mentor, with the latter provided by email to the MPH program director.

Applications from current students will be considered in the same pool of applications from students applying from other institutions or departments within UNC. No preferential consideration will be given to current students.

Students who are interested in the possibility of applying to the MPH Program (Health Behavior Concentration) are encouraged to speak with their faculty mentor and the MPH program director. Students may also seek the assistance of the Academic Coordinator on the application process.

Note: this policy does not address the more typical and straightforward situation in which a student who completes the MPH in the department chooses to apply to the PhD Program. Many students who have received the MPH in Health Behavior have applied to the PhD program in Health Behavior for admission in the fall immediately after graduating or some years later. Students in this situation follow the same application process as any applicant from any other institution.

EXAMINATIONS AND DISSERTATION

The Written Comprehensive Examination

The written comprehensive examination tests competency in the core areas of: (a) theoretical foundations of health behavior, (b) research methods, and (c) interventions. The exam is designed for students to demonstrate: 1) critical thinking; 2) ability to integrate knowledge and understanding across competency areas; and 3) readiness to undertake the dissertation.

Students *must* be registered in HBEH 891-045 when the comprehensive examination is taken during summer session I, immediately following the end of the spring semester. To be eligible for the exam, PhD students must have completed at least 36 required course credits, including 27 credits of required courses (including HBEH 760, 761, 762, 763, 811, 812, 813, 815, 816, 860) (**Table 2**) and 9 credits of advanced or elective courses. Students are also required to have completed the 4-credit primary practicum. MSPH-to-PhD students must have completed all courses required before the doctoral comprehensive exam, all requirements for the MSPH degree, and the primary practicum (**Table 6**).

The written comprehensive examination is graded by the doctoral advisory committee (DAC). DAC may invite others, including persons other than departmental faculty members, to contribute to preparing and grading examination questions. In the case of failure, the student, faculty mentor, and one or two members of DAC will meet to discuss any coursework or other assignments required by the committee for remediation. Except under unusual circumstances, students who fail will retake the exam in May the following year.

A student who fails the second examination becomes academically ineligible to continue in the program unless reinstatement is approved by the department and the Administrative Board of the Graduate School.

Unless authorized in writing by the doctoral program director, exam questions as well as students' answers are available only to the students who wrote them, members of DAC, the student's faculty mentor, and specially-assigned graders of the examination.

Doctoral Dissertation

Each doctoral student is required to propose, write, and defend a dissertation based on original research of a high scholarly standard. The major goals of the dissertation are to provide the student with an educational experience that results in: (1) a significant contribution to the field of health behavior and (2) acquisition of knowledge and skills to make continuing, important contributions to the field.

In the dissertation, students pose specific research questions to be examined, the argument supporting the research questions, and the scholarly gap to be addressed. The dissertation must:

1. Have demonstrated relevance to health behavior and significance to public health;
2. Be guided or informed by social or behavioral science theory or conceptual paradigm(s) that underlie the rationale for the research;
3. Demonstrate originality through innovation in theory, methods or substantive content, or by the application of existing theory or methods to a problem.
4. Be based in scientific standards; i.e., methods used need to be appropriate to the research questions asked or hypotheses proposed, and the dissertation itself should demonstrate mastery of the research methods used;
5. Make a scholarly contribution to the literature and to the field; and
6. Be of publishable quality.

The dissertation may use quantitative or qualitative methods or both. A re-analysis of existing data sets, whether collected by others or by the student for another purpose, is allowed when the student generates and tests original research questions and hypotheses. Students are encouraged to develop their dissertation ideas in the context of the research opportunities available to them through their faculty mentor, chair, or other faculty members. Dissertation research is facilitated when it is aligned with faculty research activities. Proceeding in this fashion should help ensure that students' plans are feasible and have scholarly value.

Appendix 8 provides an overview of the dissertation process, from the initial development of the ideas to the defense of the final dissertation. Students should review the steps in this process and consult with their chair about how to best follow them.

The Dissertation Chair

When a student's ideas about a dissertation topic and research approach have taken form, the student identifies a member of the departmental faculty who agrees to serve as the chair of the dissertation committee. The dissertation chair is often, but not required to be, the original faculty mentor.

Dissertation Credits and Grading

Students must register for 3 dissertation credits (HBEH 994, section number of the dissertation chair or, if not yet selected, faculty mentor) every semester in which they are working on the dissertation, typically beginning in the semester after passing the doctoral written comprehensive exam. Students do not need to register for dissertation credits during the summer unless they are completing their oral exam or defending the dissertation. Students are required to complete a minimum of 6 credits of dissertation requirements. While the dissertation is in progress, HBEH 994 is graded with the graduate permanent grades of P (pass), L (low pass), and F (fail). Regular communication between the student and dissertation chair is essential to fair grading and the successful completion of the dissertation. Students are expected to confer with the chair at the start of each semester to establish an achievable written dissertation plan for the semester. The progress reports prepared by students beginning in the 5th semester (7th semester for MSPH-to-PhD students) will often be the basis for the written plan. The chair will grade the student's work based on the extent to which the student has been able to follow through with that plan. It is the student's responsibility to keep the chair informed about progress on the plan and any barriers to it. As appropriate, the chair and student may revise the plan.

The Dissertation Committee

The dissertation committee consists of no fewer than five faculty members. A majority of the committee members, as well as a majority of the people passing the student on the oral qualifying exam or approving the doctoral dissertation, must be regular members of the UNC-CH Graduate Faculty from the Health Behavior department. Adjunct faculty, faculty emeriti, and committee members from other institutions are not regular graduate faculty members from the department and must be nominated for fixed term graduate faculty status to serve as committee members. No later than *four* weeks prior to the oral qualifying exam, the student must submit to the departmental Academic Coordinator the working title of the dissertation, a list of the committee members and their rank, and an electronic copy of a recent CV for any proposed committee member who must be nominated for a fixed term faculty appointment. The committee must be approved by the doctoral program director, whose signature is required on the form submitted to the Graduate School after the orals.

Committee members are responsible for examining the dissertation proposal and dissertation and participating in the oral qualifying exam and defense of the dissertation.

Developing the proposal

The approach to developing the dissertation proposal will be unique to each student and chair. Students are encouraged to begin by developing a 2-3-page document (frequently called a "proposalette") as they begin to develop their dissertation proposal. The proposalette facilitates efficient articulation and communication of aims while also summarizing the significance and methods. Students should develop the proposalette in coordination with their chair; it can be shared with potential dissertation committee members as they invite them to be on the committee and seek feedback on their ideas.

In order to establish shared norms and expectations of the dissertation process, students are also encouraged to have an initial meeting once the dissertation committee has been formed. This meeting can be used to discuss the proposed aims as outlined in the proposalette and to establish norms and expectations related to communication, document review, dissertation format, authorship and timelines during the proposal writing and dissertation processes.

The Oral Qualifying Examination

Within a year of passing the written comprehensive examination, students are expected to submit a formal dissertation proposal for tentative approval to the dissertation faculty mentor. Proposals must present: 1) the research questions to be examined; 2) the argument supporting the research questions; 3) the scholarly gap that is addressed; 4) the significance of the proposed research; 5) the guiding conceptual or theoretical model; 6) hypotheses (if appropriate to the methods); 7) and a detailed overview of proposed methods. A focused, critical synthesis of the literature should provide the rationale for the proposed research. Students are expected to have, or demonstrate how they will acquire, training through coursework in the proposed methods.

Copies of the final proposal tentatively approved by the dissertation chair must be given to the committee members at least *three* weeks before the oral qualifying examination to allow time for review. Committee members are not required to provide written or oral feedback to the student on the proposal prior to the oral exam.

The student then participates in a two-hour oral examination. The examination focuses primarily on the dissertation proposal, but questions may deal with any subject in which the student is expected to be competent. At the beginning of the orals, students are expected to present an overview presentation of their proposed research to committee members (approximately 20 minutes in length). By the day before the exam, students must pick up or obtain electronically the paperwork for the oral qualifying exam from the Academic Coordinator to take to the orals. The paperwork is comprised of two documents: the Report of Doctoral Committee Composition and the Doctoral Exam Report. Students are asked not to provide refreshments during the oral qualifying exam.

At the end of the oral qualifying examination, the committee may be satisfied with the proposal and the student's responses to questions, meaning that the student has passed the oral qualifying examination, thereby receiving approval for the dissertation project. The student may also receive a "conditional pass," in which case the student may pass and proceed with the project contingent on the minor revisions recommended and approved by the committee. Either way, students are expected to prepare a written summary memo of the key points discussed during the oral exam and a summary of any revisions made to the proposal that is distributed to all committee members and the Academic Coordinator to be kept in the student's file.

If major revisions or a new proposal is recommended, the student must schedule a second oral qualifying examination. If the student does not receive approval for the dissertation project at this point, the oral qualifying exam will be recorded as a failure with the Graduate School. Per the graduate school handbook, a student who fails the oral qualifying exam two times becomes academically ineligible to continue in the program unless the department and the Administrative Board of the Graduate School approves reinstatement.

Admission to Candidacy

Students qualify for admission to candidacy once they have completed the primary and secondary practica and all required course work, passed the doctoral written comprehensive exam, submitted an acceptable dissertation proposal, and passed the oral qualifying exam. Students should use the checklist in **Appendix 2** (PhD) or **Appendix 5** (MSPH-PhD) to track their progress towards candidacy. The admission to candidacy milestone is fulfilled when the Graduate School has received the completed oral exam paperwork from the Academic Coordinator.

Dissertation Format

Dissertations can follow the traditional monograph format or a manuscript format. Regardless of the dissertation format, the research reported should be of publishable quality, as assessed and agreed on by all members of the committee. Moreover, the student's work is not simply evaluated on the quality of the publishable papers but on the dissertation project as a whole.

Monograph format: The overall structure of a monograph format is as follows:

a) One or more introductory chapters that include an overview of the research questions to be addressed, the rationale supporting the research questions, the scholarly gap that is addressed, significance of the research, a literature review, a conceptual or theoretical model, and, as appropriate to the methods, hypotheses;
b) a methods chapter;
c) a results chapter(s);
d) a synthesis/discussion chapter that integrates all research, discusses strengths and weaknesses, and suggests future directions; and
e) appendices that may include questionnaires, details on data collection, or other such documents.

Manuscript format: The manuscript format requires at least two journal-length manuscripts that could be altered slightly for submission to refereed journals. These manuscripts ***must*** be accompanied by additional sections and/or appendices that provide detail normally excluded from articles but that demonstrate the breadth and depth of knowledge expected in the dissertation. The overall structure is as follows:

a) One or more introductory chapters with an overview of the research questions to be addressed, the rationale supporting the research questions, the scholarly gap that is addressed, a more detailed literature review than appears in a published article (as appropriate depending on the extent of the literature reviewed in the manuscripts), a conceptual or theoretical model, and, as appropriate to the methods and hypotheses;
b) chapters presenting each of the publishable articles;

c) a synthesis/discussion chapter that integrates all research, discusses strengths and weaknesses, and suggests future directions; and
d) appendices that may include questionnaires, details on data collection and analysis, or other such documents.

The publishable papers stand in place of the traditional methods and results chapters featured in the monograph. Students may include a methods chapter in the dissertation as well, if this adds significantly to the overall coherence of the dissertation.

Contingencies: Occasionally, students who propose completing two (or three) papers as part of their dissertations find that their results are better suited to a monograph format, particularly in instances where there are null findings. Students must gain approval from the dissertation chair and the entire committee before modifying their dissertation from the paper to the monograph format. In either case, students who have null findings are expected to write up their results, given that they have proposed (and should only have received approval for) important theoretically and empirically justified research questions. In this context, null findings could still contribute to the field.

Students who conduct primary data collection occasionally encounter unforeseen problems such as smaller than expected sample sizes or unusable measures. If the proposed research cannot be completed as planned and is not likely to meet the standard of publishable quality, students must seek approval from the dissertation chair and the committee to modify their dissertation plans or for re-proposing the dissertation. In some cases, particularly when conducting research on less commonly studied populations or settings, the problems encountered may be instructive and appropriate for publication. Regardless, students are always expected to take a scholarly approach to the methodological process.

Similarly, students who conduct secondary analysis of already collected data may encounter unforeseen problems that also require modifying or re-proposing the dissertation. In all cases, students are required to gain approval from the dissertation chair and the committee for changes to the previously approved dissertation proposal and to produce a full dissertation in one of the above formats.

***Final Formatting Issues*:** The final format of the dissertation is determined by the student's doctoral dissertation committee at the oral qualifying exam but must be in compliance with the Graduate School's regulations about dissertation format and content as outlined in the *Graduate School Thesis and Dissertation Guide*. The Graduate School requires that dissertations be submitted electronically. Directions for doing so can be found in the *Graduate School Thesis and Dissertation Guide*.

Publication and Authorship. Students who wish to submit manuscripts that count as part of their dissertations to peer-reviewed journals prior to the dissertation defense may do so only with the approval of the dissertation chair and review and consultation with all committee members. The student and chair must plan a timeline that allows adequate time for committee member review of the manuscripts before submission.

The discipline of public health is collaborative in nature, with authorship on publications often reflecting this collaborative approach. Given this convention, the dissertation chair is usually a co-author on publications proceeding from the dissertation. Other committee members may be named as co-authors, as appropriate, depending on their contributions.

Students are encouraged to consult with their dissertation chairs on authorship guidelines. Likewise, dissertation chairs are encouraged to take the lead on helping the student negotiate authorship roles with other committee members, as appropriate. Discussions regarding co-authorship can begin as early as the initial committee norming meeting described above, with the understanding that co-authorship will need to be revisited later because of the evolving nature of the dissertation process and of committee members' contributions. Students and dissertation chairs may wish to consult authorship guidelines articulated in the journals to which students intend to submit their papers. In other cases, the student and chair may prefer to discuss authorship roles at the conclusion of the dissertation defense.

Regardless of the timing, co-authorship decisions should reflect collegiality and a shared understanding of the responsibilities and contributions of co-authors.

Defense Timeline

The written dissertation must be in final form prior to the defense. Following the defense, substantive changes should be minimal. To achieve these goals, each committee member needs to have reviewed thoroughly the entire final document well in advance of the defense. The timetable of events around the defense is shown in **Table 4** and elaborated below. Adherence to the timetable should help assure that students go into the defense with a high-quality dissertation. Students and faculty alike must adhere to the timeline. Expectations for the level of participation in reviewing drafts by the committee should be negotiated by the student and dissertation chair in consult with each committee member.

Scheduling a defense date: Because of the need to coordinate multiple schedules, the student may schedule a tentative defense date with committee members before having approval to go forward with the defense. When scheduling the date, the student must make it clear to committee members that the date is tentative and contingent on receiving approval from all committee members to go forward. Students may not expedite the scheduling or rescheduling of the defense to avoid the requirement to pay tuition when the defense occurs, because of an impending start date for a job, postdoctoral fellowship, or for other professional or familial obligation. The schedule must allow adequate time for the chair and committee to review and provide feedback and for the student to respond to that feedback and incorporate necessary changes.

Submitting complete draft: After receiving approval from the dissertation chair to do so, the student should submit a complete draft of the dissertation to the committee members. This draft should be sent to the committee *no less than 3 weeks* before the scheduled dissertation date. It is possible that some or all committee members will have already reviewed drafts of the manuscripts. The student may request to meet with committee members in one to two weeks to discuss the work and suggested revisions. Committee members, however, are not obligated to meet with the student or provide feedback in advance of the dissertation defense. Committee members, however, must affirm to the chair whether it is appropriate for the student to go forward with the defense or to reschedule the date pending further revisions. Note that University holidays may not be counted in calculating the defense timeline.

If any committee member is not satisfied that the dissertation is ready to be defended, the student must revise the dissertation, distribute it to the committee for another round of review, and re-schedule the defense. Before the defense can be announced, the chair must affirm with each committee member that the student is ready to go forward with the defense. Approval to go forward does not imply that the student will pass the defense.

Announcement: One to two weeks before the scheduled defense date, the chair sends an announcement via email to all departmental faculty, students and the Academic Coordinator that gives the title of the dissertation and the date, time, and location of the public presentation. The abstract should be included in the body of the email or attached. Students should arrange for the dissertation presentation to be announced on the SPH-wide calendar (the HB department chair's assistant can help with this).

Table 4. Dissertation Defense Timeline

Event	Timing[1]	Person Responsible
Schedule tentative date for defense and reserve room(s) for public presentation and private defense	Several weeks/months in advance	Student
Submit full dissertation draft to committee	At least 3 weeks before tentative date	Student
Meet with committee members (not required)	1-2 weeks before tentative date	Student
Confirm with committee that defense can proceed[2]	1-2 weeks before tentative date	Chair
Email dissertation abstract, date and location of public presentation to department and Academic Coordinator	1-2 weeks before tentative date	Chair
Announce public presentation on weekly SPH calendar	Week of the defense	Student
Pick up dissertation paperwork from Academic Coordinator	At least the day before defense	Student

[1]University holidays may not be counted in the timeline.

Dissertation Defense
After a brief introduction by the dissertation chair (limited to a student's educational background, scholarships/funding, teaching experience, and record of publication), the student gives a 30- to 40-minute presentation of the dissertation at a public meeting to which all departmental faculty and students are invited. Fifteen to 20 minutes are allocated at the end of this presentation for questions from the general audience. This formal presentation should not include any celebration; such recognition is appropriately reserved until after successful defense of the dissertation. Upon completion of this question-answer component, the dissertation committee meets with the candidate in a closed session for the defense. This closed meeting usually lasts 60 to 90 minutes. Although all committee members have earlier affirmed that the student is ready to go forward with the defense, this affirmation does not imply that the student automatically passes the defense. To allow sufficient time for the public and private parts of the defense, students should schedule a 3-hour block of time.

Health Policy and Management: Doctor of Public Health (DrPH) in Health Leadership

What You Will Learn in this Program / Mission Statement / Overview

The goal of this DrPH program is to accelerate the learning, knowledge, and skill acquisition of highly motivated, mid- to senior-level leaders committed to improving the public's health such that they can maximize their positive leadership impact in their respective organizations, their field, and across the broader systems that influence good health and wellness.

Admission Requirements

- A prior master's or doctoral degree (not necessarily in public health) earned *at least* five years prior to enrollment.
- Significant post-graduate experience in the health field, including at least five years in a mid-to-senior level leadership position, preferably with substantial management and leadership responsibility.
- Demonstrated potential, with motivation to obtain senior-level positions and passion to improve the public's health.
- Grade Point Average (GPA) of 3.0 or better in prior graduate study.

While all students are expected to be academically qualified for doctoral level study, special emphasis is placed on work history, demonstrated leadership, and a practice-oriented career commitment.

***Also note*:** Students without a Master of Public Health (MPH) or Master of Science in Public Health (MSPH) from an accredited school of public health must successfully complete an additional three credit foundational learning objective course (which is offered online). This course (SPHG 600) need not be completed before matriculating, but it must be completed before graduation; most students take the course in the summer *prior* to their first fall semester

Concentration Competencies

This DrPH does not have concentrations. All students take the same courses at the same time. These are the competencies of the DrPH program and the course in which the competencies are gained.

Competencies	**Course Number and Name**	**Course Number and Name**	**Course Number and Name**	**Course Number and Name**	**Other Learning Experience**
Data and Analysis					
1. Explain qualitative, quantitative, mixed methods and policy analysis research and evaluation methods to address health issues at multiple (individual, group, organization, community, and population) levels	HPM 953 Essentials of Practice-based Research (P)	HPM 963 Program Evaluation for Health Leaders (R)	HPM 945 Dissertation Planning and Prep (R)	HPM 956 Fundamentals of Research and Analysis (R) HPM 951 Literature Review & Appraisal (R)	Dissertation
2. Design a qualitative, quantitative, mixed methods, policy analysis or evaluation project to address a public health issue.	HPM 956 Fundamentals of Research	HPM 945 Dissertation Planning and Prep (R)	HPM 759 Health Policy Analysis & Advocacy for	HPM 963 Program Evaluation for Health Leaders (R)	Dissertation

	and Analysis (P)		Health Leaders (R)	HPM 967 Quality Improvement (R)	
3. Explain the use and limitations of surveillance systems and national surveys in assessing, monitoring, and evaluating policies and programs and to address a population's health	HPM 967 Quality Improvement (P)				
Leadership, Management and Governance					
4. Propose strategies for health improvement and elimination of health inequities by organizing stakeholders, including researchers, practitioners, community leaders and other partners	HPM 969 Program Planning and Design (P)				Dissertation
5. Communicate public health science to diverse stakeholders, including individuals at all levels of health literacy, for purposes of influencing behavior and policies	HPM 962 Marketing and PR for Health Leadership (P)	HPM 860 Population Perspectives for Health/ The Research Process (R)	HPM 963 Program Evaluation for Health Leaders (R)		
6. Integrate knowledge, approaches, methods, values and potential contributions from multiple professions and systems in addressing public health programs	HPM 966 Systems thinking & Collective Impact (P)	HPM 860/950 Population Perspectives for Health/ The Research Process (R)			Dissertation
7. Create a strategic plan	HPM 959 Strategic Planning for Public and Nonprofit Organizations (P)				
8. Facilitate shared decision making through negotiation and consensus building methods	HPM 957 Crisis Leadership (P)	HPM 759 Health Policy Analysis & Advocacy for	HPM 820 Organizational Leadership	HPM 968 Managing the Healthcare Workforce	3 hour module when on campus

		Health Leaders (R)	Theory and Practice (R)		
9. Create organizational change strategies	HPM 968 Managing the Healthcare Workforce	HPM 820 Organizational Leadership Theory and Practice (R)	HPM 940 Leadership in Health Informatics (R)		
10. Propose strategies to promote inclusion and equity within public health programs, policies and systems	HPM 965 Cultural Humility for 21st Century Health Leaders(P)	HPM 950/860 Population Perspectives for Health (R)			
11. Assess one's own strengths and weaknesses in leadership capacities including cultural proficiency	HPM 965 Cultural Humility for 21st Century Health Leaders (P)	HPM 820 Organizational Leadership Theory and Practice (P)			
12. Propose human, fiscal, and other resources to achieve a strategic goal	HPM 959 Strategic Planning for Public and Nonprofit Organizations (P)	HPM 968 Managing the Healthcare Workforce (P)	HPM 958 Financial Leadership (P)		
13. Cultivate new resources and revenue streams to achieve a strategic goal	HPM 958 Financial Leadership (P)	HPM 959 Strategic Planning for Public and Nonprofit Organizations (R)			
Policy and Programs					
14. Design a system-level intervention to address a public health issue	HPM 969 Program Planning and Design (P)				Dissertation
15. Integrate knowledge of cultural values and practices in the design of public health policies and programs	HPM 969				Dissertation

	Program Planning and Design (P)				
16. Integrate scientific information, legal and regulatory approaches, ethical frameworks, and varied stakeholder interests in policy development and analysis	HPM 759 Health Policy Analysis & Advocacy for Health Leaders (P)	HPM 810 Leadership in Public Health Law and Ethics (R)			
17. Propose interprofessional team approaches to improving public health	HPM 966 Systems Thinking & Collective Impact (P)	HPM 968 Managing the Healthcare Workforce (R)	HPM 957 Crisis Leadership (R)		
Education and Workforce Development					
18. Assess an audience's knowledge and learning needs	HPM 970 Training & pedagogy for health leaders (P)	HPM 759 Health Policy Analysis & Advocacy for Health Leaders (R)			
19. Deliver training or educational experiences that promote learning in academic, organizational, and community settings	HPM 970 Training & pedagogy for health leaders (P)				
20. Use best practice modalities in pedagogical practice	HPM 970 Training & pedagogy for health leaders (P)				
Unique UNC DrPH Program Competencies					
21. Integrate ethics and professionalism into organizational and community settings	HPM 810 Leadership in Public Health Law and Ethics (P)	HPM 820 Organizational Leadership Theory and Practice (R)			
22. Apply systems thinking approaches to learn about and inform collaborative action targeting complex public health problems	HPM 966 Systems Thinking & Collective Impact (P)				

23. Apply the principles of implementation research and practice to successfully integrate evidence-based public health practices into community settings.	HPM 964 Implementation Science (P)				
24. Use quality improvement techniques to evaluate and improve health systems, programs and practices	HPM 967 Quality Improvement (P)	HPM 963 Program Evaluation for Health Leaders (R)			
25. Develop policy advocacy strategies at the legislative, administrative, or judicial levels to influence health policies	HPM 759 Health Policy Analysis & Advocacy for Health Leaders (P)				
26. Assess informatics needs in organizations and community-based settings to improve population health	HPM 940 Leadership in Health Informatics (P)				
27. Assess WHO health systems building blocks in an international context and identify system elements from different countries that could be used to improve access, quality, or health outcomes in home/work country	HPM 823 Global Health (P)				
28. Formulate strategies to reduce implicit bias, structural bias, social inequities and racism that undermine health and create challenges to achieving health equity at organizational, community, and societal levels.	HPM 965 Cultural Humility for 21st Century Health Leaders (P)				

P=Primary, R=Reinforcing.

Degree Requirements / Curriculum

Completing the DrPH requires:

1. Two years of coursework (see below)
2. A leadership reflection at the end of the coursework
3. A practicum and practicum reflection
4. Passing a written comprehensive exam

5. Completing a dissertation (passing an oral examination of the proposal and a final oral defense of the complete dissertation)

Content Area	*Course Number*	*Course Title*	*Credit Hours*
Prerequisite			
	SPHG 600/FLO*	Foundation Learning Objectives	n/a
Fall, Year 1 (7 credits)			
Ldship/PH	HPM 970	Training and Pedagogy for Health Leaders	1
Ldship/PH	HPM 810	Leadership in Public Health Law and Ethics	2
Leadership	HPM 820	Organizational Leadership Theory and Practice	2
Public Health	HPM 860	Population Perspectives for Health/Research Process	2
Dissertation	***Identification of dissertation topic (general description)***		
Spring, Year 1 (6 credits)			
Research	HPM 951	Literature Reviews & Appraisal	2
Rsch/PH	HPM 953	Essentials of Practice-based Research	2
Ldship/PH	HPM 965	Cultural Humility for 21st Century Health Leaders	1
Public Health	HPM 966	Systems Thinking and Collective Impact	1
Dissertation	***Dissertation topic finalized, first draft of literature review completed***		
Summer, Year 1 (6 credits)			
Ldship/PH	HPM 823	Global Health	1
Research	HPM 945	Dissertation Preparation and Planning	2
Rsch/PH	HPM 963	Program Evaluation for Health Leaders	2
Public Health	HPM 969	Program Planning and Design	1
Dissertation	***Draft Chapter 1 (Background and significance), revised Chapter 2 (Literature review)***		
Fall, Year 2 (7 credits)			
Research	HPM 956	Fundamentals of Research Methods and Analysis	3
Leadership	HPM 958	Financial Leadership	3
Public Health	HPM 964	Implementation Science	1
Dissertation	***Draft Chapter 3 (Methods)***		
Spring, Year 2 (6 credits)			
Ldship/PH	HPM 759	Health Policy Analysis and Advocacy for Health Leaders	2

Leadership	HPM 957	Crisis Leadership	1
Leadership	HPM 959	Strategic Planning for Public and Non-Profit Organizations	2
Public Health	HPM 967	Quality Improvement	1
Dissertation	***Dissertation proposal defense, including research question, background and significance, literature review, methods, timeline***		
Summer, Year 2 (4 credits)			
Ldship/PH	HPM 940	Leadership in Health Informatics	1
Leadership	HPM 962	Marketing and PR	2
Leadership	HPM 968	Managing the Healthcare Workforce	1
COMPREHENSIVE EXAM – August ***Dissertation***	***Continue work on dissertation***		
Year 3 & 4 (variable credits if courses in addition to dissertation, otherwise 3 credits)			
(Fall) Research	HPM 994	Doctoral Dissertation	3
(Spring) Research	HPM 994	Doctoral Dissertation	3
(Summer) Research	HPM 994	Only register if defending dissertation	3
(Fall of Year 4) Research	HPM 994	Must register if still working on dissertation	3
(Spring of Year 4) Research	HPM 994	Must register if still working on dissertation	3
Dissertation	***Fall Year 3: Data collection completed and perhaps analysis*** ***Spring/Summer: Analysis, Results, Recommendations and Plan for Change*** ***Spring/Summer/Fall: Dissertation Defense***		
	Total Credit Hours 42-51		**42+**

Practicum and Practicum Reflection

DrPH students are expected to engage in one or more applied practice experiences in which they must complete at least one project that is meaningful for an organization and that advances public health practice. The practicum provides students an opportunity to apply the knowledge and skills being acquired through their coursework and further develop and demonstrate attainment of program competencies. Relevant organizations include governmental, non-governmental, non-profit, industrial, or for-profit settings, and may be the student's own work setting. The work product may be a single project or a set of related projects that demonstrate depth of competence. It may be a discrete experience or integrated into program coursework.

In addition to the practicum deliverable, a separate practicum reflection paper is required.

Students can identify projects in classes to meet their practicum requirement, if the project identified is an application of the classroom learning to a “real world” setting (including the student’s worksite, or for another external organization). Alternatively, students can design their own practicum not directly tied to any specific class if the practicum meets the other requirements.

Final Leadership Reflection

Students are required to write a separate leadership reflection paper at the end of their second summer to describe how their leadership framework has changed over the two years of DrPH coursework. As this is a leadership focused doctoral programs, students begin their coursework by developing their personal leadership framework (fall, year 1 in HPM 820), and complete their program coursework by reflecting on how their leadership framework has evolved over time.

Examinations and Dissertation

Written Comprehensive Examination

A written comprehensive examination is administered at the end of the second year of the program, usually in late August. The examination integrates key concepts from the overall program curriculum.

Students have two 12-hour time periods over two days in which to take the exam. Specific details about the examination are provided to students at least one week before the exam is scheduled to take place and the process is discussed at the beginning of the summer semester before the examination. Note that this and all other examinations are given under the University Honor Code.

Dissertation

The DrPH dissertation is the ultimate academic test of a student’s competency. It requires the student to apply key aspects of the curriculum to improving the understanding of or resolving an important public health-related issue.

The dissertation should demonstrate the candidate’s mastery of the skills and knowledge required to address an important health-related program or problem or to create a substantial change in policy for the public’s health. The dissertation should be of publishable quality in either the scholarly literature or applied literature in health care delivery or public health. Students are strongly encouraged to publish their research, which is usually done after defending their dissertation, so the field can benefit from the research and its findings.

Students must register for dissertation credits (HPM 994 for 3 credits) each fall and spring semester after they complete their coursework, until they defend their final dissertation. Students need at least two semesters of HPM 994 to graduate (6 credits). Students do not need to register for HPM 994 in the summer unless they plan on defending their proposal or final dissertation in the summer session.

Guidelines for the Dissertation

Students have flexibility in designing a dissertation project, but all will highlight a potential strategy for addressing a current or past health policy or organizational issue or problem. The dissertation will outline a plan to guide implementation of organizational or policy change. The objective of the DrPH dissertation is to combine research with an understanding of the role of leadership in creating an implementation plan to improve the public’s health.

Students have two options for dissertation formatting. One is the traditional, single monograph DrPH dissertation. The second option is to prepare three manuscripts for publication, tying them together with opening and closing chapters for submission to the UNC Graduate School. Those who are interested in the three-paper option should consult with the program director, and dissertation chair to determine whether the alternative is feasible and desirable in their case. Choosing between the traditional DrPH dissertation format and the three-paper option requires consideration of the number of research questions that merit separate treatment in stand-alone manuscripts. There should be agreement at the end of a successful oral proposal defense as to what the format will be. The three-paper option is not appropriate for all students, and the choice of whether to use this option does not reflect the quality of the dissertation.

Oral Comprehensive Examinations – The Dissertation Proposal Defense and The Final Defense

The committee reviews and approves the dissertation proposal, provides guidance to the student in conducting the dissertation, and ultimately judges whether the dissertation meets the criteria for a scholarly work as outlined above.

The dissertation proposal defense ideally occurs in the spring or summer semester of the second year. This will help keep the student on track to complete the program in three years.

Specific areas of focus include the significance and appropriateness of the issue chosen, the appropriateness and execution of any conceptual model identified, the methodology used, whether the results logically follow from the findings, the completeness and feasibility of the proposed implementation strategy and evaluation plan.

Health Policy and Management

What You Will Learn in this Program / Mission Statement / Overview

Mission

The mission of the PhD Program in Health Policy and Management (HPM) is to provide students with the academic foundation, competencies, and research experience to become leading health services/health policy researchers who will improve the health and health care of populations in the United States and globally. The program accepts students who have varied academic, professional, and personal backgrounds and interests and prepares them for research and policy careers in diverse settings, including academia, contract research organizations, government agencies, health care systems, and the private sector.

Overview

All HPM students take required courses in health services research, research design, analytic methods, and health policy. In addition, students develop expertise in a minor area. Current minors include: Decision Sciences and Outcomes Research; Economics; Financial Management; Health Politics and Policy; Quality and Access; and Organization and Implementation Science. Students must pass written comprehensive examinations after completing course work, then present and defend a dissertation proposal and the final dissertation based on original research. The PhD program is designed to be completed in four to five years.

General Education Requirements / Admission Requirements

School of Public Health (SPH)/HPM Foundational Courses ("Prerequisites")

SPH/HPM Foundational Courses are courses that are viewed as necessary for PhD students in Health Policy and Management to complete as early as possible during the PhD program. Credits earned for SPH/HPM Foundational Courses do not count towards the required 46 credit hours. The SPH/HPM Foundational Courses must be taken before the written comprehensive examination.

There are three SPH/HPM Foundational Courses for HPM PhD students:

1. HPM 754 (Health Care in the United States: Structure and Policy): it is strongly recommended that students who have not taken this 3-hour course or its equivalent do so in their first semester.
2. EPID 600 (Principles of Epidemiology for Public Health) or EPID 710 (Fundamentals of Epidemiology): This 3-credit hour course provides students with an overview of epidemiological principles and methods.
3. Public Health Foundational Learning Objectives ("FLO"), listed as SPHG 600 (Introduction to Public Health Concepts): This 3-credit hour course provides an introduction to public health, including history, key concepts, and terms. HPM 611 (Public Health Concepts in a Systems Context) is a suitable substitution.

To succeed in the analytical methods sequence, students should also be familiar with calculus, basic statistics, and linear algebra (matrix algebra) and Stata, but no specific coursework is required prior to entering the program.

Students with an MSPH or MPH degree from a CEPH-accredited School of Public Health will be exempted from the SPH/HPM Foundational Courses. Students without one of these master's degrees who have taken SPH/HPM Foundational Courses (or their equivalents) prior to matriculation into the PhD program may exempt one or all of these courses. An exemption from a course requires completion of the appropriate form (see Section on Exempting from Required Courses) and permission from the instructor. Students who plan to exempt a course should do so as soon as possible, preferably before the start of the first year. All exemption requests should be completed before the end of the first year, as no exemption request is guaranteed to be approved.Concentration Competencies

Competencies define what students should know and be able to do upon completion of the PhD. The curriculum is designed to provide HPM students with the following competencies necessary for a career in health services/health policy research:

- Identify and appropriately apply theoretical knowledge and conceptual models in support of health services/health policy research
- Develop policy relevant hypotheses that fill a gap in the field that can be tested in a research project
- Select appropriate research designs and methodologies for health services/health policy research
- Understand and appropriately apply analytical strategies used in health services/health policy research

- Interpret and explain the results of their research project from the perspective of their minor area

Degree Requirements / Curriculum

Course Requirements

A total of 46 credit hours of coursework, excluding credits for prerequisites and the dissertation (minimum of six credits), are required for the degree. The PhD Program Checklist (Appendix 2 in HPM Guidelines and Procedures) is intended to help students ensure that they have completed all requirements. Students should review their updated checklist with their advisor each semester and upon completion of course work prior to taking comprehensive exams. Students should send the completed, reviewed course checklist to the Academic Coordinator for their review prior to taking comprehensive exams. Students must register as full-time students (at least nine credit hours) during the fall and spring semesters of the first and second years unless extenuating circumstances exist; a reduced course load requires discussion with, and approval by the PhD Program Director. The required courses, grouped by category, are:

Health Services Research/Research Methods: 9 credit hours

1. HPM 884: Health Services/Health Policy Research Methods I (3 credits)
2. HPM 885: Health Services/Health Policy Research Methods II (3 credits)
3. HPM 886: Advanced Applications in Research Methods (3 credits)

Analytical Methods: 12 credit hours

- HPM 880: Principles of Health Policy Research Methods (3 credits)
- HPM 881: Linear Regression Models (3 credits)
- HPM 882: Advanced Methodology in Health Policy and Management (3 credits)
- HPM 883: Analysis of Categorical Data (3 credits)

Professional Development: 10 credit hours (7 toward 46 required credit hours)

- HPM 871: Seminar in Teaching Health Policy and Management (1 credit)
- HPM 873: Research Seminar in Health Policy and Management (1 credit per semester during the first year for a total of 2 credits)
- HPM 874: Advanced Research Seminar in Health Policy and Management (1 credit per semester during the first two years for a total of 4 credits)
- HPM 994: Developing Proposals for Health Services and Policy Research (3 credits); students register for this course under HPM 994 (Dissertation Hours) using the section number for the course instructor during the fall semester of their third year. Because this course is considered part of the dissertation, this course does not count towards the 46 hours required for graduation. Starting in the spring of their third year, students should enroll in 994 using their mentor's section number for all subsequent semesters until they defend their dissertation.

Minor Area Classes: 15 credit hours

In addition to the requirements above, all students must take at least an additional 15 credit hours for their minor area (generally consisting of five 3-credit courses). Minors vary in the mix of required minor

area courses and elective minor area courses. At least one of the minor area classes (3 units) must be a theory-based course. Minor area classes are further described in HPM Guidelines and Procedures.

Health Policy Requirement: 3 credit hours

HPM PhD students must take at least one course that provides an understanding of one or more of the following general areas: (1) health policy development (including how and why health policies are made); (2) the content of health policy that addresses a particular public health issue; and/or (3) frameworks for understanding or making health policy choices. Although critical for the development of health policy and health policy research, this requirement cannot be fulfilled with courses that primarily focus on understanding research methods or statistics. Rather, for this requirement, policy is defined as a purposive course of actions (e.g., programs, regulations, services management practices) set by government or organizations (e.g., hospitals, insurance companies) that deal with health-related concerns. Relevant courses may be offered in HPM or through various Departments at UNC or other universities. The decision of whether a particular course can count as a Health Policy course should be made by the student's advisor, who may consult with faculty on the PhD Advisory Committee.

Typical Schedule

Fall, Year 1	Spring, Year 1	Fall, Year 2	Spring, Year 2	Fall, Year 3
HPM 880 HPM 884	HPM 881 HPM 885	HPM 882 HPM 886	HPM 883	HPM 994
HPM 873 HPM 874 SPH/HPM Foundational courses	HPM 873 HPM 874 SPH/HPM Foundational courses	HPM 874	HPM 874	
Minor course(s)	Minor course(s)	Minor course(s)	Minor course(s)	

- SPH/HPM Foundational Courses include HPM 754, EPID 600/710, and FLO/SPHG 600. Students are strongly encouraged to take these courses in their first year, but may do so in the semester that best fits their schedules.
- HPM 873 and HPM 874 are required professional development seminars. All students are required to take HPM 873 during the fall and spring semesters of their first year (total of 2 credit hours) and HPM 874 during the fall and spring semesters for their first two years (total of 4 credit hours). If course conflicts arise between these seminars and other required courses, students can postpone taking 873 and 874 until subsequent years, although they must be completed prior to their dissertation defense.
- HPM 871 (Seminar in Teaching Health Policy and Management) will be taken in the first semester the student serves as a Teaching Assistant. PhD students are

required to serve as TA for at least one semester during their time in HPM, described below.

Examinations and Dissertation

Dissertation

Writing a dissertation demonstrates PhD students' ability to synthesize, integrate and apply knowledge and skills from their courses and other learning experiences. Each PhD student is required to write and defend a dissertation based on original research of a high scholarly standard that makes a significant contribution to knowledge in the field of health services research, policy or management. Students typically defend their dissertation proposal during the third year and defend their dissertation during the spring of their fourth or fifth year. The format of the dissertation should adhere to the guidelines specified in The Graduate School Thesis and Dissertation Guide, published by the Graduate School (https://gradschool.unc.edu/academics/thesis-diss/guide/). Notably, all dissertations must be submitted electronically.

Students have the option of writing the dissertation as a traditional monograph or in the form of three manuscripts. The three-manuscript option has the benefit of directing the student's effort towards the ultimate goal of publishing, and students can work with their committee to submit approved manuscripts prior to dissertation defense. However, this option generally requires more effort prior to the dissertation defense than a traditional monograph-style dissertation. Notably, the three-manuscript option is not appropriate for all students, and the choice of whether or not to use this option does not reflect the quality of the dissertation.

Required Examinations

A doctoral student must pass a written comprehensive exam, an oral defense of the dissertation proposal, and an oral defense of the dissertation.

Comprehensive Examination (Report of the Preliminary Written Exam): The purpose of comprehensive exams is to determine whether students possess and can integrate the fundamental knowledge and skills required to conduct dissertation research, that is, whether they can synthesize what they have learned in their courses. Students should be able to understand the strengths and weaknesses of research both conceptually (e.g., how it relates to the other studies) and methodologically (i.e., assessing the strengths and weaknesses of the research design and offering strategies to improve it). Students may take the comprehensive exam only after completing all SPH/HPM foundational and required courses. Comprehensive exams are offered once per year, typically before the beginning of students' third year and are open book and open-note.

Requirements for taking comprehensive exams: Students are required to have completed and passed courses related to each exam, including HPM 880-883, HPM 884-886, and all five minor area courses. Students will be allowed to take the comprehensive written exams without completing the required units for HPM 871, HPM 873, or HPM 874, although these requirements need to be completed prior to final dissertation defense. Students should have completed a course checklist, reviewed it with their advisor, and submitted it to the Academic Coordinator, the Program Assistant, and the Program Director at the end of their second year of course work, and at least 2 months prior to sitting for the comprehensive exam.

Students will take comprehensive exams in three areas:

- Health Services Research/Research Methods: HPM 884, HPM 885, HPM 886.
- Analytical Methods: HPM 880, HPM 881, HPM 882, HPM 883
- Minor Area

All students take the same examination in both Health Services Research/Research Methods and Analytical Methods; these two exams are written and graded by the faculty who teach the required courses and/or have expertise in these areas. Faculty writing each comprehensive exam will decide: (1) whether there will be articles/readings upon which students are to base their answers (2) the amount of time students will have to write their answers (typically 4-8 hours); and (3) page limitations for answers. While the comprehensive exams are open-book and open-notes, students should not discuss either the articles, once they are distributed, or the exam questions, once they are released, with anyone, including other students, faculty members, or other individuals. The exams are administered online, allowing students to work wherever is most comfortable for them (including out-of-town). Exam windows are typically during the business day on the Eastern time zone, however.

The comprehensive exams will be graded anonymized, typically by the faculty who wrote the exam. The exams are given one of three grades: Pass, Incomplete, or Fail.

1. Pass indicates that the student has sufficient command of the content to continue with graduate studies and to write a dissertation. In rare cases, a High Pass indication will be give to indicate an extraordinarily high score on the comprehensive exam.
2. Incomplete indicates that the student is deficient in one or more areas included on the examination. The involved faculty will make recommendations for correcting these deficiencies. These recommendations can vary depending on the nature of the deficiency and might include any or all of the following: completing an independent study; successfully completing formal course(s) for credit; clarifying answers in writing; or providing oral clarification.
3. Fail indicates that the student must retake one or more comprehensive exams. Because comprehensive exams are offered only once per year, students who fail the exam must wait until the following year to retake the examination.

A student who does not satisfactorily complete the recommended activities for removing a deficiency within the allotted time, or fails to pass the exam, will have a failure recorded with the Graduate School. A second failure to pass the examination leads automatically to the student's ineligibility to continue in the PhD Program.

The outcome of the examination is reported to the student through a personal letter from the Director of the PhD Program and is made a part of the student's permanent record. The final result of the written examination process described above will be reported as a pass or fail to the Graduate School using the Report of the Doctoral Written Examination.

Alternative minor area comprehensive exams: each minor area can establish the format for their comprehensive exam that may differ in format from the HSR and Analytic Method exams. Alternative formats can include: (1) requiring students in the minor to write a publishable manuscript within certain parameters; (2) engaging in a substantive activity, such as generating a simulation model that meets certain specifications; or (3) other approved formats. Alternative minor area exam formats will be

established by the faculty lead for each minor area, in consultation with involved faculty from each minor area. The format of alternative minor area exams will be available to students taking the exam before the end of the academic year (e.g., in May before the comprehensive exam).

Dissertation Proposal Defense (Report of the Oral Examination): During an oral examination, the student must present to the dissertation committee a written research proposal for the dissertation. Although its format can vary, the organization, length, and level of methodological sophistication is often similar to a grant proposal. The student is expected to work closely with their PhD advisor and consult with committee members as the proposal is being developed. The PhD advisor typically serves as a gateway for the other committee members and needs to sign off on any version of the proposal prior to submission to other committee members. Committee members should be provided the final copy of the dissertation proposal at least 10 business days (generally two weeks) prior to the proposal defense.

Before defending the dissertation proposal, the student must have completed all required courses, (with the exception of HPM 871, HPM 873, and HPM 874) and passed the written comprehensive exam. As per the Graduate School rules, the student must be registered at the time of the defense, even if it is summer. The dissertation proposal must be defended in a meeting of the student's doctoral committee and is part of the oral examination. The dissertation committee has full responsibility for examining the doctoral proposal and evaluating performance on the oral examination. A pass will be based on the presentation of an acceptable proposal and on the demonstration of a satisfactory level of knowledge in the subject matter of the dissertation and related areas. The committee may decide to approve the proposal as presented, conditionally approve it subject to specified, generally minor, revisions, or require that the student make major revisions and stand again for the qualifying oral examination. The committee may also require additional coursework prior to a second proposal defense. The results of the exam are reported to the Graduate School. The student must receive a passing grade from a majority of the members of the dissertation committee in order to pass the proposal defense. A student who chooses to pursue dissertation research on a different topic must defend a new proposal before the doctoral committee. Students who pass the oral examination are eligible to be admitted to candidacy for the PhD degree upon formal written application to the Graduate School. IRB approval is required before the dissertation work is begun.

Dissertation Defense (Report of the Final Oral Examination): The student must defend the dissertation in an oral examination open to all members of the faculty, students, and the public. It is the responsibility of student to provide information on the exam date and location (including online platforms) to the program assistant, Academic Coordinator, and Program Director at least 30 days before the date of the dissertation defense, to allow time to post the information on the SPH and HPM listservs, calendars and websites. The Dissertation Committee has full responsibility for reviewing the completed dissertation and deciding whether the PhD degree is to be awarded. The dissertation defense is held only after all members of the dissertation committee have had an adequate amount of time to review the final draft of the dissertation, no less than one month prior to the defense. The dissertation must be in final form when submitted to the committee one month prior to the final defense. This implies that all pages, references, and appendices are in place and that a thoughtful discussion has been completed. The first portion of the defense, in which the candidate presents the research and responds to questions, is open to the public (other students, faculty, friends, family, and general members of the community). Following this open meeting, which generally lasts 30 minutes,

the committee meets with the PhD candidate in a closed session. The committee may require revisions to the dissertation after the defense. The student must be registered for a minimum of three credit hours in HPM 994 during the semester in which the final oral exam is held, even if it is summer.

More details can be found in the most current Guidelines and Procedures manual, posted on the HPM departmental website (https://sph.unc.edu/hpm/hpm-program-guidelines/).

Maternal and Child Health

What You Will Learn in this Program / Mission Statement / Overview

Developing research scholars who are capable of producing and disseminating new knowledge and methods for the public health profession in the field of MCH.

Program Competencies

Upon satisfactory completion of the PhD, graduates will be able to:

- Summarize, synthesize, and critically evaluate research evidence on a maternal and child health (MCH) topic of public health significance.
- Identify at least one theory--and summarize any related evidence—that links maternal, infant, child, and/or adolescent health to health and well-being at a different period in the life course.
- Drawing upon MCH-relevant theory, formulate a testable research hypothesis that will make a novel contribution to the knowledge base.
- Demonstrate familiarity with the main experimental and non-experimental designs and methods used by MCH program evaluators
- Understand and appropriately formulate an MCH program impact evaluation protocol.

Areas of Proficiency. Each doctoral student is expected to develop and demonstrate proficiency in at least four areas:

1. Core maternal and child health content
2. Research methods
3. A chosen substantive area of specialization
4. The student's selected minor

Degree Requirements / Curriculum

For the PhD, the MCH department requires 38 semester hours in the major plus 15 hours for the minor course of study, totaling a minimum of **53 credit hours**.

The following are the required courses:

1. **MCH Master's Core Course Sequence (MHCH 701 & 702):** PhD students entering without an MPH in Maternal and Child Health will take the MCH Department's yearlong MCH master's core course, "Foundations of Maternal and Child Health", or have a record of equivalent courses or knowledge. This course is taken in the first year of doctoral study. Associate Chair for Academics may authorize exemption from the MCH core sequence requirements by evidence of equivalent courses taken during master's training.

2. **MCH Doctoral Research Seminar (MHCH 801):** The MCH Doctoral Seminar provides a forum for first year MCH doctoral students to hone their skills in developing research questions, searching scientific literature, and preparing comprehensive literature reviews for publication. Activities center on skill building, particularly locating scientific research studies and critical review and synthesis of the scientific evidence to address important MCH questions.

3. **Theoretical Perspectives on Maternal & Child Health (MHCH 859):** This seminar reviews theories guiding MCH research and develops skills in preparing research proposals (e.g., F31; dissertation).

4. **MCH Program Impact Evaluation (MHCH 862):** Program impact evaluation analytic skills seminar. Topics: selectivity, research designs, instrumental variables, difference-in-differences, fixed and random effects, regression discontinuity, matching, and selection models. Required preparation, knowledge of Stata or SAS; proficiency in inferential statistics and multiple regression analysis.

5. **Research Methods**. All students must complete at least two 3-credit courses in research methods (qualitative, quantitative, or mixed). These courses can be taken outside of the MCH Department but must be approved by the student's faculty mentor.

6. **Three Analytic Courses**. One of the analytic courses is MHCH 862, as described above. A minimum of two other quantitative analytic course that include multivariate analysis. These may be taken in other UNC departments (e.g., Biostatistics, Epidemiology, Health Policy and Management, Psychology, Sociology) or schools (e.g., Education; Social Work; Nursing), and must be approved by the student's faculty mentor. In addition, students are encouraged to take BIOS 511 or HPM 880 if they have little or no experience with a statistical package such as SAS (BIOS 511) or Stata (HPM 880), in their first semester of

study. However, these programming classes do not count toward the analytic course requirements.

7. **Teaching Internship (MHCH 840, Section 001, Teaching):** Students are expected to spend an average of 5 hours per week on the internship. In the semester of the internship students should register for MHCH 840, Section 1 (Teaching) for one course credit.

8. **Research Internship (MHCH 840, Section 003, Research):** Students are expected to spend an average of 5 hours per week on the internship; this should be negotiated with the research internship preceptor and the student's academic mentor. In the semester of the internships students should register or MHCH 840, Section 3 (Research) for one course credit.

9. **Minor.** PhD students must declare a minor course of study in another department or program in the School of Public Health or in another department across the University. Fifteen hours of coursework in the minor department are required. See below for more information about the minor requirements.

10. **Doctoral Dissertation (MHCH 994).** Students must enroll in at least six credit hours of this course after the completion of all other required courses and passing the written comprehensive exam.

After completion of required doctoral courses, students must pass these academic milestones (in order):

a. The MCH Written Comprehensive Examination
b. The First Oral Examination, which is the defense of the dissertation proposal
c. The Second Oral Examination, which is the defense of the completed dissertation

Minor. PhD students must also choose a minor course of study in another department in the School of Public Health or in another department across the University. For a minor to be recognized by the Graduate School (i.e., appear on the student's transcript), a student must minor in a **program that offers a graduate degree and an official minor**. However, the MCH Department (but not the Graduate School) also recognizes several unofficial minors, such as in Population Studies, as fulfilling the department's minor requirements.

The Graduate School requires at least 15 credit hours for the minor. In accordance with Graduate School policies, all credits towards the minor must be for courses listed, or cross-listed, in programs *outside* of MCH. Additionally, courses in the minor area cannot be counted towards MCH requirements. For students entering the doctoral program with a master's degree, coursework completed as part of a master's program cannot be included in the required 15 minor hours. For students in the MCH Masters to Doctoral track, minor coursework completed as part of the master's program can be applied toward the 15 minor hours as long as the minor coursework was not counted toward the master's major hours.

A minor advisor must be selected when a minor is declared. The minor advisor should be a faculty member from the department in which the minor is being taken, or a department represented in the program. (For the latter, for example, a minor advisor for Population Studies might be from sociology, economics, etc. and must be a faculty fellow at the Carolina Population Center.) The minor advisor serves on the student's Doctoral Curriculum Committee and also on the Doctoral Dissertation Committee. The minor advisor and faculty mentor cannot be the same person. A minor advisor for Population Studies may be a MCH faculty member who is also a faculty fellow at the Carolina Population Center.

The minor coursework plan is approved by the student's Doctoral Curriculum Committee and by the department in which the minor is taken. Students are advised to contact the Academic Coordinator and Associate Chair of Academics in their respective minor departments to determine required courses for their potential minors, since courses for minors are often taken in sequence and require advanced planning. For a minor in Population Studies, courses approved by the CPC Training Committee are eligible, but at least 6 credits toward the minor must be "substantive" population courses, as designated by the CPC Training Committee. Once approved, the plan reflected in the "**Minor Declaration Form**" (Rev 7/09) is signed by the Associate Chair of Academics in both the major (MCH) and minor programs. For official minors, the original copy is sent by the Academic Coordinator to the Graduate School for approval and retention in the student's permanent file. Copies should also be filed with the Academic Coordinator in the minor department and the MCH Academic Coordinator. The student should provide a copy of the unofficial minor form to the MCH Academic Coordinator for the student's file. Minimum requirements for a formal minor are also found in the *Graduate School Handbook*.

The following disciplines are illustrative minors, based on their provision of extensive methods training and/or complementary theoretical/disciplinary foundations:

In SPH:

Epidemiology, Biostatistics, Health Behavior, Environmental Sciences and Engineering offer official minors. Unofficial minors include Health Policy and Management, Implementation Science, and Nutrition. These unofficial minors will fulfill MCH departmental requirements;

however, unofficial minors will not appear on the official transcript. The graduate student will need to work with a minor advisor in these programs to determine appropriate coursework.

Outside SPH:

Anthropology, Economics, Education, Psychology, Public Policy, Sociology, and Population Studies (MCH recognition only). Minors outside these areas, or self-designed minors, are possible but must be approved by the academic faculty mentor, the Director of the Doctoral Program, and the Director of Graduate Studies.

Each of the areas of proficiency listed above the minor areas should be discussed and approved during the first Doctoral Curriculum Committee meeting. A faculty member with expertise in the selected specialty area (often the student's faculty advisor) should be included on the committee.

Examinations and Dissertation

The Written Comprehensive Examination

The MCH Written Comprehensive Exam fulfills the Graduate School's written exam requirement.

Purpose. The purposes of the MCH Doctoral Written Comprehensive Exam are:

1. To assess students' mastery of the MCH knowledge base and current MCH practice (as covered in the core master's and doctoral course sequence MHCH 701, 702); and
2. To assess students' knowledge and use of theory, review of the literature, research design, and analytic approaches in addressing a MCH question (as covered in MHCH 801, MHCH 859, and MHCH 862).

Eligibility to Take the Exam. Students are eligible to take the exam after they have successfully passed all the required MCH core and three required analytic courses, and the students' Curriculum Committee members agree the student is ready to take the exam. Students may take the exam if they still have additional coursework for their minor or substantive areas with approval from their Curriculum Committee. In exceptional circumstances, students may take the exam before they have completed required MCH and analytic coursework, with approval from the Curriculum Committee, and the student may complete one of their two required internships after the exam with the approval of their curriculum committee. The exam format will be three questions, over the course of three days and is open book.

The Dissertation

Doctoral Dissertation Committee. The Doctoral Dissertation Committee is formed shortly after the student **passes** the MCH Doctoral Written Comprehensive Examination. It consists of no fewer than five members, with the majority being "regular" members of the MCH faculty. According to the Graduate School's policies, all tenured and tenure-track faculty are automatically "regular" members of the faculty. Non-tenured track faculty (i.e., Research or Clinical track) may receive approval from the Graduate School to be Special Appointed Regular Graduate Faculty. A list of regular and special appointed regular graduate faculty can be found at gradschool.unc.edu/policies/faculty-staff/faculty/. Adjuncts, faculty emeriti, and individuals from other institutions or agencies may serve on dissertation committees with approval from the Graduate School, but they do not count toward the committee majority from MCH. Please consult with your faculty mentor, the Chair of the Doctoral Committee, and the Associate Chair for Academics if you would like to include non-tenure-track MCH faculty (if they are not special appointed regular graduate faculty), adjunct faculty, or individuals from other institutions/agencies on your dissertation committee. This will ensure your committee meets the Graduate School requirements. One member of the Doctoral Dissertation Committee must be the student's minor advisor.

The Chair of the Doctoral Dissertation Committee (i.e., who is typically the student's academic faculty mentor) is the faculty member primarily responsible for assuring that the student meets all the necessary commitments to earn the degree, and as such, must be a regular or special appointed regular graduate faculty member of the MCH Department. The Dissertation Advisor (i.e., the faculty member who works most closely with the student on their research project) can be from another department or institution. It is possible for a faculty member from another department to chair an MCH dissertation committee, but this must be approved by the student's MCH faculty mentor, the Director of the MCH Doctoral Program, the Associate Chair for Academics in MCH, and the Graduate School. Likewise, if a student's committee membership is not majority MCH faculty, committee makeup must be approved by the aforementioned parties. Students seeking this approval should work with the Director of the MCH Doctoral Program to send a letter to the Graduate School for approval. Further information on committee membership can be found at https://gradschool.unc.edu/facultystaff/faculty/faq.html

Although the student cannot officially form their dissertation committee before passing their comprehensive exams, they are encouraged to begin conversations with potential committee members during their 2nd year of study. Furthermore, students are encouraged to use MHCH 859, taken in the fall semester of the 2nd year of study, to work towards an NIH F31 grant to fund their dissertation project.

Committee Process. Prospective Doctoral Dissertation Committee members are invited individually by the student to be members of the committee. Although Doctoral Curriculum Committee members frequently continue to serve on the student's Doctoral Dissertation Committee this is not required.

The Doctoral Dissertation Committee is approved by the Director of Graduate Studies using the "Report of Doctoral Committee Composition" form (**http://gradschool.unc.edu/pdf/wdcomm.pdf**) which must be transmitted to the Graduate School for approval. The student begins the process by notifying the Academic Coordinator of their intent to defend and/or the exam date. The student and their doctoral committee chair (usually the academic advisor) are responsible for completing the form, obtaining the signatures, and returning the form to the Department's Academic Coordinator, who then submits it to the Graduate School.

Each doctoral student is expected to consult with members of their Doctoral Dissertation Committee at regular intervals throughout the progress of their research.

The responsibilities of Doctoral Dissertation Committee members are to:

1. Examine and approve the dissertation proposal, as part of the oral examination required for admission to candidacy;
2. Consult with the student throughout the progress of the dissertation research; and
3. Participate in the final oral examination in defense of the dissertation.

Dissertation Proposal Content. Each candidate is required to write a dissertation reflecting research of such scope, originality, and skill in presentation as to indicate that the student has a command of the subject and has demonstrated an ability to contribute fresh knowledge or perspectives on the subject. In addition, the dissertation should demonstrate mastery of appropriate research methodology. The proposal format and length are determined by the nature of the research, but a typical proposal should include the following areas:

1. Abstract
2. Specific Aims
3. Background and Significance (this section includes a critical literature review, the conceptual/theoretical basis of the project, and the gaps in the literature addressed by the dissertation)
4. Preliminary Studies (this refers to studies done by the student if pertinent)
5. Research Design and Methods (including study design, description of the dataset/study sample and recruitment procedures, description of included variables/assessment tools and procedures, statistical analysis plan, study timetable, human subjects concerns, potential public health impact)

When developing the proposal, students should consult with all the members of their committee. Students should send a complete first draft of their proposal to their committee at least 6-8 weeks before they would like to defend their proposal. They may tentatively schedule

a proposal defense date at this time. Committee members should return feedback on the proposal within a reasonable timeframe. Students are expected to meet with their Dissertation Chair to discuss Committee member feedback. Further, they should respond to comments following the “response to reviewers” format typically used during the publication and grant review process. This response to comments should be sent to Committee members along with the revised draft of the proposal. When the Doctoral Dissertation Committee Chair agrees that Committee member feedback has been adequately addressed, the proposal defense date may be finalized.

The final proposal draft should be distributed at least two weeks before the date of the oral examination to all members of the committee. The student should notify every member of the committee of the time and place of the examination.

First Oral Examination: Dissertation Proposal Defense. Typically, the student prepares a 20-30 minute presentation of the proposal, and committee members pose questions and issues for discussion. A grade of Pass is based on the presentation of an acceptable proposal and demonstration of a satisfactory level of knowledge on the dissertation subject and related areas. The student must receive a passing grade from the majority of the members of the committee. If the dissertation proposal is not approved (i.e., the student fails the oral exam), the examination is rescheduled after revision or completion of a new dissertation proposal. A student who fails the first oral examination twice becomes ineligible to continue graduate study or to take the examination a third time without special approval by the MCH Department and the Administrative Board of the Graduate School.

Final Oral Examination: Dissertation Final Defense. The second formal meeting of the Doctoral Dissertation Committee is the "final oral examination." The defense is usually composed of an “open” presentation by the student (which anyone may attend), followed by a “closed” meeting which includes only the student and the dissertation committee**. Notice of the defense date and location, which includes a (maximum) one- page abstract of the dissertation, is distributed to SPH faculty at least one month before the defense.**

It is the responsibility of the Dissertation Advisor to see that the draft is in an appropriate form for evaluation by committee members. Students should send a complete first draft to all committee members 6-8 weeks before they would like to defend their dissertation. They may tentatively schedule a final defense date at this time. Committee members should return feedback on the dissertation within a reasonable timeframe. Students are expected to meet with their Dissertation Chair to discuss the feedback. Further, they should respond to comments following the “response to reviewers” format typically used during the publication and grant review process. This response to comments should be sent to Committee members along with the revised draft of the dissertation. When the Doctoral Dissertation Committee Chair agrees that Committee member feedback has been adequately addressed, the final defense date may be finalized.

The committee should have a copy of the final dissertation at least two weeks prior to the final defense. The committee may, at the time of the final oral examination (but not later), require alterations and corrections. The Dissertation Advisor is responsible for verifying that the changes required by the committee have been made but may delegate this responsibility to the committee members who imposed the requirements. A student passes the final oral examination only upon approval of at least two-thirds of the members of the examining committee, including a majority of the MCH members. If a second defense is needed, it must occur within the original eight calendar years allowed for completion of the doctoral program. A third defense is allowed only with special approval of the MCH Department and the Administrative Board of The Graduate School.

Dissertation Format. Students in MCH have two dissertation format options. One is the traditional monograph. The second is a manuscript format. For the manuscript format, a student completes a two-paper dissertation with an opening and closing chapter. At least one of the papers must be submitted to a peer- review journal before the final dissertation defense. This submission must be documented by a confirmation letter or email from the journal editor; documentation should be provided to the dissertation chair by the time of the final defense. If a student uses data that requires clearance or approval from the custodian of the data prior to publication, the student should discuss this with their Committee Chair and then receive approval from the Chair of the Doctoral Committee to submit the paper for clearance/approval rather than publication before the final dissertation defense.

Selecting the Dissertation Format. In selecting the format, the student must consult with their faculty mentor and dissertation committee to determine the most appropriate format, given the dissertation subject matter and organizational possibilities. For the manuscript format, it is acceptable for students to submit journal length papers that are formatted according to target journal requirements. However, the student should confirm that their selected format conforms to Graduate School specifications regarding format and content (see below). For the manuscript formats, students should use additional sections or appendices to provide the detail traditionally included in a monograph but not journal articles. For example, an introductory chapter would provide the detailed literature critique that is not usually included in empirical journal articles. A closing chapter would synthesize findings across the dissertation papers and discuss their implications for future research, practice, and/or policy.

Authorships on Dissertation Papers. Conventions vary across disciplines, but the collaborative nature of public health typically leads to committee co-authorships on dissertation manuscripts. The dissertation chair/faculty mentor is usually a co-author on all publications derived from the dissertation. Other committee members may also serve as co-authors, depending on their preferences and the significance of their contributions to the manuscripts. Dissertation chairs and students should collaborate on the negotiation of authorship roles, with the chair and/or faculty mentor leading this process as needed. Early discussion and agreement

on authorship is advisable, although progression through dissertation development and writing may lead to later, mutually agreed upon, changes in responsibilities and authorships.

Dissertation Submission Guidelines. Dissertations must be submitted to the Graduate School according to the schedule in the Calendar of Events (see *Graduate School Record*). Dissertations must be prepared in accordance with the standards in *The Graduate School Theses and Dissertation Guide*, available from the Graduate School at the following website: http://gradschool.unc.edu/etdguide. Approved technical processes for reproducing special materials or for reproducing the entire thesis or dissertation are described in the Graduate School's *Guide*. All dissertations are submitted electronically to the Graduate School. **Graduating students should also submit the dissertation cover page, which includes the final dissertation title, to the MCH Department's Academic Coordinator and to the Executive Assistant to the Department Chair.**

The IRB. All student research must be reviewed by a member of the UNC Non-Biomedical Institutional Review Board for the Protection of Human Subjects (IRB), which determines whether the proposed research is exempt from IRB review, not human subject research, (NHSR), qualifies for expedited review, or requires full board review. Some students will collect their own primary data, and others will analyze data collected by someone else (secondary data). Because it is not always clear whether secondary data analysis constitutes human subjects research for IRB purposes, students proposing secondary analyses must submit an IRB application. Go to **http://irbis.unc.edu** to submit your application to the IRB.

Nutrition

What You Will Learn in this Program / Mission Statement / Overview

The Nutrition PhD degree program prepares graduates for leadership in academic and related settings that emphasize research and teaching. PhD students conduct original research, and their degree culminates in a dissertation that expands the boundaries of nutrition knowledge, theory, and/or methodology.

The Department of Nutrition is recognized as a global leader in research and training and is unique in being the only nutrition department in the U.S. situated in both a school of public health and a school of medicine.

We engage in innovative and interdisciplinary approaches that encourage collaborations and capitalize on both schools' historical approaches to health. Our department has an unusual breadth of scientific and policy approaches, from molecules and cells to society, and moving from discovery to delivery and policy. The work of our faculty and students is carried out throughout North Carolina and globally with research in communities and populations in many countries around the world.

We live in a time in which nutrition is a pivotal factor in changing the trajectory of public health around the world. Critical public health issues—from food insecurity to obesity, cardiovascular disease, diabetes, and cancer—can be touched by nutrition research, from the cellular level to epidemiology, interventions and public policy. Our faculty train students in nutritional sciences, clinical nutrition, and public health to become global leaders in their fields. Our areas of focus are balanced by a commitment to research that improves health equity for underserved global populations. We continue to expand our reach and challenge ourselves to uphold our mission to improve health through nutrition in North Carolina and around the globe by giving our students a unique and purposeful experience and education that will translate into successful careers in academia, industry, government, and nongovernmental agencies.

The underlying philosophy which guides the structure of our doctoral training program is that students who earn a PhD in nutrition at UNC-CH should have basic knowledge and understanding of nutrition as it relates to metabolism, epidemiology, policies and interventions, as well as deeper knowledge in a more specialized area of training. In its mission to promote health equity through better nutrition for all, the department is committed to creating a training program centered on inclusion, equity, and belonging.

General Education Requirements / Admission Requirements

Applicants for the PhD degree should have completed a baccalaureate degree from a four-year college or university, or its international equivalent, with a 3.0 GPA or better. Applications from all disciplines are welcome, but the following four courses are required to enter the program: Anatomy/Physiology, Organic Chemistry, Biochemistry, and Human Nutrition. These courses are essential preparation for the graduate level nutrition science core courses required for PhD.

Prospective applicants should complete the Nutrition Doctoral Program Information Request.

PhD applicants must submit, in addition to the University's required application materials: transcripts from all prior college programs, a resume, and personal statement. The personal statement should include:

- A brief statement of what interests you most about the Nutrition doctoral program at UNC-CH.
- Specific aspects of nutrition or research questions that interest you.
- Previous research or job experience. Please identify your specific research skills (computer, laboratory methods, survey development, etc.). Applicants with prior research experience should describe in detail their research projects, including hypotheses tested, methods, results and conclusions. Please note: To help us provide information required for our training grants, please provide your number of months of prior full-time research experience. For many individuals, this will reflect months of summer research experience or full-time research experience following college. Do not include labs associated with a course (e.g. organic chemistry course with lab). It is also recommended to include evidence of quantitative skills through demonstration of prior quantitative experience (e.g., math, data analysis, or statistics courses, applied experiences in data analysis).
- Career goals upon completion of graduate studies.

Admission to the PhD program involves identifying compatibility in research interests between a prospective student and primary faculty advisor(s) as well as funding opportunities. Applicants are encouraged to begin conversations with prospective advisors prior to applying.

Concentration Competencies

In close consultation with their mentors, students develop an individual program of study prior to or within the first semester of their graduate studies. The program of study is based on student interests, background preparation, career interests and goals and availability of expertise and resources. All students complete common core course requirements to give them a foundation across all areas of nutrition. Overall learning objectives for this core may be found under the PhD section, "learning objectives" link at https://sph.unc.edu/nutr/unc-nutrition/student-life/nutr-degrees/. The individual program of study then defines a specialization area which may be defined by methodology and/or content area. Many students work in multiple areas reflecting multidisciplinary interests. The individualized program of study must be approved by the Doctoral Committee and meet all department requirements.

Below are examples of common specialization areas of study for illustration. These samples are not intended to be prescriptive, but exemplary; nor are they mutually exclusive (for example, students may specialize in biobehavioral nutrition as well as global nutrition). They provide a basis for individualized programs of specialization to ensure appropriate depth according to students' interests and reflect the expertise of our faculty members. Any of the sample programs of study can be, and often will be, augmented by various minor concentrations, ("minors", link under the PhD section at https://sph.unc.edu/nutr/unc-nutrition/student-life/nutr-degrees/) or certificate programs (https://gradschool.unc.edu/facultystaff/program-development/certificates.html)

Translational and Biobehavioral Nutrition: For students interested in the intersection of basic laboratory research and evidence-based practice, the program of study in Translational and Biobehavioral Nutrition may include, but is not limited to research centered on converting basic nutrition knowledge into practical applications to improve human health, to increase the understanding of the development of nutrition-related diseases and disorders, and/or improving existing medical treatment regimes. This program of study can include coursework and other training to support a multitude of hypothesis-driven research topics associated with health outcomes. Areas of interest can include nutritional effects on vaccine responsiveness; eating behaviors relating to weight regulation; microbiome effects on behavior and weight regulation; the role of clinical nutrition as part of personalized nutrition for specific health conditions; the natural history of diabetes in youth and young adults; and bridging preclinical research (cell and/or animal models) with clinical trials or epidemiologic studies. Students may wish to consider an extension beyond the PhD program to include training to become a registered dietician. Graduates with these interests may go on to conduct research in academic or other settings including industry, government or research institutes, or health care systems. This area of study typically includes completion of the Translational Medicine Certificate: http://www.med.unc.edu/transmed. A minor in Health Behavior is also available.

Community or Behavioral Interventions: For students interested in community-based or individual level behavioral interventions, including multi- component interventions, the program of study will have a

strong emphasis on theory-based interventions at the individual, community, or environmental levels to improve health and nutrition outcomes. This includes interventions related to diet, physical activity, and behavior change for the prevention or treatment of chronic diseases. Training in both qualitative and quantitative methods provides students with the skills to develop and evaluate programs. Graduates with these interests conduct intervention and evaluation research in academic settings and other settings such as state and federal governments, industry, and public health administration. Courses of study include training in both general intervention methods and specific nutrition intervention content. A minor in Health Behavior is available.

Global Nutrition: For students interested in global nutrition, the program of study will focus on global health, including issues such as health disparities, maternal and child health around the world, food insecurity, obesity or other nutrition-related non-communicable diseases, and strategies for creating a healthy global food system and food environment. Training prepares doctoral students in rigorous and innovative methods for work in academic and other settings including governmental and non-governmental organizations. Students may develop a specialization in global nutrition by taking International Nutrition (NUTR 745) and may choose from a wide variety of global health courses offered in other departments. For a comprehensive listing of UNC global health-focused courses, see https://sph.unc.edu/global-health/global-health-content-courses/. Each year, 5 PhD students are supported by our NIH-funded Global Cardiometabolic Disease T32 training grant, which offers an opportunity for completion of global internships with mentors in many different research settings around the world.

Nutritional Metabolism and Nutrigenomics. For students interested in the basic science of nutrition, the program of study would focus on mechanisms of nutrient action in human health and disease from a biochemical, cellular and/or molecular perspective. Ongoing research focuses on epigenetics; nutrigenetics; one-carbon metabolism; essential fatty acids; lipid metabolism; cellular physiology and signaling; nutritional influences on brain development; genetics of obesity and exercise; nutritional influences on immune function; and the molecular biology of nutrient-related diseases like obesity, diabetes, atherosclerosis and cancer. Graduates of our department with these interests are currently research scientists and professors at universities and scientists in government and industry research laboratories. In addition to courses in the Department of Nutrition, students in this area frequently take courses in other basic science departments. The Department of Nutrition is part of the Biological and Biomedical Sciences Program (BBSP) and therefore students can take advantage of their services as well, http://bbsp.unc.edu/

Nutrition Epidemiology. For students interested in epidemiology and population health, the program of study would focus on determining the contribution (protective and detrimental) of diet- or obesity-related factors to the development of diseases, analyzing the role of nutrition and obesity in growth and development, understanding the determinants and consequences of nutrition-related trends, and trying to intervene at the population level to change diets and/or reduce obesity and/or other nutrition-related diseases. Relevant areas of research may include genetic epidemiology and interactions of food and genetic factors, microbiome and metabolomics studies, environmental and chemical exposures as they relate to diet and diet-related health consequences. Work in this area often includes sophisticated analytical methods to investigate nutrition-related exposures and outcomes. Students will typically complete formal requirements for the UNC Department of Epidemiology minor. Upon graduation, students with these skills conduct epidemiological research related to nutrition in academic, research,

and government centers at the national and international level. Epidemiology Minor: http://sph.unc.edu/epid/epid-minoring-in-epidemiology/

Nutrition Policy. For students interested in policy, the program of study would have emphasis on basic principles of nutrition and health policy, including potential topics such as influences on national dietary intake data, impact of taxation, food labeling, or school feeding programs on food purchases and consumption, and food security and sustainable food systems. Students in this area must have methodological expertise in one analytic area such as nutrition epidemiology, health economics, economics, sociometrics, psychometrics or measurement and analysis related to one of several methodological subspecialties related to health behavior. Graduates with these interests conduct research in academic settings and advise policy makers in state and federal governments, industry, and public health administration. Policy relevant courses that students may want to consider as electives include Students may also be interested in the work of the Global Food Research Program founded by members of the UNC Faculty. https://www.globalfoodresearchprogram.org/

UNC Nutrition Research Institute (NRI). Some students will perform their studies at the NRI, a unique and interdisciplinary institute that focuses on Precision Nutrition. Faculty from a range of departments including Nutrition conduct research to define how individual variation (genetics, epigenetics, microbiome, prenatal stressors) affect nutrient requirements and health/disease risk in later life. Focus areas include cancer, cognitive function and brain health, cardiovascular disease, hepatic steatosis, and obesity. The NRI is located just northeast of Charlotte at the North Carolina Research Campus (NCRC). It has a well-endowed facility that spans molecular to clinical studies, including a human metabolic chamber. In this richly collaborative environment students can interact with faculty from the eight universities housed at NCRC to improve human health through nutrition and food choice. https://uncnri.org/

Degree Requirements / Curriculum

Coursework and Research Requirements

Normally, students should plan to meet all core and specialization ***course*** requirements during the first 5 semesters of graduate study. Some students complete a majority of their core requirements in the first year. Others may wish to combine core requirements with some research experience and/or elective courses, and thus spread core requirements over multiple years. However, students must take care to complete prerequisites for further courses in the first year. Students should consult with the Academic Coordinator to determine the sequence of courses that will best meet their goals. Students with prior coursework with content and rigor comparable to that of our required courses may request transfer credit or an exemption from the core requirement. An exemption from the SPHG 600 requirement must be granted by the Gillings School of Global Public Health based on the criteria posted here: https://sph.unc.edu/students/academic-and-policies/. Requests to transfer or exempt other course requirements require approval by the Department of Nutrition Doctoral Committee and must adhere to the policies set forth by The Graduate School.

Core Requirements (26-27 credit hours required for all PhD students in the Department of Nutrition)

School of Public Health Core Course

SPHG 600 Introduction to Public Health (3 credits)

Department of Nutrition Core Courses

NUTR 600 **Human Metabolism: Macronutrients (3 credits)**
AND
NUTR 620 **Human Metabolism: Micronutrients (3 credits)**
OR
NUTR 714 **Nutritional Biochemistry, Metabolism and Health.**
Ordinarily students will take 600/620. For some students developing a behavior or population-focused concentration, NUTR 714 may be substituted for the 6-credit for NUTR 600/620 sequence. A request for this substitution must be approved by the student's advisor and mentoring committee and the Nutrition Department Doctoral Committee.

NUTR 885 **Doctoral Seminar (2 credits/semester, 2 semesters total)**

NUTR 813 **Nutritional Epidemiology (3 credits) For those with limited epidemiology background**
OR
NUTR XXX **Nutrition Epidemiology (3) For those with prior coursework in epidemiology. Course number to be determined for Spring 2023**
OR
EPID 710 **Fundamentals of Epidemiology (4 credits) for students minoring in Epidemiology**

NUTR 770 **Clinical Trials in Nutrition. (3 credits)**

Choose one of the following Biostatistics Courses:

BIOS 545 **Principles of Experimental Analysis (3 credits)**
BIOS 600 **Principles of Statistical Inference (3 credits)**
BBSP 710 **Biostatistics for Laboratory Scientists (2 credits)**

All courses listed above must be completed before students can take the doctoral comprehensive examinations (most often taken at the end of the second academic year Spring semester.

NUTR 880 **Elements of Being a Scientist (3 credits) Usually taken in the fall semester of the third year. Comprehensive exams must be passed prior to taking this course.**
Other course requirements:

NUTR 785 **Graduate Teaching Experience (1 credit)**

Specialization Requirements (minimum of 25 credit hours) to include courses that develop a specific substantive or methodology expertise (minimum of 9 credit hours), and research hours in research rotations or mentored research with mentor(s) taken as **NUTR 910** (minimum of 16 credit hours).

During the term in which the proposal defense occurs and thereafter, students enroll each semester in **NUTR 994:** Dissertation (3 credits). Per Graduate School policy, 3 credit hours of NUTR 994 constitutes full time enrollment, and students should complete at least 2 full semesters of NUTR 994 before becoming eligible to graduate.

Depending on their funding source and/or timing of examinations, proposal and final thesis defense, students may need to be enrolled in a summer session. Students should consult the Academic Coordinator to determine if/when this is necessary.

TOTAL CREDITS REQUIRED FOR GRADUATION: 26 (Core) + 9 (Specialization courses) + 16 (Research skill development and additional specialization work) = 51 credits. Note this is minimal credit requirement. Programs of study often exceed 60 credit hours.

Other requirements

Ethics, human subjects, animal studies and responsible conduct of research.

All doctoral students are required to successfully complete the Collaborative Institutional Training Initiative (CITI) training during their first year along with the National Institute of Health "Responsible Conduct of Research (RCR) ethics training, which is required at least every four (4) years. CITI training is required before a student can engage in research so should be completed immediately if the student plans to work with data or on research projects at UNC. Both CITI and RCR must be completed before taking the doctoral comprehensive examination. http://research.unc.edu/offices/human-research-ethics/getting-started/training/

Students conducting laboratory animal research must also complete training requirements prior to beginning any work involving animals. https://research.unc.edu/iacuc/getting-started/

Teaching Experience

Each student will gain teaching experience by working with a nutrition faculty member to teach components of a 3-credit nutrition course or equivalent course. This involves: 1) assisting with syllabus preparation; 2) assisting with class administration (e.g., class websites, scheduling guest lectures) (3) preparing and giving at least two lectures, (4) preparing the reading list for these lectures, (5) attending all course lectures unless otherwise agreed upon with the teaching faculty, and (6) assisting student evaluation with the course instructor. The course instructor will give teaching students a written evaluation of their work in the course and send a copy to the student services manager. All students will be required to register for NUTR 785 (1-credit) to earn credit for their teaching experience.

The Center for Faculty Excellence (CFE: http://cfe.unc.edu/) offers help for students who desire additional instruction on teaching. During orientation each fall, CFE offers various workshops on leading discussions, making up exams, grading, slides, etc.

Examinations and Dissertation

Doctoral Comprehensive Examination

The comprehensive exam is designed to test competency and critical thinking skills across all areas of nutrition. The comprehensive exam contains two sections:

The **integrative section** of the comprehensive exam tests the student's ability to put a research question in a broader context, and demonstrate understanding of the basic biology, epidemiology and intervention/policy implications of a nutrition issue. While nutrition scientists do not have to be experts in all of these areas, they need to know how to read and effectively use the literature to integrate concepts to address a range of nutrition issues.

The integrative exam is written and evaluated by an interdisciplinary Comprehensive Exam Committee. It is an open book, take-home examination with a prescribed word limit. Students have 4 days to complete the exam, which will test their ability to integrate and interpret information from multiple relevant sources. All students complete the same exam. If the exam committee judges that any portion of essay is inadequate for a passing grade, the student will be given feedback and an opportunity to respond to the critiques within an assigned period of time. If, after revision, the exam is still deemed inadequate for a passing grade, the student must retake the examination the next time it is offered (typically in the following academic year). A student who fails the second attempt may petition the Graduate School to retake the exam. The Nutrition Department Doctoral Committee and the Department Chair must support the petition before a student may proceed in the program.

The **specialization** exam is a 3-hour closed book written examination followed several days later by an oral exam. The student's mentoring committee writes and evaluates the individualized specialization exam, designed to test knowledge and critical thinking skills in the student's individual program of study. The mentoring committee and student should discuss the scope and content area for the exam well in advance of the scheduled examination. Mentoring committees may coordinate to write shared specialization exam questions for students with similar focus areas. The student's primary mentor contributes to exam development and review, and participates in the oral exam, but the final determination of the outcome of the exam is made by the other committee members. The oral exam is completed after the mentoring committee has assessed the student's written exam, and it is designed to probe further in areas that may be deficient. A pass/fail decision on the specialization exam is based on both the written and oral examinations. A student who fails the specialization exam is required to retake the exam at a future date determined by the exam committee. A student who fails the second attempt must petition the Graduate School to retake the exam. The Nutrition Department Doctoral Committee and the Department Chair must support the petition by the exam committee.

For both the integrative and specialization exams, the review committee may note that while student performance is adequate to pass the exam, some additional work to address weaknesses may be beneficial. For the integrative exam, the review committee will report their evaluation back to the student's advisor. For the specialization exam, the student's advisor and mentoring committee will propose and implement a remediation plan to help the student improve specific skills and competencies that will help them to advance in the program. The committees may also wish to recognize exceptional performance by reporting a "pass with distinction" result to the Doctoral Committee and which will be included in the student's record.

The overall **Comprehensive Exam Committee** includes 3-4 faculty with diverse expertise. The committee is responsible for (1) Communicating with faculty advisors about the specialization exam requirements, dates, and policies; (2) Reviewing rigor across all specialization exams and (3) Developing, administering, and grading the integrative exam.

Eligibility to take the comprehensive exams. All students must enroll full-time in the department of Nutrition for at least one academic year before taking the comprehensive exam. Before a student is eligible to take the comprehensive exam, he/she must have completed the core courses listed above in the required courses section (Not including NUTR 880, NUTR 785 or research hours). All students must earn a grade of "P" or higher in required courses to be eligible to take the exam. Students who fail or earn a low pass in a required course must retake the course to earn the required grade. A student who fails or earns a low pass a second time will be ineligible to take the doctoral comprehensive exam.

Timing of the exam: tudents are expected to take the comprehensive examination in the second year of the doctoral program. In rare circumstances a student might be eligible to take the exam at the end of the first year. Students wishing to take the exam at the end of their first year need to obtain permission from their faculty mentor and the doctoral committee. Traditionally, exams are given at the end of the spring semester. Exact timing may vary slightly based on weekends, holidays, etc. Per Graduate School policy, students must be enrolled during the term in which the comprehensive exam is administered. It is the students' responsibility to seek clarification on the timing, dates, and locations of these exams and to be available for all components, including the oral exams. If a student wishes to travel during the exam period, they must discuss this with the Doctoral Committee Chair (not the student's mentor). All students take the integrative examination at the same time. The usual schedule is for distribution of the exam on a Monday morning with return of completed exam on Thursday at 4 pm. The written and oral sections of the specialization exam are individually scheduled by the student and the mentoring committee.

Students with disabilities/chronic medical conditions should work with Accessibility Resources & Service (https://ars.unc.edu/) for consideration of special accommodations several months in advance for their comprehensive examination.

A student must pass the specialization and integrative sections of the comprehensive exam before enrolling for NUTR 880 and becoming eligible for doctoral candidacy, which is required before students can defend their dissertation proposal.

SELECTION OF THE DISSERTATION COMMITTEE

Composition. After passing the comprehensive examination, the student, with advice from the faculty advisor(s), will choose a dissertation committee. The dissertation committee must have at least five members. Ordinarily, one faculty member serves as primary advisor and doctoral committee chair. With approval by the Doctoral Committee, the dissertation committee may include co-chairs with equal mentoring roles. When there are co-chairs, one will be designated as the chair of record to meet administrative responsibilities. Please refer to The Graduate School Handbook (https://handbook.unc.edu/phd.html) for policy regarding the Dissertation Committee Composition. Tenured and tenure track Nutrition faculty, and fixed-term faculty approved by the Doctoral Committee may serve as primary or co-primary advisors and doctoral committee chairs.

The chair and at least two other members must hold a primary or joint appointment in the Department of Nutrition. Each dissertation committee must include at least one nutrition faculty member from a different main lab or research group than that of the primary advisor or co-advisors. In addition, any student completing a formal minor must have a faculty member from the department providing the minor on the dissertation committee.

At least three committee members must be full members of the Graduate Faculty. Committee members who are not full members of the Graduate Faculty (fixed term UNC faculty and/or individuals from other institutions who may hold adjunct appointments at UNC-CH) may be appointed with approval of the Graduate School. Students should speak with the Academic Coordinator regarding this process. Committee members are selected because their fields of expertise are particularly relevant to the student's research. Students are encouraged to include at least one member from outside the Department of Nutrition. The Academic Coordinator will review the dissertation committee to ensure that it meets minimum requirements. Once the committee is appointed, changes or substitutions among the members require additional approvals. The Doctoral Committee and the Graduate School must approve the initial composition of the committee and any requested substitutions of committee members. A written request should be submitted to the Academic Coordinator in an email. This email will be sent to the doctoral committee for consideration. The email should include the tentative dissertation title, a brief description of the dissertation (1-2 sentences), and the names of all committee members. The email must include a brief description of the expertise of any proposed committee member who is not a full member of the graduate faculty in the Department of Nutrition. Relevant forms may be obtained from: https://gradschool.unc.edu/academics/resources/forms.html

Functions of the Dissertation Committee. Doctoral students should consult with members of their dissertation committee at frequent intervals throughout the progress of their research. The actual number and content of these meetings is left to the discretion of research mentor(s), but a minimum of three meetings is suggested. At a minimum, students are required to complete a yearly IDP and meet with committee members at least once each semester during the research and dissertation-writing stage.

The first formal meeting should be held when the dissertation committee is established. The agenda usually includes a review of the student's IDP and previous educational and work experiences, courses taken while in the doctoral program, and ideas for dissertation research and a timeline and plan for meetings and expectations around expected feedback from committee members. During this meeting, additional ways to develop the student's area of expertise are discussed and agreed upon. The second formal meeting would be an oral defense of the dissertation proposal. An interim meeting to discuss progress of the dissertation is recommended during the period when the student is conducting dissertation research. The last formal meeting is the dissertation defense.

The Dissertation Proposal. Once prior requirements have been met, students will write and defend a dissertation proposal. The proposal must include a survey of the research literature and significance of the work, a statement of research aims, a detailed description of the research methods, and a timeline. The exact format of the proposal will be decided upon by the student and the dissertation committee.

The doctoral candidate cannot begin work on the dissertation (e.g., collecting, data, formal analysis of data) until the dissertation committee has approved the dissertation proposal. While in some cases, the collection of pilot data or preliminary analyses might be completed prior to the proposal defense, these analyses and data collection are considered preliminary and not part of the dissertation research. Thus, the formal dissertation research should follow the satisfactory proposal defense. The student is responsible for bringing the official paperwork to be signed by the dissertation committee members to the proposal defense for committee signatures. In addition, before any data are collected, research involving human subjects must have the approval of the student's faculty advisor and the Institutional

Review Board for the Protection of Human Subjects (IRB). Animal studies must be approved by the Institutional Animal Care and Use Committee (IUCAC).

The selection of a dissertation topic should be a joint decision between student and advisor. The doctoral program is an important opportunity to pursue research with the guidance and help of a mentor. Students usually learn the most if their research area is one in which their mentor is an expert. Generally, the closer a student's topic to the mentor's area of expertise, the more the student will learn.

The **Dissertation Proposal Defense** is typically completed during academic year 3 or during the summer following year 3. The written proposal should be developed with input from the dissertation committee members (see above for suggested schedule of committee meetings). The draft dissertation proposal should be submitted to the committee members for review at least two weeks before the required oral defense of the proposal. The student or the student's advisor shall notify every member of the dissertation committee as to the purpose, time, and place of the proposal defense. All members of the dissertation committee must be present for the oral examination. A pass will be based on the presentation of an acceptable proposal and on the demonstration of a satisfactory level of knowledge in the subject matter of the dissertation and related areas. The student must receive a "pass" from a 2/3 majority of the members of the dissertation committee. A student who fails the proposal defense will be given a second opportunity. Students who fail a second time are ineligible to continue in the Graduate School. The student is responsible for bringing the official paperwork to be signed by the dissertation committee members to the proposal defense for committee signatures.

Students should register for NUTR 994 Doctoral Dissertation credits during the semester in which they plan to defend their proposal, and each semester thereafter. If, during the course of the dissertation research, the student must make changes that result in a substantial difference in the dissertation, the student must receive approval from a 2/3 majority of the members of the Dissertation Committee. A substantial difference includes use of different data, different research questions or aims (including addition or subtraction of an aim), and/or substantially different methods. Such approval is necessary before any work on the revised dissertation proposal begins. The approval process includes a memo of no more than 1-page to be submitted to committee members. The document must include a rationale for the change in research direction as well as the substantial changes proposed.

Once constituted, **changes to the dissertation committee** membership require review and approval by the Doctoral Committee and the Graduate School. A request to change the committee composition should be sent from the dissertation committee chair or co-chairs to the Nutrition Academic Coordinator and the Doctoral Committee Co-Chairs, stating the reason for the change and describing the role and qualifications of the new member. Such changes should not occur close to the time of the final dissertation defense as the role of the committee is to guide the student's dissertation research, although exceptions may occur in the event that a committee member leaves the university.

Final Dissertation Defense and Application for Degree

Through conceptualizing, planning and executing research and through the experience of writing a proposal and dissertation, the doctoral student learns some of the most important skills of a modern scientist. Scientists need these skills to succeed. The learning that is done through completing the dissertation distinguishes a doctoral student from a master's student. The dissertation indicates that the candidate has mastered research methodology, has a grasp of the historical and theoretical aspects of

the research topic, has contributed new knowledge, and has successfully accomplished the goals and objectives outlined in the dissertation proposal.

Time Limitation. A minimum of 12-months must lapse between defense of the dissertation proposal and the final defense of the dissertation unless an alternate timeline is approved by the PhD Committee. All requirements for the degree must be completed within eight years from the date of first registration in the Graduate School. An extension of the degree time limit may be granted upon petition to the Dean of the Graduate School.

Format of the Dissertation. The dissertation should include a set of related manuscripts united by an appropriate review of the literature, an expanded methods section, and an overall synthesis of the research findings and discussion of significance and direction for future research.

Guidelines for preparation of a dissertation.

1. Each manuscript should be of the quality and length usually expected for publication in a peer reviewed scientific journal.
2. A minimum of two research papers must be included, but three papers are recommended. These may include methodological papers, but must include at least one paper presenting major, substantive research results.
3. A high-quality review paper of sufficient merit for publication may substitute for the literature review, but unless special justification is provided this will not count as one of the two required papers.
4. An expanded methods section may be included if the manuscripts do not contain details of the methods or if the student needs to show additional validation of the methods that were used. Additional detailed methods and results may be presented in appendices.
5. Introduction and synthesis chapters should reflect the entire body of research reflected in the dissertation, that is, they should synthesize across the individual papers. They should provide (not necessarily in the following order):
    a. Background and literature review
    b. An overview of the major research findings
    c. A discussion of significance: how the research contributes to the field, how it confirms previous work or breaks new ground, the context in which the research should be placed and/or where appropriate, a discussion of the health/nutrition/public health/policy significance of the work.
    d. A discussion of the major strengths and weaknesses of the work
    e. Directions for future research

The dissertation should include at least two first-authored papers, **which must have been submitted to journals before the dissertation defense**. If the student's research is part of a large multi-center project with a publication committee that must approve all journal submissions, submission to this committee is acceptable in lieu of submission to the journal. A student's committee can petition the Doctoral Committee for deviations from this policy when the deviation is scientifically justified. The doctoral candidate is expected to assume the role of lead author, exercising responsibilities and decision-making prerogatives with advice from the dissertation committee chair. Authorship recommendations from the scientific editors of the major health sciences journals serve as the guidelines for this process. The primary advisor is responsible for assisting in negotiating authorship issues, particularly in the case of

multi-site collaborations, and for studies that have established publication and authorship policies. ("authorship", link under the PhD section at https://sph.unc.edu/nutr/unc-nutrition/student-life/nutr-degrees/).

Dissertation Defense. When the student has completed a draft of the dissertation, and the doctoral committee has certified that all other degree requirements have been met, the dissertation defense may be scheduled. The student should ensure their dissertation committee members receive a copy of their dissertation final draft at least two weeks prior to their proposed date of defense to ensure enough time is given for proper review. However, students should submit drafts of their research papers for review by committee members prior to the assembly of the final dissertation draft. When dissertation committee members are co-authors of dissertation papers for journal submissions, review and approval for submission is required from all co-authors.

The final dissertation defense includes a 40-50 minute public seminar followed by a question-and-answer period, and a private meeting of the student with members of the dissertation committee. The relative timing of these events may be decided by the dissertation committee (e.g. private session immediately following the public presentation or entirely separate events).

It is the student's responsibility to schedule the dissertation defense and notify the department at least 2 weeks prior to the defense date so that it may be advertised appropriately within the department. Students must work around the scheduling of required nutrition courses to avoid scheduling conflicts with the public presentation. Students should include the title of their dissertation, time, date, and location of the defense, the abstract, and a list of their committee members via email to the Academic Coordinator in this notification. The student should assume responsibility for obtaining needed forms. https://sph.unc.edu/students/academic-and-policies/ All committee members must sign the final dissertation form. The committee may, at the time of the final defense, but not later, require revisions to the dissertation before it can be submitted to the Graduate School.

The Graduate School will accept only dissertations produced according to the standards in A Guide to Theses and Dissertations. http://gradschool.unc.edu/academics/thesis-diss/ Dissertations must be prepared in a form consistent with approved methods of scholarly writing and research. On matters of form, the student should also consult published manuals of style. It is suggested that a draft copy of the dissertation be pre-approved by Graduate School staff well before the submission deadline. Dissertations must be submitted electronically to the Graduate School according to the schedule in the University Registrar's Calendar.

Application for Degree

When a student nears the end of their research and can anticipate final approval of the dissertation, they must complete an online application for graduation. The student must file a new application for the degree if they do not graduate as planned. Such applications must be filed by the deadline provided by the Registrar. Students will notify the Graduate School of their plan to graduate by applying online through the ConnectCarolina student portal. Students must submit their dissertation to the Graduate School following the School's formatting and timing requirements.

Students should monitor applicable deadlines for completion and submission of the dissertation according to the Graduate School, consulting the Academic Coordinator as questions arise.

Mentoring: Advisors and mentoring Committees

Assignment of Advisor. At the time of admission to the doctoral program, most students have identified the faculty member(s) with whom they plan to conduct their dissertation research; that faculty member will be assigned as primary advisor. Students may also identify and work with co-primary advisors as long as all parties agree to the arrangement. The selection of an advisor should be based primarily on the interest of the student, the expertise that a member of the graduate faculty can provide in the research area, and a willingness by the faculty member to accept the student as a mentee and to provide financial support according to Nutrition Department guidelines. The advisor(s) will help students choose courses appropriate for their specialization, identify a dissertation research topic, and assist in funding.

It is the mentor's responsibility to assist the graduate student in obtaining financial support for dissertation research. If the primary advisor holds a primary appointment in a different department, a faculty member with a primary appointment in Nutrition must be appointed as co-chair of the dissertation committee, except when the faculty member holds a 50% appointment in the Department of Nutrition. When there are co-advisors, the primary nutrition faculty member has the responsibility to convey information about departmental expectations and procedures.

The 3-person mentoring committee. To support the student-advisor relationship and make sure that all doctoral students are adequately prepared to advance in the program, all doctoral students will have an initial pre-dissertation **mentoring committee**. The mentoring committee includes the primary advisor and two additional faculty members to form a 3-person committee. The student is responsible for selecting and engaging members of the committee, guided by advice from the primary advisor. Committee members may meet different mentoring needs. Criteria for selecting mentoring committee members may include expertise in the area of the student's research interest, mentoring experience and style, and ability to provide additional types of support as needed.

The mentoring committee is responsible for reviewing student progress in the program and discussing future plans; identifying and discussing any concerns with an eye toward successful and timely progress in the program; providing feedback on the student's academic year; answering any questions the student might have; hearing the student's assessment of their experience; and discussing overall student well-being. The mentoring committee also serves as the specialization examination committee.

The mentoring committee should be chosen, and the first mentoring meeting should occur in the first semester of study. Subsequent meetings should be held after the Spring semester is competed. Mentoring committee meetings should include the following minimal structure: 1) discussion among committee members without the student; 2) discussion with the student and all members of the committee; and 3) a discussion with two-faculty committee members and the student without the student's primary advisor. At each meeting, the mentoring committee will assess whether the student is progressing well in coursework, research, and student-mentor relationship. To assist in reviewing progress, see ("checklist", link under the PhD section at https://sph.unc.edu/nutr/unc-nutrition/student-life/nutr-degrees/). The checklist should be regularly updated and reviewed with the mentoring committee.

Once a dissertation committee is formed, the mentoring committee will disband or become part of the dissertation committee.

Suggested Milestones for Progression Through the Nutrition PhD Program

(Note that individual paths may vary for many reasons: this is a suggested timeline only:

See Handbook sections for ***Requirements***)

Year	Courses and requirements	Meetings and Paperwork	Research	Other
Year 1 Fall	Full course schedule to meet core and specialization requirements	Form and meet with mentoring committee of 3 early the Fall Declare minor, if applicable	Engage in research with your mentor	
Year 1 Spring	Full course schedule to meet core and specialization requirements	Complete an IDP	Engage in research with your mentor	
Year 1 Summer		Meet with mentoring committee before Fall classes start	Full time research	
Year 2 Fall	Full time course schedule to meet core and specialization requirements		Submit an abstract for presentation at a scientific meeting	Complete TA requirement
Year 2 Spring	Full time course schedule to meet core and specialization requirements	Comprehensive exams at the end of the Spring semester		
Year 2 Summer		Update IDP and Meet with mentoring committee before Fall classes start	Identify dissertation aims	Submit a paper for publication
Year 3 Fall	NUTR 880 and any remaining specialization courses	Form a dissertation committee, submit form	Develop dissertation aims	Complete TA requirement
Year 3 Spring		Meet with dissertation committee	Defend dissertation proposal	
Year 3: Summer		Update IDP and meet with dissertation committee		
Year 4		Update IDP and meet with dissertation committee	Dissertation research: complete at least 1 required paper for the dissertation	Explore postdoc and job possibilities
Year 5		Application for degree, all paperwork for final defense and graduation	Final Defense	Graduate!

Reporting Student Progress

The primary mechanism for monitoring student progress is through the IDP. Each student will complete an IDP and update it annually. The template is available online through http://myidp.sciencecareers.org/. This will become an evolving document that is updated each year to reflect each student's stage in the training program. The IDP is a key part of an ongoing monitoring system to track potential problems in a student's program. Students should submit an updated IDP to their mentoring committee for review prior to each mentoring committee meeting. Following each mentoring committee meeting, a Committee Report Form, updated IDP, and Course Plan should be submitted to the Academic Coordinator. The initial first semester report should be submitted before the end of the Fall semester of the first year. Subsequent reports must be submitted before the fall of the next semester. See the "PhD Mentoring Committee Report Form", link under the PhD section at https://sph.unc.edu/nutr/unc-nutrition/student-life/nutr-degrees/). Additional interim mentoring meetings are encouraged. Once the dissertation committee is formed, the IDP should be reviewed annually with the student's advisor(s), and then be submitted to the Academic Coordinator. The Doctoral Committee will review student progress annually.

The Student/Advisor Relationship

Student/faculty communication is a mutual responsibility. The advisor and mentoring committee serve as the major source of guidance until the dissertation committee has been chosen. A formal mentoring agreement should be developed and signed by the student and faculty advisor prior to or at the beginning of the first semester in the program and then be reviewed annually. The mentoring agreement should be tailored for each student-advisor relationship and type and place of work, and should be reviewed and discussed prior to signing. Mentoring agreements should include expectations about work hours and time off. Frequency of student-advisor meetings should also be established in the mentoring agreement. As a general guideline, students should meet at least monthly with their primary advisor.

Guidance for students may be found at: https://cfe.unc.edu/mentoring/resources-for-graduate-student-mentees/.

For additional information on different types of mentoring agreements, see:

https://ictr.wisc.edu/mentoring/mentoring-compactscontracts-examples/

Any concerns noted by the advisor or committee (mentoring or dissertation committee) should be documented in writing. If a serious concern exists, the committee could meet more often, introduce a mediator, and/or suggest another mentor. If student's progress or mentor's involvement is not satisfactory, the student will be presented with defined milestones and benchmarks to be clearly met to mark progress. The purpose of monitoring is early identification of problems, so that they may be remediated in a timely fashion. Students failing to make adequate progress will be notified and appropriate actions will be made.

As students prepare for their final defense, they should also schedule an exit interview with the Department Chair to take place following completion. The goal of the exit interview is to collect candid feedback from each graduate that will help the department to improve the doctoral program.

Changing Advisors

On rare occasions, a change in the primary advisor may be necessary. Such a change may be initiated by the student or the advisor. When the student desires a change in the research advisor, the student must: a) notify the current research advisor about his/her interest and reasons for making such a change; b) obtain an agreement on funding source; and c) complete a change of mentor form (available from the Academic Coordinator). No change in research mentor can occur without clear communication among the parties involved.

An advisor may wish to terminate that role owing to leaving UNC, retirement, inability to fulfill the advisor role, loss of funding, or because they no longer wish to mentor a student for personal reasons or because the student is not making acceptable progress. In the latter case, when the research mentor suggests such a change, the student must be given written information on the deficiencies noted and be provided sufficient time (at least one semester) to remediate these deficiencies. The notification of deficiencies and student progress toward remediation will be monitored by the Nutrition Department Doctoral Committee. If the student is unable to remediate deficiencies as determined by the research mentor and certified by the Doctoral Committee, the student will be terminated as a PhD student in the Department of Nutrition.

If a research mentor can no longer serve in that role, the student will be offered the opportunity to work with another faculty member but without a guarantee of continuing the original research topic area. If the loss of the research mentor occurred following the first two years of PhD training, funding is not guaranteed.

FINANCIAL SUPPORT

Information about financial support and work for PhD students may be found through the “Funding” link under the PhD section at https://sph.unc.edu/nutr/unc-nutrition/student-life/nutr-degrees/).

General University Academic Information and Policies

Academic Calendar

The Academic Calendar contains important dates, deadlines, holidays, and exams per academic year at the University of North Carolina. Please visit: https://registrar.unc.edu/academic-calendar/.

Course Credit Guidelines

Individual program credit hour requirements are established by the student's academic program and must be satisfied. Doctoral students are required to complete a minimum program residence credit of four full semesters, either by full-time registration, or by part-time registration over several semesters. At least two of the required four semesters of residence must be earned in contiguous registration of no fewer than six credit hours at UNC-Chapel Hill. While summer session registration is not required to maintain consecutive registration, any credits of three to six hours per session will be computed on the usual basis as part of the required two-semester contiguity.

Grading Basis

The University of North Carolina at Chapel Hill's official Explanation of Grading System is located on the Office of the University Registrar's website. Grade points are assigned as outlined in the university Grade definitions.

Transfer Credit

Please refer to the general guidelines for Transferring Course Credit and Doctoral degree guidelines.

Pass/ Fail/ Auditing Courses

The Pass/Fail option provides students an opportunity to enroll in an additional course (beyond the usual load of five academic courses) or to reduce their concerns about competing with prospective majors in a course in which they have considerable interest. Students who declare a course on the Pass/Fail option will receive the grade of PS (pass) when a letter grade of H through L is recorded on the official grade roster and F when the course is failed. For the purpose of computing a grade point average, a PS grade does not count as hours attempted; therefore, a PS grade does not affect a student's grade point average. However, an F under the Pass/Fail option counts as hours attempted and is treated in the same manner as F grades earned in any other course.
Auditing of courses is **permitted only in lecture-based courses** and never in courses that include laboratories or performances. Auditing is not permitted in courses that focus on the development of written or oral communication skills or that rely heavily on class participation.

Registration

Credit Hours

Individual program credit hour requirements are established by the student's academic program and must be satisfied. Doctoral students are required to complete a minimum program residence credit of four full semesters, either by full-time registration, or by part-time registration over several semesters. At least two of the required four semesters of residence must be earned in contiguous registration of no fewer than six credit hours at UNC-Chapel Hill. While summer session registration is not required to maintain consecutive registration, any credits of three to six hours per session will be computed on the usual basis as part of the required two-semester contiguity.

Adding/ Dropping

Changes in course registration schedules should be made during the first five days of classes. During this time, students may **add** courses using the registration system. After the first five days of classes, the addition of a course to a student's registration schedule requires permission of the course instructor or the department concerned.

Students may **drop** courses using the registration system during the first eight weeks. After the eighth week of classes and before the end of the twelfth week of classes, graduate students must obtain a Registration/Drop/Add Form with signatures from their academic adviser or program. Forms should then be sent to The Graduate School for the required Dean's signature.

Withdrawal

An official withdrawal occurs when you, as an enrolled student, decide you must leave the University in a given term Once the term begins and you have attended at least one class. If you must leave, you are required to notify the University through the withdrawal process and then cease attendance in all classes and/or academic activities.

If you withdraw from a fall or spring term and wish to return to UNC-Chapel Hill in a future term, you must submit the Return to Carolina survey. If you withdraw from a summer term, readmission is not required. Contact your Academic Coordinator/ Faculty Mentor or Academic Dean's Office for more information.

Cancellation

A cancellation results in removal of all enrollments for the term. Cancellations are not noted on the permanent record. No tuition or fees are charged, but other charges related to attending the University are the responsibility of the student.

Post-Semester

Course changes after the last day of classes are permitted only in circumstances of documented registration error or technical issues preventing registration changes from occurring within the term. Course changes after the last day of classes for the most recent term must be submitted on a Post-Semester Registration/Drop/Add form available through the student's academic program or the Office of the University Registrar. Appropriate justification, documentation, and approval by the academic program should be attached to the post-semester form prior to submission for processing by The Graduate School.

Grading

Grading Policy

All doctoral programs administered through The Graduate School operate under the same grading system. The graduate grading scale in use at UNC-Chapel Hill is unique in that it cannot be converted to the more traditional ABC grading scale. Graduate students do not carry a numerical GPA.

Grading at the graduate level is intended to offer feedback to students on their performance in a given course, including once students reach the thesis and dissertation stage. Faculty are encouraged to specify course requirements and grading expectations for students. Students enrolled in courses numbered 400 and above must receive one of the following grades.

H High Pass - Clear Excellence
P Pass - Entirely Satisfactory Graduate Work
L Low Pass - Inadequate Graduate Work
F Fail

Grade Changes

Course grades of H, P, L, F, and F* are permanent grades. A permanent grade may be changed upon the initiative of the instructor, only in cases of arithmetic or clerical error, and then only with the approval of the director, chair or dean of the instructor's academic program and of The Graduate School.
Such grade changes may be made no later than the last day of classes of the next succeeding regular semester.

The Graduate School serves as the Dean's Office authorization for University Registrar forms.

Grade Appeals

Appeals should be submitted no later than the last day of classes of the next succeeding fall or spring semester after the course or other official academic decision occurred.

Exams

UNC Exam Schedule
UNC's final exam schedule is listed each term via the Chancellors Calendar.

Academic Eligibility

Under certain circumstances a student will not be allowed to continue in The Graduate School. Registration in following semesters for academically ineligible students will be canceled automatically. A student becomes academically ineligible to continue in The Graduate School for the following reasons:

1. Receives a grade of F, F*, XF, or nine or more hours of L.
   - The computation of hours taken will include courses for which the student has received a grade of H, P, L, or F, as well as equivalent grades for courses taken through inter-institutional registration where other permanent letter grades may be assigned.
   - Undergraduate courses taken as a graduate student will not be included in this computation.
   - If a student completes or withdraws from one academic program and begins study in another academic program, all grades remain part of the permanent record. The grades for any courses to be credited toward the new program will be included in the calculation of academic eligibility.
   - Students may refer to Graduate Grading for a more detailed description of grading policies.

2. Fails a written or oral examination for the second time.
   - Once a student is notified of failing a written or oral exam for the second time, the student automatically becomes ineligible for further graduate work.
   - See Failure of Examination for Doctoral degree.

Tuition and Fees

All students must pay tuition and fees according to the schedule printed in the University Registrar's Calendar unless they qualify for a deferment. Refer to the Office of the University Cashier for current cost of attendance information.

Honors Court

The Honor System forms a bond of trust among students, faculty, and administrators. The University of North Carolina at Chapel Hill operates under a system of self-governance, as students are responsible for governing themselves. As such, our University is transformed into a powerful community of inquiry and learning. The Honor Code embodies the ideals of academic honesty, integrity, and responsible citizenship, and governs the performance of all academic work a student conducts at the University. Acceptance of an offer of admission to Carolina presupposes a commitment to the principles embodied in our century-old tradition of honor and integrity.

Further information on the Honor Code and Honors Court can be found here.

Campus Health Requirements

All new, transfer, and readmitted students (who have not attended UNC-Chapel Hill for the previous two years) must submit a completed immunization record and Medical History Form to Campus Health Services to avoid registration cancellation.

Graduation

It is the responsibility of students to complete and meet the minimum number of courses required for graduation. The School of Public Health holds its own May graduation ceremony, usually in Memorial Hall (with ample room for guests) on Saturday afternoon before the Sunday University-wide graduation. The SPH ceremony is a much smaller and more personal affair, each undergraduate gets to walk across the stage and shake hands individually with the Dean, and there is a reception with light refreshments afterwards in the Atrium of the School of Public Health.