

Academic Policies

2020 -- 2021



Department
of
Epidemiology

Gillings School
of Global
Public Health

University
of
North Carolina
at
Chapel Hill

Advising

Mentoring

Degree Requirements

Learning Objectives

...and more



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INTRODUCTION

[Academic Policies](#) provides comprehensive information on policies and requirements for Master's and Doctoral programs 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.

Gillings Inclusive Excellence Statement

We, the [School's leadership](#), are committed to ensuring that the School is a diverse, inclusive, civil and welcoming community. Diversity and inclusion are central to our mission — to improve public health, promote individual well-being and eliminate health inequities across North Carolina and around the world. Diversity and inclusion are assets that contribute to our strength, excellence and individual and institutional success. We welcome, value and learn from individual differences and perspectives. These include but are not limited to: cultural and racial/ethnic background; country of origin; gender; age; socioeconomic status; physical and learning abilities; physical appearance; religion; political perspective; sexual identity and veteran status. Diversity, inclusiveness and civility are core values we hold, as well as characteristics of the School that we intend to strengthen.

We are committed to expanding diversity and inclusiveness across the School — among faculty, staff, students, on advisory groups, and in our curricula, leadership, policies and practices. We measure diversity and inclusion not only in numbers, but also by the extent to which students, alumni, faculty and staff members perceive the School's environment as welcoming, valuing all individuals and supporting their development.

For more about diversity and inclusion at the School, visit our [Diversity and Inclusion](#) page.

OVERVIEW

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.

Our goals are to:

- Provide the highest quality education to enable scientists and health professionals to advance epidemiology as a discipline and apply their skills to advance scientific knowledge in public and private settings.
- Advance interdisciplinary and multilevel knowledge of health and disease in populations.

- Create and evaluate opportunities to promote health and reduce illness and disability in populations regardless of socioeconomic status. (i.e., a diversity goal).
- Innovate and advance the field of epidemiology through the development of epidemiologic methods.
- Partner with public health agencies to improve the health of populations through the training of public health leaders and the application of epidemiologic knowledge by public health practitioners.
- Improve the health of populations in the State of North Carolina and globally.

Department Organization

The Department of Epidemiology's Chair is Til Stürmer, MD, PhD. Dr. Stephanie Engel is Associate Chair of the department. Department faculty as of August 2020 include 37 tenure track faculty (including 7 jointly appointed) and 27 fixed-term faculty (including 2 jointly appointed). There are 58 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 (PhD/MSCR and MPH) and 2 Graduate Studies (PhD/MSCR and MPH). In addition, there is faculty representation to several SPH committees: IRB, Academic Programs Committee, 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.

QUESTIONS?

Valerie W. Hudock
 Academic Coordinator
 Department of Epidemiology
 2106C McGavran-Greenberg Hall
 (919) 966-7459 vhudock@unc.edu

COURSES OFFERED IN THE DEPARTMENT OF EPIDEMIOLOGY

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

I. METHODS COURSES

- EPID 600: Principles of Epidemiology for Public Health
- EPID 700: SAS and Data Management
- EPID 705: Introduction to Deductive and Probability Logic in Epidemiology
- EPID 710: Fundamentals of Epidemiology
- EPID 711: Clinical Measurement and Evaluation
- EPID 715: Theory and Quantitative Methods in Epidemiology
- EPID 716: Epidemiologic Data Analysis
- EPID 718: Analytic Methods in Observational Epidemiology
- EPID 719: Readings in Epidemiologic Methods
- EPID 722: Advanced Epidemiologic Methods
- EPID 726: Epidemiologic Research Methods
- EPID 731: Systematic Review and Meta-Analysis
- EPID 801: Data Analysis in Oral Epidemiology
- EPID 804: Design of Clinical Research Studies

II. SUBSTANTIVE COURSES

- EPID 625: Injury as a Public Health Problem (cross-listed as HBEH 625/MHCH 625)
- EPID 626: Violence as a Public Health Problem (cross-listed as HBEH 626/MHCH 626)
- EPID 735: Cardiovascular Epidemiology
- EPID 738A: Methods and Applications of Cardiovascular Disease Surveillance
- EPID 738B: Epidemiology of Stroke
- EPID 743: Genetic Epidemiology: Methods and Applications
- EPID 750: Fundamentals of Public Health Surveillance
- EPID 754: Advanced Methods in Infectious Disease Epidemiology
- EPID 755: Introduction to Infectious Disease Epidemiology
- EPID 757: Epidemiology of HIV/AIDS in Developing Countries
- EPID 758: Methods and Principles of Applied Infectious Disease Epidemiology
- EPID 759: Methods in Field Epidemiology
- EPID 760: Vaccine Epidemiology
- EPID 765: Methods and Issues in Pharmacoepidemiology
- EPID 766: Epidemiologic Research with Healthcare Databases
- EPID 770: Cancer Epidemiology and Pathogenesis
- EPID 771: Cancer Epidemiology: Survivorship and Outcomes
- EPID 772: Cancer Prevention and Control (cross-listed as HBEH 765/HPM 765)
- EPID 775: Advanced Cancer Epidemiology: Classic and Contemporary Controversies in Cancer Causation
- EPID 785: Environmental Epidemiology
- EPID 787: Advanced Environmental Epidemiology
- EPID 790: Intervention Epidemiology

EPID 810: Physical Activity Epidemiology and Public Health (cross-listed as NUTR 810)
EPID 813: Nutritional Epidemiology (cross-listed as NUTR 813)
EPID 814: Obesity Epidemiology (cross-listed as NUTR 814)
EPID 815: Diet and Cancer (cross-listed as NUTR 815)
EPID 818: Analytical Methods in Nutritional Epidemiology (cross-listed as NUTR 818)
EPID 826: Introduction to Social Epidemiology
EPID 827: Social Epidemiology: Design and Interpretation
EPID 851: Reproductive and Perinatal Epidemiology (cross-listed as MHCH 851)
EPID 853: Advanced Topics in Perinatal & Pediatric Epidemiology (cross-listed as MHCH 853)

III. SUPPORTING COURSES

EPID 701: R for Epidemiologists
EPID 742: Integrating Biomarkers in Population-Based Research
EPID 795: Data in Public Health

IV. CREDIT SEMINARS

EPID 764: Hospital Epidemiology
EPID 891: Epidemiology Doctoral Seminar
EPID 893: Pharmacoepidemiology Seminar
EPID 894: Infectious Disease Seminar
EPID 895: Seminar in Oral Epidemiology
EPID 897: Advanced Seminar in Cardiovascular Research

V. TUTORIALS AND RESEARCH SECTIONS

EPID 799: Special Studies in Epidemiology
EPID 883: Teaching Experience in Epidemiology
EPID 886: Readings in Epidemiology
EPID 889: Topics in Epidemiology Seminar
EPID 900: Epidemiology Practice
EPID 905L: Epidemiology Laboratory Practice
EPID 910: Research in Epidemiology
EPID 992: Master's (Non-thesis)
EPID 994: Doctoral Research and Dissertation

VI. STUDENT RECOMMENDED NON-EPID COURSES

BIOL 445 Cancer Biology
BIOS 511 Introduction to statistical Computing and Data Management
BIOS 664 Sample Survey Methodology
BIOS 665 Analysis of Categorical Data
BIOS 667 Applied Longitudinal Data Analysis
BIOS 767 Longitudinal Data Analysis
DPOP 806 Pharmaceutical Policy
ENVR 468 Advanced Functions of Temporal GIS
GEOG 541 GIS in Public Health
GRAD 704 Effective Presentation Skills
GRAD 810 Communication in the American Classroom

HBEH 753 Qualitative Research Methods
HBEH 815/6 Foundations of Health Behavior I and II
HPM 757 Health Reform: Political Dynamics and Policy Dilemma
HPM 890 Pharmaceutical Industry
JOMC 560 Medical and Science Journalism
MBA 822 Negotiations
PATH 713/714L Molecular and Cellular Pathophysiological Basis of Disease:
Mechanisms of Disease
PATH 715/716L Molecular and Cellular Pathophysiological Basis of Disease: Systemic
Pathology
PLAN 491 Introduction to GIS
PSYC 846 Multilevel Modeling
PUBH 741/2 Quantitative Methods for Health Care Professionals I and II
SOC1 717 Structural Equations with Latent Variables
SOWO 917 Longitudinal and Multilevel Data Analysis

INDEPENDENT STUDY, INDEPENDENT RESEARCH, AND LAB PRACTICE REGISTRATION:

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.

INFORMATION RELEVANT TO ALL EPIDEMIOLOGY STUDENTS

DEPARTMENTAL COMMUNICATION

Student Email Accounts

Much of the communication between students and the Student Services Office, faculty and other offices/individuals on campus will be through email. Each student is provided with a departmental email account upon enrollment. These email addresses are made available to UNC faculty, staff and other students. Frequently, students have other email accounts on campus and elsewhere; however, you should be aware that **your UNC account is the one that will be used for communications from faculty and staff.**

Communications to the entire list of students will take place via an email listserv. The address for sending messages to this list is: epidstudents@unc.edu.

Since UNC email is the primary mode of communicating information to students, it is imperative that your email be checked regularly. Students are held responsible for information disseminated via email, including summers and holidays.

Listservs (electronic mailing lists)

A few other listservs are available for student use. Within the EPID department, job announcements for research and teaching assistantships are sent to the "epidjobs" listserv. Incoming doctoral students are automatically subscribed to this listserv so that they will be aware of opportunities.

Information on seminars, workshops and doctoral defenses is disseminated via the "epidsems" listserv. All incoming students are automatically subscribed to the "epidstudents" and "epidsems" listservs. Details on the listservs can be found on the department's website.

THE ADVISING AND MENTORING PROCESS

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 Mentors

Once the student identifies a new faculty member who is willing to serve as mentor, the student asks the faculty member to sign a **Mentor Assignment/Change form** (available on the Epidemiology Student Resources site on Sakai) indicating that s/he has 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 the current mentor. If for any reason the student is not comfortable doing this, s/he 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:

- preferred method of communication (telephone, email, walk-in, sign-up at door, schedule appointment with secretary)
- frequency of meetings
- responsibility for initiation of meetings
- how the mentor will communicate which of his/her suggestions are recommendations and which are requirements
- 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)
- who will be responsible for ensuring that the student has met all degree requirements
- to what extent the mentor will assist in identifying funding opportunities
- to what extent the mentor will assist in identifying master's paper and/or dissertation topics
- what the mentee's expectations are in terms of faculty involvement in identifying topics and funding opportunities
- 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.)
- how often the student and mentor should meet to assess the student's progress, and in what manner that assessment will be made
- 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

For information about online course listing and registering for classes, please refer to the Office of the Registrar website at registrar.unc.edu/. The following section highlights questions frequently asked of Student Affairs.

Dropping Courses

Graduate students may drop courses using the registration system during the first two weeks of classes. After the second week of classes and before the end of the twelfth week of classes, graduate students must obtain a Registration/Drop/Add Form from the Academic Coordinator (see the University Registrar's Calendar for the Last Day for Graduate Students to drop courses). The Academic Coordinator will sign off as the advisor. Registration changes requested after the last day for graduate students to drop courses require approval of the Graduate School.

Important: Students receiving tuition awards must remain in the same tuition credit bracket (0-2.9; 3-5.9; 6-8.9; 9 or more) throughout the semester. Any registration changes after the “last day to add” may result in a tuition change that is not covered by the in-state tuition award. Consult with the Academic Coordinator before making changes.

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 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 time line 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, 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 his/her 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 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:

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

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

INFORMATION SPECIFIC TO MSCR DEGREE STUDENTS

COMPETENCIES FOR THE MSCR

The MSCR program is an interdisciplinary research degree program housed within the Department of Epidemiology in the Gillings School of Global Public Health. The program is designed to develop the skills necessary for a successful career as a principal investigator and collaborator in clinical research. Competencies guide our curriculum planning process and serve as a measure against which student achievement is assessed. Listed below are the degree-specific competencies for the MSCR program:

- 1) Clinical research study design: Identify testable research hypotheses; develop appropriate study designs with minimal bias; identify appropriate target populations.
- 2) Fundamentals of data analysis: Develop appropriate data analysis plans for research hypotheses; implement basic statistical analyses including multivariable regression; understand sample size and power calculations.
- 3) Grant proposal development: Develop a proposal for clinical/translational research suitable for submission to the National Institutes of Health or research foundation.
- 4) Interdisciplinary collaboration: Develop skills for collaboration with research methodologists, including biostatisticians, and for working in teams (team science).
- 5) Project oversight and management: Training in skills needed to implement a research project, including hiring of appropriate team members, developing and managing budget, overseeing project, ethics approvals, and regulatory reviews.
- 6) Oral and written presentation: Effectively present research findings orally to peers, lay persons, and the media; Write clearly and succinctly for scientific publication and research proposals.
- 7) Professional development: Demonstrate knowledge of the academic research environment, sources of research support, and professional advancement. Demonstrate the use of strategies to improve professional effectiveness, such as time management, leadership skills, and management skills.

STUDENTS

The program is designed for persons planning a career as a clinical or translational investigator who will assume leadership roles in research projects and research teams. Applicants must have completed training in a primary substantive research or clinical area. The MSCR is intended to complement the substantive training in these primary substantive areas.

Applicants must have a doctoral level professional degree (M.D., Pharm.D., Ph.D., D.D.S., nurses with Ph.D., D.V.M. etc.) or extensive health professions experience (R.N.'s, P.A.'s). At the time of enrollment in the MSCR, participants will simultaneously be residents, clinical fellows, post-doctoral fellows, or junior faculty at UNC or Duke University. We anticipate that each student will already be affiliated with a "home academic program", reflecting the funding source (e.g. T32 or K12 funding), training program (e.g. post-doctoral fellowship) or department.

DESCRIPTION OF THE PROGRAM

The program is designed to be completed over 2 academic years. **The program requires a minimum of 36 credit hours** and is consistent with requirements in the Department of Epidemiology. Students must be registered for classes in a minimum of three semesters.

The program is intended for a broad range of clinical and translational researchers. Core courses in the curriculum will address issues pertinent to all areas of clinical and translational research.

Students are required to take 3 credit hours from among the substantive courses offered by the department's various program areas (i.e., pharmacoepidemiology, infectious disease epidemiology, cardiovascular epidemiology, injury epidemiology, etc.). In addition, MSCR students enroll in 7 credit hours of electives from any existing Gillings School of Global Public Health graduate level courses. Students interested in substituting a graduate level course outside of the Gillings School toward this 7-credit total should send an email request to the Academic Coordinator for review by the MSCR Program Director for consideration of approval. Please include the course syllabus with the request.

The program will rely heavily on experiential learning, in addition to didactic sessions. Assignments in the core courses will be geared toward practical study-related issues. Whenever possible, large classes will include small group sessions to provide greater opportunity for faculty interaction.

The program requires two significant products for the MSCR degree. A Masters Paper will be required of all students. The paper will be original work in the form of primary data collection and analysis, secondary data analysis, or systematic review (or meta-analysis) of previously conducted studies. The Masters Paper will be supervised by the student's mentor from their clinical or research program and a mentor in the Department of Epidemiology. Content of Master's Papers will be approved by the epidemiology faculty mentor. The Master's Paper is expected to be of publication quality (and not published) at the time of completion.

In addition to the Master's Paper, students will be expected to complete a grant proposal targeted to an NIH or foundation funding source. The proposal may be for a career development award or an investigator-initiated research grant. The research proposal will be developed within the context of EPID 726.

Clinical and translational research is conducted in multidisciplinary, collaborative teams. The program is designed to give these future investigators the skills to succeed in the current environment of clinical and translational research. Collaboration will be fostered through formal and informal group exercises, peer review of colleagues' work, and group discussions of ongoing research. Participants will develop the skills to design sophisticated clinical and translational research studies, in combination with the skills to conduct and lead the research projects.

Mentors and Academic Advisor

In addition to the designated mentor in the Department of Epidemiology, all participants in the MSCR program are to have mentor(s) in their home departments or training programs (e.g. their clinical department, research department, or other program). At least one mentor must have experience in clinical research. We will involve the mentors directly in the student's training,

namely in the grant writing course (EPID 726) and the Master's Paper. For example, in EPID 726, mentors will be expected to give meaningful feedback on the proposals as they are being developed, along with the advice and guidance of the course faculty. An established mentor relationship will be a requirement for enrollment in EPID 726.

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

SUMMARY OF DEGREE REQUIREMENTS AND SCHEDULE FOR THE MSCR

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

Degree Requirements

Course #	Course name	Credits	Academic Term
Public Health Foundational Knowledge		3	
SPHG 600	Introduction to Public Health	3	Fall 1, 2, Summer
MSCR Core		20	
EPID 711	Clinical Measurement/Evaluation	3	Fall 1
PUBH 741	Quantitative Methods for Healthcare Professionals I	4	Fall 1
EPID 804	Design of Clinical Research	4	Spring 1
PUBH 742	Quantitative Methods 2 for Healthcare Professionals	4	Spring 1
EPID 726	Epidemiology Research Methods	3	Fall 2
EPID 790	Intervention Epidemiology	2	Fall 2
MSCR Electives		10	
EPID ###	Any substantive epidemiology course ³ of at least 3 credits	3	Any term
	Any SPH graduate level courses, or approved graduate level courses	7	Any term
MSCR Milestone 1: Comprehensive Examination			
	MSCR Comprehensive examination		April, Year 1, 2
MSCR Milestone 2: Thesis or approved substitute		3	
EPID 992	Master's paper development, submission, and assessment	3	Final Term
MSCR Degree Total		36	

Sample Schedule

Course #	Course name	Credits	Academic Term	Degree Requirement
EPID 711	Clinical Measurement/Evaluation	3	Fall 1	Core
PUBH 741	Quantitative Methods for Healthcare Professionals I	4	Fall 1	Core
SPHG 600	Introduction to Public Health	3	Fall/Spring 1 Summer	Public Health Found. Know.
Semester 1 Subtotal		10		
EPID 804	Design of Clinical Research	4	Spring 1	Core
PUBH 742	Quantitative Methods 2 for Healthcare Professionals	4	Spring 1	Core
	Any SPH graduate level course, or approved graduate level course	3	Spring 1	Elective
Semester 2 Subtotal		11		
EPID 726	Epidemiology Research Methods	3	Fall 2	Core
EPID 790	Intervention Epidemiology	2	Fall 2	Core
EPID ###	Any substantive epidemiology course ³ of at least 3 credits	3	Fall 2	Elective
	Any SPH graduate level course, or approved graduate level course	1-3	Fall 2	Elective
Semester 3 Subtotal		9-11		
	Any SPH graduate level course, or approved graduate level course	3	Spring 2	Elective
EPID 992	Master's paper development, submission, and assessment	3	Spring 2	Master's paper
Semester 4 Subtotal		6		
MSCR Degree Total		36		

RESEARCH GRANT PROPOSAL

All MSCR students are required to complete a research grant proposal. This proposal may be for a career development award or an investigator-initiated research grant. Most proposals will be in the form of an NIH grant. However, foundation grant proposals are also acceptable. Although not a formal requirement of the program, it is strongly encouraged that the research grant proposals are submitted to a funding agency. The research proposal will be developed in the context of EPID 726.

THE MASTER'S COMPREHENSIVE EXAMINATION

The Master's Comprehensive Examination is a formal requirement of the Graduate School and is covered by the campus Honor Code. The student must be enrolled at the time of the examination.

Purpose:

The MSCR Comprehensive Examination is intended to provide an opportunity to demonstrate mastery of basic clinical research concepts and methods and to diagnose any major areas of deficiency. A passing score of 70% on the examination is a requirement for the MSCR degree.

Timing:

The Master's Comprehensive Examination is offered in the spring of each year. For the 2020-2021 academic year, the exam is **tentatively** set to be distributed on **April 22, 2021 at 9:00 am and be due on April 27, 2021 by 5:00 pm**. Generally, students are expected to complete the examination at the end of their first year of study.

Format:

The examination is offered as a take home examination. Students may use textbooks and class notes in completing the examination.

Report of Outcome

Within 2 weeks of the examination, notification of the outcome is communicated to the student by the MSCR Comprehensive Examination Committee of the Graduate Studies Committee.

A student who fails 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 MSCR Comprehensive 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. Unless a different timing is recommended by the Graduate Studies Committee, the student must obtain a grade of Pass the next time MSCR Comprehensive Examination is offered in order to remain in the master's 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 MASTER'S PAPER

The master's paper is a thesis substitute and is a major requirement for the MCSR degree. 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. Students are challenged to apply their clinical research training to a specific issue and to demonstrate scientific writing skills.

The paper is filed with the Academic Coordinator and is available for student and faculty reference.

While work on the master's paper may progress over multiple semesters, the final paper, associated master's paper hours (EPID 992) with epidemiology faculty mentor, and accompanying documentation should be submitted in the semester the student is completing the degree requirements. **No further degree coursework is permissible after the submission of the master's paper.**

Master's Paper Committee

Development of the master's paper is supervised by a committee consisting of a master's paper epidemiology faculty mentor and a second reader (usually the substantive mentor from the student's home department or program).

Content and Form of the Master's Paper

In carrying out the project, the student will be expected to select a scientifically relevant, feasible topic; review the medical literature; formulate an informative study question; and complete the relevant data analysis to address the study question. Master's papers may address a wide variety of clinical issues, from pharmacokinetics to health behavior, depending on the student's needs and interests. Formalized systematic reviews and meta-analyses are acceptable as Master's papers. Submission of the Master's paper for publication is expected, but not a formal

requirement. The topic and format of the master's paper should be approved by the epidemiology faculty mentor and the substantive mentor.

Following approval of the final version by the two committee members, the completed master's paper is submitted to the Department as a scientific report formatted as a manuscript for publication. The Master's paper also requires a specific cover page and binding.

Identifying a Master's Paper Topic

Selecting an appropriate topic can sometimes be a stumbling block for students. Although the epidemiology faculty and substantive mentors will assist in topic identification, it is the student's responsibility to initiate the process by offering some preliminary ideas.

Human Subjects Review

Please refer to section relevant to all students for specific IRB training requirements [above](#).

All proposed master's paper research must be submitted to the Public Health or Biomedical Institutional Review Board (IRB) as soon as the project has been approved by the mentor and reader (see above). This applies to all master paper proposals, whether sponsored or not sponsored. Since the master's paper 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.

Please note that even if a research activity has been approved previously, whether at UNC or elsewhere, specific IRB approval for the Master's paper must be obtained.

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. (Refer to Appendix VIII.) Registration of Master's paper 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.

Upon receipt of IRB exemption or 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. In addition, the title page of the master's paper must reflect the date of IRB approval (or exemption).**

See web site at ohre.unc.edu.

Data Use Agreements

If data are used for the master's paper that are not publicly available, the IRB and the Department require a data use agreement. A sample form is available on the Epidemiology Student Resources site on Sakai. This form should be signed by the Principal Investigator of the study that provides access to the data, or the person legally authorized to release it.

Typical Schedule for Completing the Master's Paper

Sufficient time should be allowed for the following:

- approval of the topic and format of the paper
- a thorough first review of the entire paper by both committee members;
- revision time required by the student;
- a second review by the committee members, at least three weeks prior to anticipated date for final approval of the complete, revised Master's paper, to permit final modifications that may be requested.

In preparing this schedule, the student should note Graduate School deadlines for the desired graduation date. Note that the master's paper is due BEFORE the end of the semester in which you plan to graduate. See registrar.unc.edu/academic-calendar/.

Format and Submission of the Master's Paper

The master's paper is not a thesis, but rather a "thesis substitute." Thus, many of the formal Graduate School thesis requirements do not apply. Specifically, there is no final oral examination or defense of the master's paper, and the paper itself is not filed with the Graduate School.

- **Formatting Guidelines:** Use Arial or Times New Roman font; use a type size of 11 or 12; page numbers centered on the bottom of the page in a footer; margins of left margin of at least 1¼ inch; other margins at least one inch. The Graduate Schools handbook, "A Guide to the Preparation and Submission of Theses and Dissertations," does not apply since this is not a formal thesis.
- The cover of the paper must be labeled with the student's name and the title of the paper. Students need to follow the exact format of the sample cover page found on the Epidemiology Student Resources site on Sakai.
- **Funding sources should be acknowledged on the title page in a statement such as: "This research was supported in part by a grant from [name of institution]." Disclosure statements must also be added within the document, as applicable to potential conflicts of interest related to individual authors' commitments and project support. If there are none, this should be specified, e.g., "the author(s) have no conflicts to declare."**
- **One copy of the Master's paper is submitted to the Academic Coordinator** in accordance with the University schedule. This is the official copy and must carry the signatures of both members of the student's master's committee on the title page, as well as date of IRB approval. Copies of the final paper are also given to the members of the student's committee, if desired.

- Once the master's paper is complete, a "Report of Approved Substitute for Master's Thesis" form must also be filed with the Academic Coordinator. Please see the "Master's Paper Report" section below.

Students must be registered for 3 credit hours of EPID 992 (with their epidemiology faculty mentor) at the time the master's paper is turned in. Students should not submit their master's papers until the semester they are completing all degree coursework and are planning to graduate.

Master's papers are kept in EPID Student Services and are available to students and faculty for reference.

Master's Paper Report

When the master's paper has been completed and approved by the student's committee, a "Report of Approved Substitute for a Master's Thesis" must be completed by the student and signed by the mentor. **This report completes the student's master's degree program and must be submitted to the Academic Coordinator along with the final, signed, and bound copy of the Master's Paper.** This form can be found at: <http://gradschool.unc.edu/forms/>. It is filed with the Graduate School and verifies completion of this requirement. **The report and paper should be submitted during the student's last semester.**

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.

QUESTIONS

Questions related to curriculum aspects of the program should be directed to Dr. Wayne Rosamond, MSCR Program Leader, wayne_rosamond@unc.edu. Questions related to administrative aspects of the program should be addressed to the Academic Coordinator, Valerie Hudock, vhudock@unc.edu.

INFORMATION SPECIFIC TO DOCTORAL DEGREE STUDENTS

COMPETENCIES FOR THE PhD

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, 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 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, 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 needs and concerns)
6. Understanding how epidemiological research relates to improving population health.
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.

SUMMARY OF DEGREE REQUIREMENTS/SCHEDULES/TIMELINES FOR THE PhD

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 705: Introduction to Logic and Probability Logic in Epidemiology
- EPID 710: Fundamentals of Epidemiology [EPID 711 may be substituted by clinicians]
- 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/FLO: 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 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, etc., or SOWO 917 or SOCI 717). 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.

Options for Satisfying the Teaching Requirement

Many of the TA opportunities are for 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 or EPID 711/PUBH 760 (the introductory level courses for majors), or EPID 715/716, 718, or 722. 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 for satisfying the teaching requirement are: EPID 759, EPID 790, PUBH 741, and PUBH 742.

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 s/he 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

The Intradepartmental Review (IDR) is a planning session, bringing together the student and key faculty members in his or her research area for review of the student's progress and to plan the remainder of the work. The IDR is scheduled at a time when the student has completed most or all coursework and has decided on a dissertation area. Typically, PhD students should have completed the IDR prior to their 4th academic year.

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 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.

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:

- (1) the degree of sophistication of the student's knowledge base in the study area,
- (2) his/her awareness of a salient area of research, reflecting familiarity with the current literature,
- (3) the student's ability to apply epidemiologic methods to a topical issue in the study area, and
- (4) 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 will be offered in early May 2021 (registration deadline April 8) for the 2020-21 academic year. 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 during the fall semester (late September or early October). Special interest area examinations (i.e., genetic, physical activity, etc.) are also scheduled at that time. **For the 2020-2021 academic year, substantive exams are scheduled for September 24-28, 2020. The registration deadline was June 5, 2020.** [Registration for the 2021 substantive exams (held in Fall 2021) will be opened in May 2021.] 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 feed-back 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*. Third edition. Philadelphia: Lippincott Williams & Wilkins, 2008. 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, 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

Please refer to section relevant to all students for specific IRB training requirements [above](#).

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 not 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 web site 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 at least on 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 sph.unc.edu/epid/epid-policies-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.

THE 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.

To reserve the EPID conference room, email Chandra Caldwell at ccaldwel@email.unc.edu.
To reserve a room in the SPH, go to sph.unc.edu/rooms

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.

RESEARCH PROGRAM AREA LEARNING

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.”

Be sure to consult the guidelines relevant to your focus/research area!