DEPARTMENT OF EPIDEMIOLOGY (GRAD)

The Department of Epidemiology, which is housed in the Gillings School of Global Public Health, is one of the world’s leading academic departments in epidemiology. Renowned faculty members provide students with training in effective research practices and methods. The department conducts innovative research and provides classroom and real-world educational interdisciplinary opportunities that emphasize the integration of substantive area knowledge and cutting-edge epidemiologic methods. It also works with students to apply their epidemiology research to a variety of health problems in North Carolina and across the world. Research resources include diverse studies of disease endpoints (cancer, cardiovascular, infectious disease, injury, and reproductive/perinatal/pediatric epidemiology) and factors and methods that impact patterns of disease and population health (environmental, occupational, pharmacoepidemiology, genetic, social, and methods).

Degrees and Certificates

The Department of Epidemiology offers a master’s degree and a doctoral degree, and cosponsors a certificate. The master’s and doctoral programs offer a body of research skills together with the opportunity to work closely with faculty on key research questions, and to share the challenge and rewards that epidemiology provides.

Master of Science in Clinical Research (M.S.C.R.)

The M.S.C.R. 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 for physician-scientists and others who want to develop the skills necessary for a successful career as a principal investigator and collaborator in clinical and translational research. The M.S.C.R. requires a minimum of 36 semester hours of credit and is designed as a two-year program with at least two full semesters in residence. The program may be completed on either a part-time or full-time basis.

Those in the M.S.C.R. program 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 M.S.C.R., 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.

Doctor of Philosophy (Ph.D.)

The doctor of philosophy (Ph.D.) in epidemiology prepares students for careers in research and teaching, often at a university, federal, or state agency, or private research institution. Students develop research and teaching skills in epidemiology through coursework and practice opportunities. The doctoral program includes coursework, preliminary doctoral examinations, and doctoral research. Students typically complete the doctorate in three to five years after admission.

Certificate in Field Epidemiology

The Certificate in Field Epidemiology (http://sph.unc.edu/phlp/phlp-degrees-and-certificates/certificate-in-field-epidemiology/) is cosponsored by the Department of Epidemiology and the Public Health Leadership Program. The program is specifically designed for working practitioners and emphasizes practical, applied skills.

Following the faculty member’s name is a section number that students should use when registering for independent studies, reading, research, and thesis and dissertation courses with that particular professor.

Distinguished Professors

Adaora Adimora (241), Infectious Disease Epidemiology
Ralph S. Baric (142), Public Health Virology, Molecular Virology
Myron “Mike” Cohen, Infectious Disease Epidemiology
Michael Emch (234), Spatial Epidemiology, Medical Geography, Infectious Diseases, Neighborhoods and Health
Bradley Gaynes, Psychiatric Epidemiology
David M. Margolis (220), Infectious Disease Epidemiology
Andrew F. Olshan (147), Cancer Epidemiology, Reproductive/Perinatal Epidemiology
Robert S. Sandler (73), Cancer Epidemiology, Gastrointestinal Epidemiology
H. June Stevens (172), Nutritional Epidemiology, Obesity Epidemiology
Til Stürmer (224), Pharmacoepidemiology, Methodology
David J. Weber (96), Infectious Disease Epidemiology

Professors

Stephen R. Cole (225), Methodology, Infectious Disease Epidemiology
Julie Daniels (206), Environmental Epidemiology, Reproductive/Perinatal/Pediatric Epidemiology
Lawrence Engel (232), Environmental Epidemiology, Cancer Epidemiology
Stephanie Engel (231), Reproductive/Perinatal Epidemiology, Environmental Epidemiology
Jonathan Juliano, Molecular Epidemiology and Genetics of Malaria
Justin Lessler (255), Infectious Disease Epidemiology, Methodology
Stephen W. Marshall (199), Injury Epidemiology, Methodology
Kari North (205), Cardiovascular Epidemiology, Genetic Epidemiology
Brian W. Pence (236), Infectious Disease Epidemiology, Mental Health Epidemiology, Implementation Science Research, Quantitative Epidemiologic Methods
Audrey Pettifor (215), Infectious Disease Epidemiology
Wayne D. Rosamond (162), Cardiovascular Epidemiology
Jennifer S. Smith (212), Infectious Disease Epidemiology, Cancer Epidemiology
Melissa A. Troester (226), Cancer Epidemiology
Daniel J. Westreich (235), Infectious Disease Epidemiology, Methodology, Reproductive and Perinatal Epidemiology, Pharmacoepidemiology

Associate Professors

Christy L. Avery (233), Cardiovascular Epidemiology, Genetic Epidemiology
Jessie Edwards (247), Infectious Disease Epidemiology, Methodology, Global Health
Emily Gower (243), Ocular Epidemiology, Infectious Disease Epidemiology
Michele Jönsson Funk (216), Pharmacoepidemiology, Women's Health
Jennifer L. Lund (238), Cancer Survivorship and Outcomes, Pharmacoepidemiology, Healthcare Database Utilization
Joanna “Asia” Maselko (242), Social Epidemiology, Mental Health Epidemiology
Hazel B. Nichols (239), Cancer Epidemiology, Women’s Health
Charles L. Poole (193), Methodology
Kimberly A. Powers (237), Infectious Disease Epidemiology, Global Health
Caroline Thompson (253), Cancer Epidemiology
Assistant Professors
Ross Boyce, Infectious Disease
Lisa Gralinsky, Public Health Virology, Infectious Disease Epidemiology
Juan Hincapie-Castillo (249), Pharmacoepidemiology, Legal Epidemiology, Health Services Research
Chantel Martin (250), Social Epidemiology
Shabbar Ranapurwala (254), Injury Epidemiology
Timothy Sheahan, Public Health Virology, Infectious Disease Epidemiology, Genetic Epidemiology
Mollie Wood (248), Pharmacoepidemiology

Research Professors
Kelly R. Evenson (209), Cardiovascular Epidemiology, Physical Activity
Nora Franceschini, Cardiovascular Epidemiology
Eric A. Whitsel (221), Cardiovascular Epidemiology

Research Associate Professors
Sylvia Becker-Dreps (246), Evaluation of Immunization Programs, Rotavirus Vaccines, Pneumococcal Vaccines
Jeanette Bensen, Cancer Epidemiology, Molecular Epidemiology
Kathleen C. Dorsey, Cancer Epidemiology
Mariaelisa Graff, Genetic Epidemiology
Sonia Napravnik (223), Infectious Disease Epidemiology

Research Assistant Professors
Christopher Baggett, Chronic Disease Epidemiology
Eboney Butler, Cancer Epidemiology
Tania Desrosiers, Reproductive/Perinatal Epidemiology, Birth Defects
Bethany DiPrete, Infectious Disease Epidemiology
Andrew Edmonds, Infectious Disease Epidemiology
Marc Emerson (251), Cancer Epidemiology
Rachel Graham, Public Health Virology, Molecular Virology
Heather Highland, Genetic Epidemiology
Anna Kucharska-Newton, Cardiovascular Epidemiology
Sara Levintow, Infectious Disease Epidemiology, Methodology
Rebecca Naumann (252), Injury Epidemiology
Alexandra Schaefer, Infectious Disease Epidemiology
Anne Starling, Environmental Epidemiology, Chronic Disease Epidemiology, Infectious Disease Epidemiology
Anissa Vines (245), Social Epidemiology, Health Care Epidemiology
Sharon S. Wei, Infectious Disease Epidemiology
Kristin Young, Genetic Epidemiology, Health Disparities, Obesity Epidemiology

Clinical Professors
Timothy S. Carey (138), Clinical Epidemiology
David F. Ransohoff (160), Health Care Epidemiology
Ross Simpson Jr., Cardiovascular Epidemiology, Clinical Epidemiology
Ronald Strauss, Dental Epidemiology, Social Impacts

Clinical Associate Professors
Lorraine Alexander, Public Health Preparedness, Distance Education
Mary "Bonnie" Rogers (187), Occupational Epidemiology
Karín Yeatts, Applied Epidemiology, Environmental Epidemiology
Patricia Basta, Cancer Epidemiology

Adjunct Professors
Sara Berkeley, Cardiovascular Epidemiology

Donna D. Baird (104), Reproductive Epidemiology
Douglas Bell, Cancer Epidemiology
Wendy Brewster, Women's Health
Jane H. Brice, Clinical Epidemiology, Cardiovascular Epidemiology
Donald Budenz, Ocular Epidemiology
Leigh Callahan, Chronic Disease Epidemiology, Health Care Epidemiology
Patricia Chang, Cardiovascular Epidemiology
Benjamin H. Chi, Clinical Epidemiology, Global Health, Reproductive Health

Dennis A. Clements (152), Infectious Disease Epidemiology
Evan Dellen, Health Care Epidemiology
John Dement, Environmental Epidemiology, Occupational Epidemiology
Nancy Dreyer, Pharmacoepidemiology
Jeffrey Engel, Infectious Disease Epidemiology
Joseph Eron Jr., Infectious Disease Epidemiology
Aaron Fleischauer, Applied Epidemiology, Surveillance, Preparedness and Response
Robert Fletcher (45), Health Care Epidemiology
Suzanne Fletcher (46), Health Care Epidemiology
Alicia Gilson, Pharmacoepidemiology
Cynthia Girman, Pharmacoepidemiology
Laura Hanson, Clinical Epidemiology, Geriatrics
Louise Henderson, Health Services Research, Cancer Epidemiology
Jane Hoppin, Environmental Epidemiology
Michael Kappelman, Clinical Epidemiology, Pharmacoepidemiology
Jay Kaufman, Methodology, Social Epidemiology
Stephen Kritchevsky, Aging Epidemiology
Jay Levine, Veterinary Epidemiology
Stephanie London, Cancer Epidemiology
Matthew Longnecker, Environmental and Occupational Epidemiology
Dana P. Loomis, Environmental and Occupational Epidemiology
Timothy Mastro, Infectious Disease Epidemiology
Prema Menezes, Environmental and Occupational Epidemiology
William Miller, Infectious Disease Epidemiology, Clinical Epidemiology
David Peden, Environmental and Occupational Epidemiology
Miguel Porta, Cancer Epidemiology, Clinical Epidemiology, Pharmacoepidemiology
Dale Sandler (90), Environmental Epidemiology
Arlene Sema-Sobrano, Infectious Disease Epidemiology
Nicholas Shaheen, Health Care Epidemiology
Mark Sherman, Molecular Epidemiology, Cancer Epidemiology
Ilene C. Siegel (148), Aging
Gary Slade, Oral Epidemiology
Betsy Sleath, Pharmacoepidemiology, Outcomes Research
Jeffrey S. A. Stringer, Global Women's Health, HIV/AIDS in Women, Child Health
Jack A. Taylor, Environmental and Occupational Epidemiology
John Thorp Jr., Reproductive Epidemiology
Hugh H. Tilson (87), Pharmacoepidemiology
Anthony J. Viera, Hypertension, Cardiovascular Disease Prevention
Clarice Weinberg, Environmental and Reproductive Epidemiology
Allen J. Wilcox (61), Reproductive Epidemiology
David Wohl, Infectious Disease Epidemiology

Adjunct Associate Professors
Deverick Anderson, Health Care Epidemiology, Infection Prevention
Elizabeth B. Andrews (140), Pharmacoepidemiology
Kimon Divaris, Oral Epidemiology
Alan Ellis, Health Services Research, Mental Health Services Research
Sara Ephross, Chronic Disease Epidemiology
Virginia Guidry, Environmental and Occupational Epidemiology
Debra E. Irwin (176), Cancer Epidemiology, Reproductive Epidemiology
James Bradley Layton, Pharmacoepidemiology, Comparative Effectiveness Research
Thomas Luben, Environmental Epidemiology, Adverse Reproductive Outcomes
Pia MacDonald, Applied Epidemiology
Christina Mack, Pharmacoepidemiology, Comparative Effectiveness Research
Anne-Marie Meyer, Outcome Research, Comparative Effectiveness Research
Michelle Meyer, Cardiovascular, Epidemiology
David Miller, Pharmacoepidemiology, Molecular Epidemiology
Lucas Neas, Environmental Epidemiology
Amanda Nelson, Osteoarthritis
Matthew E. Nielsen, Clinical Epidemiology and Health Services, Cancer Outcomes
David Rosen, Social Epidemiology, Criminal Justice/Incarceration
Paul E. Stang (163), Chronic Disease Epidemiology
Vani Vannappagari, Infectious Disease Epidemiology
Emily Vavalle, Infectious Disease Epidemiology
Timothy Wade, Environmental Epidemiology
Emmanuel Walter, Infectious Disease Epidemiology
Suzanne West (207), Health Care Epidemiology, Pharmacoepidemiology
Jose Zevallos, Cancer Epidemiology

Adjunct Assistant Professors

Emily Bratton, Infectious Disease Epidemiology, Pharmacoepidemiology, Cancer Epidemiology
Alexander Breskin, Epidemiologic Methods, Pharmacoepidemiology, HIV
Remy Coeytaux, Health Care Epidemiology
Kourtney Davis, Pharmacoepidemiology
Jennifer Deese, Infectious Disease, Epidemiology
Mohamed El Hag Ahmed, Environmental/Occupational Epidemiology, Injury Epidemiology
Lydia Feinstein, Psychosocial Determinants of Health, Health Disparities in Aging
Kelly Ferguson, Reproductive Epidemiology, Environmental Epidemiology
Lindsay Fernandez-Rhodes, Genetic Epidemiology, Social Epidemiology
Mugdha Gokhale, Pharmacoepidemiology, Comparative Effectiveness Research
Christine Gray, Social Epidemiology, Environmental Epidemiology
Quaker Harmon, Reproductive and Perinatal Epidemiology
Chandra Jackson, Social and Environmental Determinants of Health Equity
Anne Jukic, Reproductive Epidemiology
James Lewis, Infectious Disease Epidemiology
Ann M. McNeil, Cardiovascular Epidemiology
Victoria Mobley, Infectious Disease Epidemiology
Keri Monda, Genetics, Obesity Epidemiology
Sarah Nyante, Cancer Epidemiology, Molecular Epidemiology
Priya Palta, Cardiovascular Epidemiology, Aging
Scott Proescholdbell, Injury Epidemiology
Erika Samoff, Infectious Disease Epidemiology
Markus Steiner, Methodology
Lee Stoner, Cardiovascular Epidemiology
Steve M. Taylor, Malaria, Tropical Disease Epidemiology, Hemoglobin Disorders
Michael Udedi, Global Mental Health Research

Andres Villaveces, Injury Epidemiology
Catherine Vladutiu, Perinatal Epidemiology, Injury Epidemiology, Cardiovascular Epidemiology
Alexandra White, Cancer Epidemiology, Environmental Epidemiology
Rachel E. Williams, Health Care Epidemiology

Adjunct Instructor

Amy Ising, Public Health Informatics, Public Health Surveillance, Syndromic Surveillance

Professors Emeriti

Wilfrida Behets
Marilie D. Gammon
Barbara S. Hulka
Michel A. Ibrahim
Victor Schoenbach
J. Richard Seed
Carl M. Shy
James Thomas

EPID

Advanced Undergraduate and Graduate-level Courses

EPID 600. Principles of Epidemiology for Public Health. 3 Credits.
An introductory course that considers the meaning, scope, and applications of epidemiology to public health practice and the uses of vital statistics data in the scientific appraisal of community health. One lecture and two lab hours per week.

Rules & Requirements
Grading Status: Letter grade.

EPID 625. Injury as a Public Health Problem. 3 Credits.
This course examines unintentional injuries from a public health perspective. The course covers core concepts in injury prevention and control, including the epidemiology of unintentional injury, prevention strategies, behavioral models, child and adolescent injury, messaging framing, the Haddon matrix, and injury surveillance.

Rules & Requirements
Requisites: Corequisite, EPID 600.
Grading Status: Letter grade.
Same as: MHCH 625, HBEH 625.

EPID 626. Violence as a Public Health Problem. 3 Credits.
This course covers core concepts in violence prevention and control, including the epidemiology of violence, prevention strategies for interpersonal and intra-personal violence, behavioral models that describe power structures that reinforce personal and societal factors affecting self-harm and violence towards others, and violence directed towards children and adolescents.

Rules & Requirements
Grading Status: Letter grade.
Same as: MHCH 626, HBEH 626.
EPID 695. Research in Epidemiology. 1-3 Credits.
Permission of the instructor. A course for undergraduate students who wish to conduct research as part of an ongoing epidemiology project or as an independent activity.

Rules & Requirements
Repeat Rules: May be repeated for credit; may be repeated in the same term for different topics; 3 total credits. 3 total completions.
Grading Status: Letter grade.

EPID 696. Problems in Epidemiology. 1-3 Credits.
A course for undergraduate students who wish to make an intensive study of some special problems in epidemiology.

Rules & Requirements
Repeat Rules: May be repeated for credit; may be repeated in the same term for different topics; 3 total credits. 3 total completions.
Grading Status: Letter grade.

Graduate-level Courses

EPID 700. SAS and Data Management. 3 Credits.
An introduction to statistical analysis, programming, and data management, using the SAS programming language. Two lecture hours and two lab hours per week.

Rules & Requirements
Grading Status: Letter grade.

EPID 701. R for Epidemiologists. 3 Credits.
This course is intended to be the most effective and efficient way for UNC Epidemiology students to establish a foundation in the R programming language, RStudio IDE, and functional programming modalities. Special attention is given to R topics and packages relevant for epidemiological data management, analysis, and visualization.

Rules & Requirements
Grading Status: Letter grade.

EPID 702. Systematic Review. 2 Credits.
Course gives students background in assessing and conducting systematic reviews. Focuses on 1) reading, discussing, and critiquing systematic reviews on various topics; 2) reading background and methods articles on systematic reviews; 3) developing a focused question for systematic review; and 4) developing a protocol for a systematic review over the semester.

Rules & Requirements
Grading Status: Letter grade.

EPID 704. Socially Responsible Epidemiology. 1 Credits.
EPID 704 aims to provide level-setting and foundational content on ethics, equity, and anti-racism, with the goal of facilitating a transition into later equity content in the other epidemiology methods courses. Designed for first-year Epidemiology PhD students, second priority to Applied Epidemiology MPH students and permission of instructor required for others to enroll.

Rules & Requirements
Grading Status: Letter grade.

EPID 705. Introduction to Deductive and Probability Logic in Epidemiology. 2 Credits.
Permission of the instructor for nonmajors. Covers properties of logical relations, truth tables and Euler diagrams, valid and fallacious arguments, cognitive heuristics and biases, interpretations of probability, the probability calculus, Bayes' theorem, binomial and normal distributions, applications of probability logic and probabilistic fallacies, all in an epidemiologic context.

Rules & Requirements
Grading Status: Letter grade.

EPID 710. Fundamentals of Epidemiology. 3 Credits.
An intensive introduction to epidemiological concepts and methods from a perspective of causal inference. This course is for students intending to lead, engage in, collaborate in, or interpret the results of epidemiologic studies. Some familiarity with biomedical concepts may be needed. Three lecture hours a week.

Rules & Requirements
Grading Status: Letter grade.

EPID 711. Clinical Measurement and Evaluation. 3 Credits.
Provide a broad-based introduction to the concepts and methods of epidemiology with particular emphasis on their application in clinical research, clinical practice and health care policy.

Rules & Requirements
Grading Status: Letter grade.

EPID 712. Readings in Fundamentals of Epidemiology. 2 Credits.
A course applying the concepts and methods introduced in EPID 710 (required co-requisite for EPID 712) to readings in the epidemiologic, biomedical, and public health research literature.

Rules & Requirements
Grading Status: Letter grade.

EPID 713. Socially Responsible Epidemiology. 1 Credits.
A course applying the concepts and methods introduced in EPID 710 (required co-requisite for EPID 712) to readings in the epidemiologic, biomedical, and public health research literature.

Rules & Requirements
Grading Status: Letter grade.

EPID 715. Theory and Quantitative Methods in Epidemiology. 4 Credits.
Required preparation, competence in SAS. An in-depth treatment of basic concepts and skills in epidemiologic research, including problem conceptualization, study design, research conduct, data analysis, and interpretation. Four lecture hours per week.

Rules & Requirements
Grading Status: Letter grade.

EPID 716. Epidemiologic Data Analysis. 3 Credits.
Required preparation, documented SAS proficiency. This course is a combined lecture/lab format where students get hands-on experience in the analysis and interpretation of data from cohort and case-control studies. Students may take the SAS exemption exam in lieu of taking EPID 700, EPID 795 or BIOS 511.

Rules & Requirements
Grading Status: Letter grade.

EPID 795 or BIOS 511.
EPID 722. Advanced Epidemiologic Methods. 3 Credits.
Permission required for non-majors. Required preparation, SAS software expertise. Course covers epidemiologic analysis of time-to-event data and emphasizes weighing threats to the accuracy of inferences. Class time is spent discussing weekly readings and homeworks. 

Rules & Requirements
Requisites: Prerequisite, EPID 718.
Grading Status: Letter grade.

EPID 726. Epidemiologic Research Methods. 3 Credits.
Minimum second-year standing in doctoral (with permission of the instructor) or MSCR program. A course in the design and conduct of epidemiologic research. Each student will comprehensively address the conceptual and practical aspects of developing a high-quality, detailed research proposal. EPID PhD or MSCR majors only.

Rules & Requirements
Requisites: Prerequisite, EPID 718.
Grading Status: Letter grade.

EPID 731. Systematic Review and Meta-Analysis. 1 Credits.
This seminar provides training in systematic review and meta-analysis. Topics include problem definition, literature search, extraction of results and study characteristics, publication bias and funnel plot analysis, analysis overall heterogeneity, and stratified and meta-regression analysis of study and population characteristics.

Rules & Requirements
Requisites: Prerequisite, EPID 715 or EPID 804.
Grading Status: Letter grade.

EPID 735. Cardiovascular Epidemiology. 3 Credits.
Review of cardiovascular health and disease in populations and their population determinants. Topics include epidemiologic methods, risk factors, strategies for prevention, and a student research project. Three lecture hours per week.

Rules & Requirements
Grading Status: Letter grade.

EPID 738A. Methods and Applications of Cardiovascular Disease Surveillance. 1 Credits.
This course helps students gain experience critiquing and interpreting national and international cardiovascular disease (CVD) surveillance programs, evaluate recommendations for future CVD surveillance research and policy, and to explore CVD surveillance data sources with hands-on experience with practical aspects of study conduct.

Rules & Requirements
Requisites: Prerequisite, EPID 735.
Grading Status: Letter grade.

EPID 738B. Epidemiology of Stroke. 1 Credits.
This course helps students become familiar with physiologic and pathologic aspects of cerebrovascular diseases, provides opportunity to explore research findings regarding major risk factors for stroke and evidence for prevention strategies, and offers a guided experience in critiquing, synthesizing, and communicating stroke related research findings.

Rules & Requirements
Requisites: Prerequisite, EPID 735.
Grading Status: Letter grade.

EPID 742. Biomarkers in Population-Based Research. 2 Credits.
This course surveys the major issues relevant to the application of biomarkers in epidemiological research, including the logistical hurdles in biospecimen collection and storage, assessments of biomarker quality, analytic issues, and the interpretation of quantitative estimates.

Rules & Requirements
Grading Status: Letter grade.

EPID 743. Genetic Epidemiology: Methods and Applications. 3 Credits.
Concepts and methods of genetic epidemiology relevant to the study of complex human diseases, including segregation analysis, linkage analysis, and gene-environment interaction. Includes whole genome approaches, as well as nonhuman systems. Three lecture hours a week.

Rules & Requirements
Requisites: Prerequisites, BIOS 545 and EPID 715; permission of the instructor for students lacking the prerequisites.
Grading Status: Letter grade.

EPID 750. Fundamentals of Public Health Surveillance. 3 Credits.
This course provides the conceptual foundations and practical skills for designing and implementing surveillance systems, for using surveillance data for the conduct and evaluation of public health programs and research.

Rules & Requirements
Grading Status: Letter grade.
EPID 751. Emerging and Re-Emerging Infectious Diseases. 3 Credits.
Basic principles of infectious diseases, focusing on emerging and
re-emerging disease agents that affect public health. Includes an
introduction to the biology of viruses, bacteria, and eukaryotic parasites.

Rules & Requirements
Grading Status: Letter grade.

EPID 754. Advanced Methods in Infectious Disease Epidemiology. 3
Credits.
This course covers theories, concepts, study designs, and analytical
methods of particular importance in studying infectious outcomes.
Teaching methods include lectures, hands-on computer practicals, article
discussions, and written assignments.

Rules & Requirements
Requisites: Prerequisites, EPID 715 and 716.
Grading Status: Letter grade.

EPID 755. Introduction to Infectious Disease Epidemiology. 3 Credits.
Permission required for non-majors. This course will cover concepts,
theory, study designs, and analytical methods of particular importance
in infectious disease epidemiology. Most topics will be introduced
with a didactic lecture and readings, followed by an in-class exercise,
discussion, or computer practical applying relevant theories, concepts,
and methods to specific questions in infectious disease epidemiology.

Rules & Requirements
Grading Status: Letter grade.

EPID 757. Epidemiology of HIV/AIDS in Developing Countries. 3
Credits.
This course examines the epidemiology of AIDS from an international
perspective. It considers the AIDS pandemic in a broad epidemiologic
perspective, including key aspects of basic, clinical, and social science.
Three lecture hours per week.

Rules & Requirements
Requisites: Prerequisite, EPID 600.
Grading Status: Letter grade.

EPID 758. Methods and Principles of Applied Infectious Disease
Epidemiology. 3 Credits.
This course will cover the interaction between an infectious agent, host,
and environment; modes and dynamics of transmission; the role of
immunity in infectious disease epidemiology; and disease elimination
strategies. Three lecture hours per week.

Rules & Requirements
Requisites: Prerequisite, EPID 600.
Grading Status: Letter grade.

EPID 759. Methods in Field Epidemiology. 3 Credits.
Course will focus on epidemiological methods required to investigate
urgent public health problems. Course covers the skills and tools needed
to conduct outbreak investigations and communicate findings to the
public. Three lecture hours per week.

Rules & Requirements
Grading Status: Letter grade.

EPID 760. Vaccine Epidemiology. 3 Credits.
An overview of vaccinology principles, mechanisms of action, and
herd protection, and statistical considerations. Students will obtain
understanding of how vaccines are produced by industry, undergo
preclinical evaluation, and evaluated for efficacy in clinical trials.

Rules & Requirements
Grading Status: Letter grade.

EPID 764. Hospital Epidemiology. 1-2 Credits.
Comprehensive seminar in hospital infection control. Topics include
issues in employee health, surveillance, outbreak investigation,
environmental sampling, and policy formation. May be repeated for
credit. Two to four seminar hours.

Rules & Requirements
Requisites: Prerequisite, EPID 710; Permission of the instructor required.
Grading Status: Letter grade.

EPID 765. Methods and Issues in Pharmacoepidemiology. 3 Credits.
Required preparation, introductory-level epidemiology and biostatistics.
Application of the epidemiologic knowledge, methodology, and reasoning
to the study of the effects (beneficial and adverse) and uses of drugs in
human populations.

Rules & Requirements
Grading Status: Letter grade.

EPID 766. Epidemiologic Research with Healthcare Databases. 3
Credits.
Required preparation, competency in data management with SAS
(BIOS 511, EPID 700, or equivalent). Learn how healthcare utilization
data are generated and use databases to identify study populations
and conduct epidemiologic analysis of the utilization and comparative
effectiveness/safety of prescription drugs and healthcare services.

Rules & Requirements
Requisites: Prerequisite, EPID 710 OR EPID 600 (or equivalent);
Demonstrated SAS competency.
Grading Status: Letter grade.
Same as: DPOP 766.

EPID 770. Cancer Epidemiology and Pathogenesis. 3 Credits.
Equivalent experience for students lacking EPID 710. Undergraduate
major or strong preparation in the biological sciences required.
Permission of the instructor for nonmajors. Emphasis on integration
of epidemiologic data with laboratory and clinical research findings.
Issues in epidemiologic research design, analysis, and interpretation are
presented within the context of substantive epidemiology. Three lecture
hours a week.

Rules & Requirements
Requisites: Prerequisites, BIOS 600 and EPID 710.
Grading Status: Letter grade.

EPID 771. Cancer Epidemiology: Survivorship and Outcomes. 3 Credits.
Students will evaluate the strengths and weaknesses of data sources
common to cancer survivorship and outcomes studies, focusing on
epidemiologic study designs. The course addresses cancer detection,
treatment strategies, medical surveillance, and personal behaviors as
determinants for prognosis, late effects, and the long-term health of
cancer survivors.

Rules & Requirements
Requisites: Prerequisite, EPID 710 or 711.
Grading Status: Letter grade.
EPID 772. Cancer Prevention and Control Seminar. 3 Credits.
An interdisciplinary overview of cancer prevention and control. Emphasis on projects and activities from perspectives of epidemiology, health behavior and education, and health policy and management. Appropriate research design and methodologies are covered.

Rules & Requirements
Grading Status: Letter grade.
Same as: HPM 765, HBEH 765.

EPID 775. Advanced Cancer Epidemiology: Classic and Contemporary Controversies in Cancer Causation. 2 Credits.
Readings and discussions on classic and contemporary controversies in cancer. Two seminar hours per week.

Rules & Requirements
Requisites: Prerequisites, EPID 715, 718, and 770 or 771; Permission of the instructor for students lacking the prerequisites.
Repeat Rules: May be repeated for credit.
Grading Status: Letter grade.

EPID 780. Occupational Epidemiology. 3 Credits.
Required preparation, introductory epidemiology and biostatistics. This course provides a background in the epidemiology of work-related illness and injury and the application of epidemiologic concepts and methods in protecting workers' health and safety.

Rules & Requirements
Grading Status: Letter grade.

EPID 785. Environmental Epidemiology. 3 Credits.
Epidemiologic ideas and methods applied to evaluation and control of human health consequences of environmental hazards. Pollution of environmental media and global change are considered from a human-ecological perspective, with local and international examples. Three lecture hours per week.

Rules & Requirements
Requisites: Prerequisites, EPID 710 and BIOS 600.
Grading Status: Letter grade.

EPID 787. Advanced Environmental Epidemiology. 2 Credits.
Discussion of the epidemiology of environmentally-related disease and the application of epidemiologic concepts/methods to protecting public health from environmental hazards. Examples illustrate discussions regarding exposure assessment, dynamic nature of environments, regulation/assessment of environmental hazards, and methods used for environmental hazard identification and risk assessments.

Rules & Requirements
Grading Status: Letter grade.

EPID 790. Intervention Epidemiology. 2 Credits.
Epidemiologic methods for evaluating interventions, primarily in infectious disease epidemiology and injury epidemiology. Covers randomized designs, such as community trials, and evaluation of non-randomized interventions, such as policies and laws.

Rules & Requirements
Requisites: Co-requisites, EPID 705 and 710.
Grading Status: Letter grade.

EPID 795. Data in Public Health. 3 Credits.
This course provides students with an overview of public health informatics and includes in-depth discussions on informatics approaches used in developing the public health information systems in use today.

Rules & Requirements
Grading Status: Letter grade.

EPID 799A. Special Studies in Epidemiology I. 1 Credits.
Experimental course to be offered by faculty to determine the need and demand for the subject. Topics will be chosen by faculty based on current public health issues. One credit option.

Rules & Requirements
Repeat Rules: May be repeated for credit; may be repeated in the same term for different topics; 3 total credits. 3 total completions.
Grading Status: Letter grade.

EPID 799B. Special Studies in Epidemiology II. 2 Credits.
Experimental course to be offered by faculty to determine the need and demand for the subject. Topics will be chosen by faculty based on current public health issues. Two credits option.

Rules & Requirements
Repeat Rules: May be repeated for credit; may be repeated in the same term for different topics; 6 total credits. 3 total completions.
Grading Status: Letter grade.

EPID 799C. Special Studies in Epidemiology III. 3 Credits.
Experimental course to be offered by faculty to determine the need and demand for the subject. Topics will be chosen by faculty based on current public health issues. Three credits option.

Rules & Requirements
Repeat Rules: May be repeated for credit; may be repeated in the same term for different topics; 9 total credits. 3 total completions.
Grading Status: Letter grade.

EPID 801. Data Analysis in Oral Epidemiology. 2-3 Credits.
Required preparation, basic knowledge of SAS. Permission of the instructor. Data analysis project in oral epidemiology: data cleanup, file construction, analysis. For three credit hours, student also completes multivariate analysis with linear, logistic regression. Project to result in publishable paper. Two to three seminar hours a week.

Rules & Requirements
Grading Status: Letter grade.

EPID 804. Design of Clinical Research Studies. 4 Credits.
Permission required for nonmajors. Clinical research majors only. The goals of this course are to develop a strong fundamental understanding of the design of clinical research studies; to understand selection of study populations, exposure and outcome measurement, and choice of appropriate measures; to understand ethical oversight, project management and quality control.

Rules & Requirements
Requisites: Prerequisite, EPID 711, PUBH 741 or equivalent; Corequisite, PUBH 742 or equivalent.
Grading Status: Letter grade.
EPID 810. Physical Activity Epidemiology and Public Health. 3 Credits.
This course provides an overview of major issues in physical activity measurements, population distribution, correlates, impacts (physically and economically), and public health recommendations. Interventions, including relevant theories, will be reviewed. Three lecture hours per week.

Rules & Requirements
Requisites: Prerequisite, EPID 600.
Grading Status: Letter grade.
Same as: NUTR 810.

EPID 814. Obesity Epidemiology. 3 Credits.
Examines epidemiology research on the causes, consequences, and prevention of obesity. Emphasis on methodological issues pertinent to obesity research.

Rules & Requirements
Requisites: Prerequisites, BIOS 545, EPID 715, 716 and NUTR 812 or NUTR 813.
Grading Status: Letter grade.
Same as: NUTR 814.

EPID 818. Analytical Methods in Nutritional Epidemiology. 3 Credits.
Skills and techniques to study how dietary exposures, physical activity, and anthropometric status relate to disease outcomes. Focus is on hands-on data analysis using STATA, and interpretation of results from statistical analysis.

Rules & Requirements
Requisites: Prerequisites, BIOS 545, EPID 600 or 710, and NUTR 813.
Grading Status: Letter grade.
Same as: NUTR 818.

EPID 823. Integrating Social and Biological Perspectives on Human Health. 3 Credits.
Student will learn key theories and methodological approaches for how social processes, socio-spatial organization, and social inequality are associated with health patterns, changes, and disparities; theories/approaches for studying human health from a biological perspective; and strategies using integrated social and biological research perspectives and address advantages and challenges.

Rules & Requirements
Grading Status: Letter grade.
Same as: SOCI 823.

EPID 826. Introduction to Social Epidemiology. 2 Credits.
This course provides an overview of key concepts, methods and findings in research on social determinants of population health. Classes will consist of a didactic presentation followed by in-class group work modules and large group summary discussion.

Rules & Requirements
Requisites: Pre- or corequisite, EPID 600.
Grading Status: Letter grade.

EPID 827. Social Epidemiology: Design and Interpretation. 2 Credits.
Approaches to social epidemiologic research, with a focus on study design and interpretation of analytic techniques common in social epidemiology. Topics include causal inference for socially patterned exposures, racial equity research, and place effects on health.

Rules & Requirements
Requisites: Prerequisite, EPID 710; corequisite, EPID 715 or 716.
Grading Status: Letter grade.

EPID 851. Reproductive and Perinatal Epidemiology. 3 Credits.
Epidemiology of reproductive and perinatal health outcomes, including infertility, fetal loss, preterm birth, birthweight, congenital malformations, and infant mortality. Includes current knowledge regarding epidemiology of these outcomes and discussion of methodologic issues. Three lecture hours per week.

Rules & Requirements
Requisites: Co-requisites, BIOS 600 and EPID 600; Equivalent experience for students lacking the co-requisites.
Grading Status: Letter grade.
Same as: MHCH 851.

EPID 853. Advanced Topics in Perinatal and Pediatric Epidemiology. 2 Credits.
Critical review of current topics in, and methods for, perinatal and pediatric epidemiology.

Rules & Requirements
Requisites: Prerequisites, EPID 710 and 851; Permission of the instructor for master’s level students.
Grading Status: Letter grade.
Same as: MHCH 853.

EPID 883. Teaching Experience in Epidemiology. 1-4 Credits.
Open to EPID majors, second-year or above. Provides epidemiology majors with supervised experience in teaching and course preparation. Students act as assistants in departmental courses. Two to eight seminar hours a week.

Rules & Requirements
Grading Status: Letter grade.

EPID 886. Readings in Epidemiology. 1-3 Credits.
Permission of the instructor required. Independent reading and tutorial guidance in special areas of epidemiology.

Rules & Requirements
Grading Status: Letter grade.

EPID 889. Topics in Epidemiology Seminar. 1 Credit.
EPID majors only. Topics are chosen to reflect emerging issues in the field, as well as those that meet the interests of the students and faculty in the department.

Rules & Requirements
Requisites: Prerequisite, EPID 710.
Repeat Rules: May be repeated for credit; may be repeated in the same term for different topics.
Grading Status: Letter grade.

EPID 891. Epidemiology Doctoral Seminar. 2 Credits.
Exposes students to issues and debates in the philosophy of science, the object of knowledge in epidemiology, and the place of epidemiology in public health.

Rules & Requirements
Grading Status: Letter grade.
EPID 893. Pharmacoepidemiology Seminar. 1 Credits.
This is a weekly seminar to explore current problems in pharmacoepidemiology. It supplements the introductory course, EPID 765. Required preparation, basic knowledge of epidemiology and biostatistics. May be repeated. One seminar hour a week.

Rules & Requirements
Repeat Rules: May be repeated for credit; may be repeated in the same term for different topics.
Grading Status: Letter grade.

EPID 894. Infectious Disease Seminar. 1 Credits.
Required preparation, introductory epidemiology and biostatistics. Detailed review of selected topics in infectious disease epidemiology. May be repeated for credit.

Rules & Requirements
Repeat Rules: May be repeated for credit; may be repeated in the same term for different topics.
Grading Status: Letter grade.

EPID 895. Seminar in Oral Epidemiology. 1 Credits.
Explores conceptual and methods issues in conducting epidemiologic investigations of oral conditions, specifically caries, periodontal disease, and oral cancer (topics rotate semesters).

Rules & Requirements
Requisites: Prerequisite, EPID 710.
Grading Status: Letter grade.

EPID 897. Advanced Seminar in Cardiovascular Research. 1-3 Credits.
Permission of the instructor. Review of substantive and methodological research in cardiovascular and cerebrovascular diseases. May be repeated for credit. Two to six seminar hours a week.

Rules & Requirements
Repeat Rules: May be repeated for credit; may be repeated in the same term for different topics.
Grading Status: Letter grade.

EPID 900. Epidemiology Practice. 4 Credits.
Designed to give epidemiology majors a supervised field experience in population health research.

Rules & Requirements
Repeat Rules: May be repeated for credit.
Grading Status: Letter grade.

EPID 905L. Epidemiology Laboratory Practice. 0.5-9 Credits.
Permission of the instructor. Students work individually with a faculty member on supervised laboratory research and skills development. May be repeated for credit. Two to 18 laboratory hours a week.

Rules & Requirements
Grading Status: Letter grade.

EPID 910. Research in Epidemiology. 1-9 Credits.
Permission of the instructor. Independent investigation in consultation with an instructor who must assign or approve the subject of research. Credits vary according to the effort and rigor of the research.

Rules & Requirements
Repeat Rules: May be repeated for credit; may be repeated in the same term for different topics.
Grading Status: Letter grade.

EPID 992. Master’s (Non-Thesis). 3 Credits.

Rules & Requirements
Repeat Rules: May be repeated for credit.

EPID 994. Doctoral Research and Dissertation. 3 Credits.

Rules & Requirements
Repeat Rules: May be repeated for credit.

Master of Public Health (M.P.H.) - Applied Epidemiology Concentration
In the Applied Epidemiology concentration (https://sph.unc.edu/resource-pages/master-of-public-health-2/applied-epidemiology-concentration/), students will learn to apply fundamental epidemiologic methods and approaches to describe patterns of disease or public health issues affecting diverse populations using an epidemiologic framework and, in turn, help drive solutions to problems. Examples of recent public health topics that our students have explored include One Health, HIV, Hepatitis C prevalence, TB, cardiovascular disease, environmental exposures and breast cancer, the opioid epidemic, suicide rates, HPV vaccine, cancer treatment efficacy, and the role of nutrition.

Degree Requirements
Requirements for the M.P.H. degree in the Applied Epidemiology concentration

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Hours</th>
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<tbody>
<tr>
<td>M.P.H. Integrated Core</td>
<td></td>
<td></td>
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<tr>
<td>SPHG 711</td>
<td>Data Analysis for Public Health</td>
<td>2</td>
</tr>
<tr>
<td>SPHG 712</td>
<td>Methods and Measures for Public Health Practice</td>
<td>2</td>
</tr>
<tr>
<td>SPHG 713</td>
<td>Systems Approaches to Understanding Public Health Issues</td>
<td>2</td>
</tr>
<tr>
<td>SPHG 701</td>
<td>Leading from the Inside-Out</td>
<td>2</td>
</tr>
<tr>
<td>SPHG 721</td>
<td>Public Health Solutions: Systems, Policy and Advocacy</td>
<td>2</td>
</tr>
<tr>
<td>SPHG 722</td>
<td>Developing, Implementing, and Evaluating Public Health Solutions (MPH Comprehensive Exam administered in class)</td>
<td>4</td>
</tr>
</tbody>
</table>

| M.P.H. Practicum                                  |       |
| SPHG 703  | MPH Pre-Practicum Assignments               | 0.5   |
| SPHG 705  | MPH Practicum (200 minimum hours)           | 0     |
| SPHG 707  | MPH Post-Practicum Assignments              | 0.5   |

| M.P.H. Concentration                              |       |
| EPID 710  | Fundamentals of Epidemiology                | 3     |
| EPID 795  | Data in Public Health                       | 3     |
| EPID 716  | Epidemiologic Data Analysis                 | 3     |
| EPID 750  | Fundamentals of Public Health Surveillance  | 3     |
| EPID 759  | Methods in Field Epidemiology               | 3     |

| M.P.H. Electives                                  |       |
| Elective (Graduate-level courses, 400+ level at Gillings, 500+ level at UNO) | 3     |
| Elective (Graduate-level courses, 400+ level at Gillings, 500+ level at UNO) | 3     |
| Elective (Graduate-level courses, 400+ level at Gillings, 500+ level at UNO) | 3     |

| M.P.H. Culminating Experience                     |       |
The following list of milestones (non-course degree requirements) must be completed; view this list of standard milestone definitions (https://catalog.unc.edu/graduate/degree-programs/#milestonestext) for more information.

**Milestones**

The following list of milestones (non-course degree requirements) must be completed; view this list of standard milestone definitions (https://catalog.unc.edu/graduate/degree-programs/#milestonestext) for more information.

**Comprehensive Exam (Master’s Written Exam)**

A milestone degree requirement for all graduate students at UNC–Chapel Hill, including M.P.H. students at the Gillings School of Public Health, is the comprehensive exam. The comprehensive exam will cover the public health foundational knowledge and competencies covered in the M.P.H. Core courses: SPHG 711, 712, 713, 721, 722 and SPHG 703 and 2) receive approval from the practicum team to begin their practicum hours.

**To satisfy degree requirements, a Gillings M.P.H. practicum must:**

- Be an applied public health practice (https://sph.unc.edu/nciph/community-engaged-learning/) experience that addresses a health issue from a community or population (not individual) perspective.
- Take place in a professional public health setting such as a health department, nonprofit organization, hospital or for-profit firm. To be appropriate for a practicum, University-affiliated settings must be primarily focused on community engagement, typically with external partners. University health promotion or wellness centers may also be appropriate. Faculty-supervised lab settings are not appropriate for the practicum.
- Allow for the application of graduate-level public health skills.
- Yield at least two student-generated, practical, non-academic work products (e.g., project plans, grant proposals, training manuals or lesson plans, surveys, memos, videos, podcasts, presentations, spreadsheets, websites, photos with accompanying explanatory text, or other digital artifacts of learning), produced for the practicum site's use and benefit, that demonstrate attainment of five CEPH M.P.H. Foundational Competencies (https://sph.unc.edu/wp-content/uploads/sites/112/2022/10/CEPH-Foudational-Competencies.pdf).
- Be mentored by a supervisor (preceptor) with public health expertise and experience to guide the practicum work. (See “Preceptor Requirements” below.)
- Take place in a location approved for student travel (UNC Travel Policy (https://adminliveunc.sharepoint.com/sites/GillingsMPHPracticum/Shared%20Documents/Website/June%202022%20Practicum%20Website%20Updates/UNC%20Travel%20Policy)), and the student must complete UNC Gillings International Pre-Departure Travel Requirements (https://sph.unc.edu/global-health/global-travel-toolkit-2/) prior to travel if applicable.
- Comprise a minimum of 200 hours (equivalent to five weeks of full-time work).

**Admissions**

Please visit Applying to the Gillings School (https://sph.unc.edu/students/how-to-apply/) first for details and information. Application to the residential M.P.H. is a two-step process. Please apply separately to (1) SOPHAS and (2) UNC–Chapel Hill (via the Graduate School application). Visit https://gradschool.sites.unc.edu/master-of-public-health/ for more details. If you are interested in the online M.P.H., please visit the MPH@UNC (https://onlinemph.unc.edu/) website and fill out an inquiry form.
**Culminating Experience (Thesis Substitute)**

M.P.H. students must have permanent grades in all M.P.H. Core or concentration courses before taking the culminating experience (992) course. An Incomplete in any M.P.H. Core or concentration course will prevent a student from beginning the culminating experience (992) course. Each student completes a 3-credit culminating experience and produces a high-quality written product that is completed in the last term of the program of study. The high-quality written product demonstrates a synthesis of two foundational and two concentration-specific competencies appropriate to the student’s educational and professional goals. This culminating experience ideally is delivered in a manner that is useful to external stakeholders, such as nonprofit or governmental organizations, and could take the form of a course-based capstone project or master’s paper but will be tailored to the concentration a student chooses.

**Academic Advising and Faculty Mentoring**

We are committed to providing quality academic advising and mentoring for all students. We ensure that M.P.H. students get the guidance they need with several components: 1) an orientation program that provides an overview of the types and sources of M.P.H. advising; 2) cohort advising sessions in year 1 to disseminate information that is relevant to course planning and registration (one-on-one advising is available to students at any point). One-on-one advising in year two as students prepare for graduation; 3) faculty mentoring that provides students with tailored support for their academic, professional, personal development, and practicum support.

M.P.H. students will complete a 14-credit-hour Integrated Core taught by an interdisciplinary team of instructors. The 6-credit first semester focuses on understanding public health issues, and the second semester, 8-credit focuses on creating solutions to those issues.

All M.P.H. students complete COMPASS (Core Online Modules to Promote and Accelerate Student Success). These self-paced online modules are open for students prior to their first academic year. Students can complete any and all parts of COMPASS up to and including the first week of class.

**Electives**

Students in the M.P.H. program are required to take 9 credits of elective coursework. Students are expected to use their electives in a thoughtful way to strengthen their public health knowledge/skills and are encouraged to consult with their academic coordinator early prior to the registration period for this purpose. In addition to those courses offered in the Gillings School there are many appropriate electives elsewhere in the University.

For information on policies and procedures, please visit the Gillings School Student Handbook (https://sph.unc.edu/students/gillings-school-student-handbook/) website.

**Residency Requirements**

**Exit Survey**

**Contact Information**

Department of Epidemiology
Visit Program Website (http://sph.unc.edu/epid/)
2101 McGavran-Greenberg Hall
919-966-7430