



***Department of
Epidemiology and Biostatistics***

2026-2027

**Biostatistics Graduate Student
Handbook**



***Arnold School of Public Health
University of South Carolina***



UNIVERSITY OF
South Carolina

Department of Epidemiology and Biostatistics
Arnold School of Public Health

Welcome from the Chair

Dear Incoming Students,

Welcome to the Department of Epidemiology and Biostatistics at the University of South Carolina's Arnold School of Public Health! We are so pleased that you have selected us as you embark upon this new and exciting next stage of your professional journey. My greatest hope is that we can provide you not only with an exceptionally rewarding educational experience that helps you to fulfill your career aspirations, but that your time in the department proves to be enriching and beneficial on both a personal and professional level.

The department's long-term success is rooted in a deep, abiding commitment to advance the public's health through top-tier research and by training the next generation of epidemiologists and biostatisticians. We seek to offer rigorous training in a collegial, supportive environment with the intention that the skills you acquire forge you into a graduate poised to be a public health leader. Our goal is to train the next generation of epidemiologists and biostatisticians to tackle not only the public health challenges of the present, but also to have the skills to address the presently unforeseen public health threats that will emerge in the future. The COVID-19 pandemic provided an excellent recent example of the need to be prepared for the unexpected. We are confident the skills you acquire during your training will empower you to rise up to meet the public health challenges that you will face during your career. Our training program includes learning that takes place in the classroom, faculty mentorship, practicum in teaching and consulting, and rich opportunities to take part in leading edge research. Our multi-faceted educational program will hopefully be personally transformative for you. After more than 50 years of dedication to high quality teaching and research, our department has a proud tradition of excellence. You are now part of this tradition.

As you experience the department, please let us know how we are doing. In our quest for excellence, we are constantly striving to improve. Please let us know what we are doing well, but also where you feel improvements are warranted and how we can better assist you to achieve your career goals.

Welcome to the Department, and best wishes for a smooth transition, much success in your degree program, and a fulfilling career.

Sincerely,

Anthony Alberg, Ph.D., M.P.H.
Professor and Chair

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OVERVIEW

The University of South Carolina Columbia (USC)

Among America's oldest and most comprehensive public universities, USC is the major research institution of the University of South Carolina system and its largest campus, enrolling more than 35,000 students, with over 8,000 of these in graduate and professional programs. At the heart of its mission lies the University's responsibility to the state and society to promote the dissemination of knowledge, cultural enrichment, and an enhanced quality of life.

The University serves a diverse student population with widely varying backgrounds, and career goals. USC provides a comprehensive array of educational programs, offering more than 350 degrees at the bachelor's, master's, doctoral, and professional program levels. In addition to public health, via both traditional classroom instruction and distributed learning USC also offers degree programs in arts and sciences; education; engineering and computing; hospitality, retail, and sport management; mass communications and information studies; music; and social work; and in professional programs such as business, law, medicine, nursing, and pharmacy.

Recognized by the Carnegie Foundation as a top research and service institution, USC has a profound impact on the state of South Carolina and beyond. As the flagship institution of the state system, USC Columbia leads the way in providing all students with the highest-quality education, including the knowledge, skills, and values necessary for success and responsible citizenship in a complex and changing world through engagement in nationally and internationally ranked research, community outreach, and artistic creation.

The Arnold School of Public Health

The Arnold School of Public Health (ASPH) was established in 1975 as the nation's 19th accredited school of public health and remains the only accredited school of public health in South Carolina. ASPH has a rapidly growing undergraduate program, diverse and vibrant graduate programs, and continues to experience record growth in faculty research funding and impact. ASPH has a broad range of academic programs, faculty with research expertise that is recognized nationally and internationally, and impactful centers and community programs. ASPH is improving public health by preparing future scholars and public health practitioners and by conducting, translating, and disseminating groundbreaking research. ASPH [Departments](#) are home to talented faculty, staff, and students, and difference-making research and community engagement activities.

Norman J. and Gerry Sue Arnold

In 2000, Columbia business leader Norman J. Arnold and his wife, Gerry Sue, generously created an endowment to support the school's teaching, research, and educational efforts. The Arnolds' gift, which was inspired by Norman's successful battle against pancreatic cancer, was a transformative event. It has funded research and outreach that

has helped South Carolinians become healthier and experience higher quality of life. Subsequently renamed the Arnold School of Public Health (ASPH) to honor the Arnolds, ASPH became the third named school of public health in the U.S.

The Arnolds' dedication to improving health for all populations is evident from their numerous generous gifts to ASPH. The Norman J. Arnold Endowment, established with their initial gift, supports the Arnold Doctoral Fellowship program to recruit and support top doctoral students. In 2015, the Arnolds pledged an additional \$7 million to create the **Gerry Sue and Norman J. Arnold Institute on Aging** to support a broad range of activities, such as childhood obesity prevention, nutrition and food safety, stroke recovery, and dementia, that affect our most vulnerable populations—children and the elderly.

Guiding Statements

The Arnold School of Public Health is the primary public health research and education resource in South Carolina with a 50-year history of impact. Our work is guided by the following vision, mission, and goals.

Vision

The Arnold School of Public Health will improve population health and well-being by fostering innovative education and research that promotes health and healthy environments and will use that knowledge to prevent and effectively respond to disease, disability, and environmental degradation in diverse communities.

Mission

The Arnold School of Public Health will improve population health and well-being by fostering innovative education, research and practice that promotes health and healthy environments. Arnold School of Public Health will use that knowledge and experience to promote prevention and effective response to disease, disability, and environmental degradation in all communities.

Goals

Goal 1: Provide undergraduate and graduate educational programs of excellence

Goal 2: Promote high quality, impactful and ethical research

Goal 3: Recruit and retain highly qualified faculty and staff to meet our mission

Goal 4: Support community engagement activities that promote and improve the public's health

Goal 5: Meet the fiscal and physical resource needs of the school

Opposing Racism and Injustice

The Arnold School of Public Health condemns racism and injustice in all its forms and actions. Racism and social injustice are strong negative determinants of good health - both physically and mentally - and are antithetical to everything we stand for in academic public health.

Centers and Programs

Our service and outreach activities impact various populations across South Carolina and beyond. The Arnold School houses and partners with a wide range of centers, institutes and other programs that conduct original research, engage in translation and dissemination, and connect directly with the public through clinical and other interactive services. These groups reflect our strengths as a School of Public Health and enable us to make a targeted and lasting impact on the populations whose lives we strive to improve.

[Big Data Health Science Center \(BDHSC\)](#)

USC's BDHSC is an interdisciplinary enterprise that conducts innovative research, offers academic training, and provides service to the community and industry.

[Cancer Prevention and Control Program \(CPCP\)](#)

CPCP conducts cancer research to reduce the burden of cancer by eliminating cancer disparities and disseminating effective methods to prevent cancer.

[Carolina Consortium on Health, Inequalities, and Populations \(CHIP\)](#)

CHIP unites interdisciplinary scholars to conduct research to understand and address the social processes that influence population dynamics and health inequalities.

[Center for Community Health Alignment \(CCHA\)](#)

Partners with community leaders to support health in underserved communities in South Carolina, regionally, and nationally.

[Center for Effectiveness Research in Orthopaedics \(CERortho\)](#)

CERortho's mission is to conduct Comparative Effectiveness Research to generate evidence that leads to value-based, patient-centered care for orthopedic patients.

[Center for Environmental Nanoscience & Risk \(CENR\)](#)

CENR is a SmartState™ Center that investigates nanoparticles and their effects on environmental and human health, and works to develop low risk nanotechnologies.

[Center for the Study of Aphasia Recovery \(C-STAR\)](#)

C-Star does research on stroke recovery and works to improve the lives and communication skills of patients after they suffer strokes.

[Core for Applied Research & Evaluation \(CARE\)](#)

CARE has methodological expertise in program evaluation, including data collection, management, and analyses.

Children's Physical Activity Research Group (CPARG)

CPARG promotes cross-country research to advance understanding of physical activity and its promotion in youth and translate evidence into effective health policies.

Clinical Exercise Research Center (CERC)

CERC measures metabolic and cardiorespiratory responses to exercise in humans, with an automated system to measure metabolism, a DEXA machine for body composition and bone mineral analysis, and phlebotomy services and assay analyses.

Consortium for Latino Health Studies (CLHS)

CLHS promotes multidisciplinary research to improve health of Latinos and the translation of research finding into practice.

Disability Research and Dissemination Center (DRDC)

DRDC is a partnership to conduct research, train professions, and disseminate knowledge related to birth defect, disabilities, and human development.

Global Health Initiative

ASPH seeks to respond to global health challenges by promoting collaborative research.

Health Disparities and Health Equity Research Consortium (HDHERC)

HDHERC's goal is to engage a community of scholars who conduct, translate, and disseminate health disparities and health equity research that improves population health.

Institute for Infectious Disease Translational Research(IIDTR)

IIDTR includes cross-disciplinary research with the goal of advancing the prevention and control of emerging and re-emerging infectious disease.

Oceans and Human Health Center for Climate Change Interactions (OHHC2I)

OHHC2I's goal is the better understand the adverse health effects of climate change by studying *Vibrio cholerae* infections and production of toxins from freshwater cyanobacteria.

Office for the Study of Aging (OSA)

OSA promotes healthy aging through program development, evaluation, training and research. OSA seek to improve long-term care service delivery for South Carolina's older adults by providing information to policy makers, health care professionals, and the public.

PASOs

PASOs is a community-based organization to help the Latino community and service providers work together for healthy families by offering community health programs such educational and outreach activities and partnerships with health car providers.

Prevention Research Center (PRC)

PRC sponsors projects aimed at increasing physical activity and promotes physical activity via interventions, training, dissemination and applied research.

Research Center for Child Well-Being (RCCWB)

RCCWB is interdisciplinary and hosts prevention researchers in public health, psychology, education, and social work.

[South Carolina Rural Health Research Center \(SCRHRC\)](#)

The SCRHRC strives to improve quality of life for rural residents by investigating persistent health inequalities in rural populations.

[South Carolina Cancer Disparities Community Network-II \(SCCDCN-II\)](#)

SCCDCN-II is to reduce cancer disparities through community-based participatory cancer education, research, and training.

[South Carolina Smartstate Center for Health Care Quality \(SC HCQ\)](#)

SCHCQ's goal is to contribute to advances in healthcare and population health through rigorous research, education, community engagement, and policy advocacy.

[South Carolina Institute of Medicine and Public Health \(IMPH\)](#)

IMPH convenes diverse stakeholders around issues important to the health of South Carolinians and provides evidence-based information relevant to policy decisions.

[Technology Center to Promote Healthy Lifestyles \(TecHealth\)](#)

TecHealth is a SmartState™ Center comprised of interdisciplinary researchers whose focus is to create and use innovative technology to encourage healthy lifestyle behaviors.

[USC Speech and Hearing Research Center](#)

The Center provides a variety of diagnostic and treatment programs for people with communication disorders to improve social, educational, and vocational participation.

THE DEPARTMENT OF EPIDEMIOLOGY AND BIOSTATISTICS

Public Health was defined by C-EA Winslow as the science and art of preventing disease, prolonging life, and promoting physical health and efficiency through organized community efforts with the goal of enabling every person to realize their birthright of health and longevity. The disciplines of epidemiology and biostatistics are quantitative research sciences that are essential to achieving the goals of public health. Epidemiologists study the distribution and determinants of health and disease in populations. Biostatisticians develop and apply statistical theory, methods and techniques to public health research data and the planning, implementation, and evaluation of public health programs.

Achieving gains in improving the public's health depends on the ability to identify and solve community health problems. Epidemiology and biostatistics are critical disciplines for the ascertainment and characterization of public health problems and generating public health action. Both epidemiology and biostatistics are key components of the scientific core of public health and are included in the training of every public health professional.

Combining epidemiology and biostatistics in the same department creates the opportunity for tremendous synergies in education and research. At the same time, the unique features of each discipline are acknowledged in the Department's administrative structure which is comprised of two divisions, the Division of Biostatistics and the Division of Epidemiology.

Vision, Mission, and Values

Vision

The Department of Epidemiology and Biostatistics is a community of scholars characterized by an atmosphere of collaboration, collegiality, and mutual respect.

Mission

Our mission is to develop, teach, and apply innovative and efficient methods to solve contemporary public health issues.

Values

The Department of Epidemiology and Biostatistics affirms the seven Arnold School of Public Health values of Community, Diversity, and Inclusion, Impact, Integrity, Learning, Social Justice, and Translation. Our additional department-specific values are:

- 1) **Innovation** – Using innovative methods, we test new theories, models and technologies to determine more efficient ways of analyzing and sharing data.
- 2) **Communication** – We endeavor to turn data into information that can be communicated to scientific and nonscientific audiences.

Goals

Education:

We are committed to training the next generation of public health leaders. Doctoral and master's students in the Department of Epidemiology and Biostatistics will gain state-of-the-art knowledge and develop skills in both epidemiology and biostatistics. These concepts and skills will enable students to effectively identify, evaluate, and solve public health problems. Upon successfully completing the program, students will demonstrate:

- An understanding of the etiologic pathways contributing to disease, disability, and other health outcomes;
- An ability to apply epidemiologic and biostatistical methods to advance understanding of the determinants of disease and other health outcomes and translate this knowledge to benefit the public's health;
- An understanding of the design and conduct of research in public health; and
- Skills in data analysis and interpretation of research results in the context of promoting the public's health through disease prevention and health promotion.

Research:

The research goals of the Department stress contributions to the field of public health through the development of new knowledge that advances understanding of the causes of disease, and by translating this knowledge to reduce disease and premature death. Broad objectives are targeted toward:

- Impact on public health;
- Ability to identify and respond to emerging health problems; and
- Ability to effectively engage in partnerships with public health agencies at the local, state (e.g., South Carolina Department of Public Health) and federal levels (e.g., Centers for Disease Control and Prevention, National Institutes of Health).

Service:

The service goals of the Department are to contribute to the University, the public and the health professions through the direct involvement of the faculty, staff, and students in a range of activities. Service goals are geared:

- To the University through participation in governance and contributions to institutional development;
- To the health professions through contributions to the advancement of science through peer-reviewed publications, editorial and peer review activities, participation in professional and scientific forums and organizations, and assistance to health-related program personnel and policymakers in their efforts to keep abreast of new knowledge; and
- To the public through continuing education, demonstration projects, consulting and other advisory services, and support in the diffusion and dissemination of new knowledge and applied technology to advance the public's health.

Degree Programs

The Department offers master's and doctoral degrees in both epidemiology and biostatistics.

The major in **epidemiology** is designed for students pursuing careers in the study of the distribution and determinants of diseases, disabling conditions, risk behaviors, and other health-related outcomes in human populations. The field of epidemiology involves research into factors that influence human health states or events and evaluation of prevention and treatment interventions. Epidemiologists attempt to establish the causes of health problems by describing the biological, environmental, social and behavioral factors affecting illness and premature death as well as factors that contribute to health and well-being. Descriptive and analytic techniques are used to gather information on disease occurrence, advance understanding of the complex sets of factors that contribute to the etiology of disease and translate findings into effective disease control measures. Epidemiologists also engage in research to evaluate the delivery of health services, and to measure the efficacy of treatments and intervention programs. The evidence generated from epidemiologic research is relevant to developing health promotion/disease prevention programs and formulation of health policy. To accomplish these objectives, the epidemiologist must acquire expertise in study design and exposure assessment. As a discipline committed to the health and well-being of human beings, epidemiology places an emphasis on ensuring adherence to ethical standards of practice regarding persons' participation in research as well as maintaining high standards of research integrity in implementing research studies. Epidemiologists work in leadership and collaborative roles on interdisciplinary teams, whether these teams are focused on advancing research or public health practice.

The major in **biostatistics** is designed for students pursuing careers in community health measurement, design and management of health data systems, health-related data science, and the development and application of quantitative methods to health problems. Biostatisticians apply statistical theory, methods, and techniques to the planning, development, and evaluation of health programs and problems. They collect and analyze various types of information such as demographic and vital statistics; health resources statistics; integration of individual-level, area-level, and spatial-level data; high throughput genomic, proteomic, and other biomarker data; and other biological, environmental, social and behavioral factors relevant to modern health problems. Biostatisticians design experiments and observational studies, use various computer operating systems and software packages to store and analyze information, develop methods to compare population groups, and prepare inferential and probabilistic statements based on biological, social, and environmental data. Biostatisticians have the capacity to apply advanced statistical theory to solve complex data analytic challenges in addressing important questions in public health and biomedical research. The work of biostatisticians ranges from the application and interpretation of standard analytic techniques to the development of novel methodological approaches to unique forms of data.

The **Graduate Certificate in Biostatistics (GCiB)** is designed for students and professionals who wish to develop foundational skills in biostatistical methods without requiring a calculus-based background. The certificate provides training in the application and interpretation of statistical techniques commonly used in public health and health sciences research. Coursework emphasizes practical data analysis, statistical reasoning, and the communication of results in applied settings. The Graduate Certificate in Biostatistics is appropriate for individuals seeking to enhance their quantitative skills for careers in public health, clinical research, or related fields, as well as for those considering further graduate study in epidemiology, biostatistics, or other health sciences disciplines.

The **Master of Public Health (M.P.H.)** in epidemiology degree is designed for those who wish to acquire skills necessary to work as an epidemiologist in public health or other health sciences settings. The M.P.H. is offered in-person and 100% asynchronous online. The M.P.H. with a major in epidemiology provides a foundation in epidemiologic methods with a focus on applying epidemiologic skills in the setting of public health practice and other health sciences settings.

The **Master of Science (M.S.)** degree is designed for those who wish to acquire skills necessary for public health research. The M.S. with a major in epidemiology focuses on development of research skills for the study of determinants of disease and other health conditions. The M.S. with a major in biostatistics prepares researchers to apply statistical techniques to health problems.

The **Doctor of Philosophy (Ph.D.)** is an advanced graduate degree for those who intend to pursue teaching and research careers. The major objective of the Ph.D. degree in Epidemiology is to prepare an individual to pursue original epidemiologic investigation of diseases and develop novel methodological approaches. The major objective of the Ph.D. degree in Biostatistics is to prepare an individual to develop novel statistical methods and to apply biostatistical principles and methods to public health problems.

RESOURCES

Libraries

The University Libraries foster learning and discovery by connecting people with significant collections and expert support of research. Ranked 34th by the Association of Research Libraries among U.S. Public Libraries, the University Libraries are the only ARL member in South Carolina. The libraries are comprised of the historic South Carolinian Library; Ernest F. Hollings Special Collections Library; Music Library; Moving Image Research Collections; and Thomas Cooper Library, a seven-level facility with 290,000 square feet of floor space that is open 24/7 to students. Scholars from around the world seek the libraries' holdings, which include comprehensive collections of F. Scott Fitzgerald, crime fiction writers Elmore Leonard and Dashiell Hammett, natural history, astronomy, news, film, and state political leaders.

The Arnold School of Public Health's liaison to the Thomas Cooper Library is Amy Edwards (amjedwar@mailbox.sc.edu).

Information Technology

The Division of Information Technology (DoIT) provides strategic leadership for information technology, instructional services, e-learning and research cyberinfrastructure at USC. For more information visit www.sc.edu/it and for technical assistance contact the Service Desk at servicedesk@sc.edu or (803) 777-1800.

The Information Technology Core provides IT support for ASPH faculty and staff. This team also oversees the ASPH's main computer lab for students, located in Discovery Room 431. The computer lab has 34 workstations and two black and white laser printers. For assistance with ASPH-specific IT issues, please submit a ticket with ASPH IT: <https://support.asph.sc.edu>.

Discovery Computer Lab hours (fall, spring & summer)

Monday-Friday: 8:00am - 10:00pm

Saturday: 10:00am - 8:00pm

Sunday: closed

Information for International Students

International Student and Scholar Support (ISSS) is your go-to resource for all things immigration related, particularly when it relates to F-1 and J-1 visas. The advisors at ISSS are your resource and guide when it comes to immigration and cultural matters so that you can achieve your educational and personal goals in the U.S. ISSS can be contacted at iss@sc.edu or by visiting their website: www.iss.sc.edu.

Carolina Card

The Carolina Card is your permanent USC ID card plus a flexible-spending declining balance card. Each time you make a purchase, the amount of the purchase is deducted from your account balance. Carolina Cash can be used for dining and non-dining purchases. For more information about obtaining and using a Carolina Card, visit their website: https://sc.edu/about/offices_and_divisions/carolinacard/.

Student Services

Academic achievement is the primary goal for every graduate student, but making it happen while maintaining life balance can be challenging. We encourage you to take advantage of the many services available to you through the [Division of Student Affairs and Academic Support](#). Below are just some of the many offices within the Division.

University Health Services

In addition to the rigors of your studies, the challenges of being in a new community can create a stressful environment that impacts your health and well-being. Multiple services are available to students, including Healthy Carolina and Student Health Services which provide on-campus access to physical and mental health care services. They are located directly behind the Russell House (1401 Devine St). For more information about University Health Services, including Counseling Services, please visit their website: https://sc.edu/about/offices_and_divisions/student_health_services/.

Career Center

The Career Center prepares students for lifelong career management by helping them discover careers, develop their employability skills and connect with employers. Visit their website at sc.edu/careercenter or contact them at 803-777-7280.

Multicultural Student Affairs

The Office of Multicultural Student Affairs supports an inclusive campus environment by providing educational and social programs and supporting and advocating for historically underrepresented student populations. Visit their website at sc.edu/multicultural or contact them at 803-777-7716 or saomsa@mailbox.sc.edu.

Off-Campus Living (OOCL) and Neighborhood Relations

The OOCL helps students transition to and thrive in off-campus residences and understand the rights and responsibilities of residing in Columbia. Students looking for off-campus housing opportunities or information should visit their website at sc.edu/offcampusliving or contact them at 803-777-3366 or saocss@mailbox.sc.edu

Registrar

The University Registrar oversees student educational records, the academic calendar, course registration, enrollment verification, transfer credits and issuing diplomas. The Office of the Registrar also manages veterans' services and citizenship and S.C. residency verification. Visit their website at sc.edu/registrar or contact them at 803-777-5555.

Bursar

The University Bursar's Office oversees student billing and other financial information. Visit their [website](#) or contact them at 803-777-4233 or bursar@mailbox.sc.edu.

Student Conduct and Academic Integrity

The Office of Student Conduct and Academic Integrity upholds the student code of conduct by addressing and adjudicating students' alleged violations. Visit their [website](#).

Leadership and Service Center

The Leadership and Service Center equips students to positively impact their communities through involvement in student organizations, leadership development, service, and civic engagement. Visit their website at sc.edu/leadershipandservicecenter or contact them at 803-777-7130. Some student organizations specifically tailored to graduate students are:

Graduate Student Association (GSA)

The GSA is dedicated to the advancement and development of the graduate and professional students at USC. For more information, contact them sogsa@mailbox.sc.edu.

Black Graduate Student Association (BGSA)

The BGSA fosters an academic, professional, and social environment for black graduate students and to serve as an aid in advocating the needs and concerns of black graduate students at USC. For more information, contact them at sobgsa@mailbox.sc.edu.

[Maternal and Child Health \(MCH\) Student Association \(MCHSA\)](#)

MCHSA connects multidisciplinary undergraduate and graduate students with interests in MCH-related careers that focus on the health and well-being of mothers, infants, children, and adolescents. MCHSA offers a platform for students to meet and discuss MCH-related topics. For more information, contact them at somchsa@mailbox.sc.edu.

Delta Omega Society

Delta Omega is the honorary society for graduate and undergraduate students in public health. For more information, contact them at deltaomg@mailbox.sc.edu.

Sexual Assault and Violence Intervention and Prevention

The university strives to prevent interpersonal violence and support anyone who has experienced or been affected by it. To speak with an advocate, call 803-777-8248 or visit SAVIP during business hours (1409 Devine Street). Students, faculty and staff can talk to a trained interpersonal violence advocate. To learn more about SAVIP, please visit https://www.sc.edu/about/initiatives/safety/stop_sexual_assault/index.php.

Student Success Center

The Student Success Center provides course-specific and general study skills assistance, as well as services for transfer and veteran students. Visit their website at sc.edu/success or contact them at 803-777-1000 or sassc@mailbox.sc.edu.

Substance Abuse Prevention and Education (SAPE)

The Office of SAPE helps students identify risky behaviors, hone decision-making skills and make safer choices regarding alcohol and drug use. Visit their website at sc.edu/sape or contact them at 803-777-3933 or sape@sc.edu.

Office of Sustainability (OS)

The OS promotes collaborations among the USC community and the surrounding community to implement the changes needed to create a sustainable campus and society. Visit their website at sc.edu/sustainability or contact them at sustainability@sc.edu

Student Disability Resource Center (SDRC)

The SDRC helps students with disabilities and temporary injuries to manage the demands of University life and also assists the University community to make programs and activities accessible to all. To apply for accommodations, you should start the application process as soon as you are admitted to the University or experience an injury that will affect your performance. Please visit the [SDRC Homepage](#) for more information.

Student Grievances, Appeals and Petitions

USC's policies serve as guidelines for students. Occasionally, students may feel they have grounds to seek exception from the uniform application of policies. Graduate students may file written grievances, appeals or petitions to the Office of Faculty Affairs seeking to reverse or modify decisions. For more information, please go to [SPH Graduate Student Grievance Procedure](#).

ACADEMIC INTEGRITY

Only in an environment where honesty and integrity are core values can we truly advance the science and practice of public health. The Department of Epidemiology and Biostatistics places a premium on academic integrity. Violations of academic integrity are thus taken very seriously. Many details about academic integrity are described below, but a fundamental precept to guide your approach is to take pride in doing work to the best of your natural abilities and doing so honestly and fairly.

The following excerpts are taken from STAF 6.25 Academic Responsibility – The Honor Code, last revised August 1, 2017.

“The Honor Code is a set of principles established by the university to promote honesty and integrity in all aspects of a student’s academic career. It is the responsibility of every student at USC to adhere steadfastly to truthfulness and to avoid dishonesty in connection with any academic program. A student who violates, or assists another in violating the Honor Code, will be subject to university sanctions. The Honor Code delineates the values set forth in the tenets of the Carolinian Creed (www.sa.sc.edu/creed). When a student is uncertain as to whether conduct would violate this Honor Code, it is the responsibility of the student to seek clarification from the appropriate faculty member or instructor of record.”

The following is a list of Honor Code Violations with associated prohibited behaviors.

Plagiarism:

Use of work or ideas without proper acknowledgment of source. Prohibited behaviors include:

- Partial or incomplete citation of work or ideas.
- Improperly paraphrasing by acknowledging the source but failing to present the material in one’s own words.
- Paraphrasing without acknowledgment of the source.
- Multiple submissions of the same or substantially the same academic work for academic credit.
- Copying, partially or entirely, any material without acknowledgement of the source.

Cheating:

Improper collaboration or unauthorized assistance in connection with any academic work. Prohibited behaviors include:

- Requesting unauthorized assistance
- Providing aid or assistance to or receiving aid or assistance from another individual or source without permission (including improper collaboration), in conjunction with academic work.
- Copying another individual’s or group’s academic work.

- Allowing others to complete an assignment or portion of an assignment for you (e.g., having an online tutor complete your work, buying a paper, having another person complete a test for you).
- Using any material or aid that is not authorized by the person giving the test, project, or other assignment (e.g., artificial intelligence, websites, cell phone, calculator, notes, previous test materials) for an unfair academic advantage.
- Using, possessing, or distributing the contents of any examination (e.g., unauthorized access to test/quiz information, unauthorized duplication of test/quiz materials) without authorization.
- Engaging in an act of bribery or coercion. Bribery refers to soliciting, receiving, or giving an item of value in exchange for academic work.
- Taking, misplacing, or damaging property if the student knows or reasonably should know that an unfair academic advantage would be gained.

Falsification:

Misrepresenting or misleading others with respect to academic work or misrepresenting facts for an academic advantage. Prohibited behaviors include:

- Signing in for another student who is not in attendance, requesting this action of others, or signing into class and not attending the entire class period.
- Violation of classroom rules and/or failing to comply with instructions given by the person administering a test, project, or other assignment, or given in conjunction with the completion of course requirements.
- Interfering with an instructor's ability to evaluate accurately a student's competency or performance on any academic work.
- Fabrication of documents submitted in connection with academic work.

Complicity:

Assisting or attempting to assist another in any violation of the Honor Code. Prohibited behaviors include:

- Sharing academic work with another student (either in person or electronically) without the permission of the instructor.
- Communicating (either in person or electronically) with other students(s) or other individual(s) during an examination without the permission of the instructor.

All work submitted by a student is expected to be that student's own work **unless the instructor specifically states that students may work together on the assignment/homework/project, etc.** If permitted by the instructor, students may use their notes and books and other references for take-home examinations but cannot consult with each other.

If a student is writing a paper that uses external sources of information, **all external sources of information must be cited.** If the sources are used verbatim, the words must be in quotation marks and the source must be cited. If the sources have been paraphrased, the sources still must be cited. A paper submitted for one class may not be submitted for a subsequent class, unless a student has the express permission of the

professor of the subsequent class. This might happen if the current work builds upon previous work.

The Use of Artificial Intelligence (AI):

We are currently amidst a transformative era with the widespread availability of artificial intelligence (AI). On the one hand, AI can be embraced as a valuable tool to increase learning and productivity. Conversely, AI can introduce concerns about ethical conduct of research and violations of academic integrity if it is improperly used. In the current climate, you can expect that faculty will have a broad spectrum of approaches to the use of AI in the classroom, ranging from prohibiting the use of AI to prominently integrating AI into their course with the expectation that you will use it under defined parameters.

In this environment, it is important for you to be cautious and avoid putting yourself at risk for a violation of academic integrity via inappropriate use of AI. According to the USC Office of Student Conduct and Academic Integrity, the use of AI can be “a violation of Cheating-Unauthorized Aid, Cheating-Improper Collaboration, Plagiarism-Copying Work, or Falsification-Violation of Classroom Policies.” Be sure to check with your course instructor and be sure you adhere to the course policies before you use AI for any coursework.

This section is not meant to thoroughly cover all situations involving academic integrity. If questions arise, please discuss them with your instructor, advisor, or Graduate Director. Plagiarism and other violations of the Honor Code are serious offenses and will be taken up with the Office of Academic Integrity. For more information, visit the Office of Student Conduct and Academic Integrity [website](#).

Aspiring to Excellence in Integrity and Civility: The Carolinian Creed

The Carolinian Creed was authored by a group of students, faculty, and staff and approved by the Faculty Senate, Student Senate, and the USC Board of Trustees. The principles delineated in the Carolinian Creed articulate a vision of civility and positive interpersonal skills that are critical to career success in epidemiology and biostatistics.

The community of scholars at the USC is dedicated to personal and academic excellence. Choosing to join the community obligates each member to a code of civilized behavior.

As a Carolinian ...

- I will practice personal and academic integrity;
- I will respect the dignity of all persons;
- I will respect the rights and property of others;
- I will discourage bigotry, while striving to learn from differences in people, ideas and opinions;
- I will demonstrate concern for others, their feelings, and their need for the conditions which support their work and development.

COMMUNICATION

E-mail is the official means of communication at ASPH. E m a i l is used to communicate about departmental activities, invitations, deadlines for various events, mail from your professors, etc. Students should check their email regularly for important information.

Department Listserv

All departmental students must subscribe to the Department Listserv to keep up with what is happening in the department and in ASPH. Seminars, class changes, graduate assistantship and job opportunities, registration requirement updates, and other valuable information will be sent to you via the Listserv. Instructions for subscribing are below.

To Subscribe to the EPIDBIOS Listserv:

- Send an e-mail to: listserv@listserv.sc.edu
- No subject
- In text area type the following: "SUBSCRIBE EPIDBIOS Your Name"
- Send the message without a signature

Note: If the subscription is successfully sent, you will receive a message from the Listserv system informing you of your acceptance. If you are not successful, visit the ASPH Health Sciences Computer Lab (Discovery 431) or call University Technology Services at 803-777-1800 for assistance.

To Unsubscribe from the EPIDBIOS Listserv

To cancel your subscription to the listserv, send an email message to the server hosting the specific list, listserv@listserv.sc.edu. In the body of the message include the command: SIGNOFF EPIDBIOS. You must send this command from the email account you subscribed from (otherwise it will not delete your subscription).

Departmental Seminars

In addition to formal training experiences, the Department offers a monthly departmental seminar series that students should plan to attend to expand their breadth of knowledge of leading-edge research in an informal setting.

In addition to the monthly departmental seminar, students are encouraged to seek out other seminars offered within ASPH as well as other departmental learning forums such as thesis, dissertation, and practicum presentations.

Graduate Directors, Program Directors, and Support Staff

The following are individuals with whom you will become familiar while you are a student here. Their contact information is given below.

Graduate Directors and MPH Director

Susan Steck, Ph.D.
Graduate Director for Epidemiology
stecks@mailbox.sc.edu
803-777-1527

Robert Moran, Ph.D.
Graduate Director for Biostatistics
rmoran@mailbox.sc.edu
803-777-7876
803-665-6741 (cell)

Myriam Torres, Ph.D., M.S.P.H
Program Director, Epidemiology MPH
MCH Certificate Program Director
myriam.torres@sc.edu
803-777-6852

Graduate and Program Directors should be contacted directly if you have questions pertaining to:

- Program of Study and curriculum
- Advisement
- Progress towards degree completion
- Graduation requirements

Requests for forms can be emailed to the Program Coordinator.

Administrative Staff

Stephanie Kline
Business Manager
sdriver@mailbox.sc.edu
803-777-5876
803-777-7353

Janine Rominger
Program Coordinator
janiner@mailbox.sc.edu
803-777-7666

Chase Ferch
Grants Coordinator
ferchc@mailbox.sc.edu
803-777-8960

The Program Coordinator should be contacted directly for any questions about the degree programs, University policies and procedures, requests for forms, or other topics. If you are unsure about who to contact regarding a specific question related to the Department or University, always start with the Program Coordinator. The Business Manager and Grants Coordinator should be contacted directly only after being instructed to do so by a Graduate Director or the Program Coordinator. The Graduate School should be contacted only after being instructed to do so by a Graduate Director or Program Coordinator.

Faculty and Research Areas of Interest

Full-time Faculty

Swann A. Adams, Ph.D., University of South Carolina, 2003

Professor, College of Nursing and Epidemiology;

Research interests: cancer epidemiology, physical activity, breast cancer, and ethnic disparities in cancer

swann.adams@sc.edu

Sam Anyaso-Samuel, Ph.D., University of Florida 2023

Assistant Professor, Biostatistics

Research Interests: Integrative Analysis of Multi-Omics Data, Microbiome, Cancer Epidemiology, Graphical Models, Cluster-correlated data analysis, Univariate and Multivariate time-to-event data analysis

anyasosc@mailbox.sc.edu

Anthony J. Alberg, Ph.D., M.P.H. Johns Hopkins University, 1994 Professor and Chair, Department of Epidemiology and Biostatistics

Research interests: cancer epidemiology, including lung, skin, and ovarian cancers; health effects of tobacco products; tobacco control; epidemiology of tobacco use

alberg@mailbox.sc.edu

Pieter Baker, Ph.D., MPH, University of California San Diego-San Diego State University Joint Doctoral Program in Public Health, 2020

Assistant Professor, Epidemiology

Research interests: infectious diseases, substance use, drug policy/enforcement, human rights

pieter@mailbox.sc.edu

Nansi Boghossian, Ph.D., MPH, University of Iowa, 2011 Associate Professor, Epidemiology

Research interests: perinatal epidemiology, pregnancy complications, preterm birth, birth defects, global health

nboghoss@mailbox.sc.edu

Kyndall Braumuller, Ph.D., M.S., University of South Carolina, 2022

Research Assistant Professor, Epidemiology

Research interests: vector-borne disease epidemiology, vector-borne disease ecology, control of vector-borne diseases, One Health

kyndallb@email.sc.edu

Monique J. Brown, Ph.D., MPH, Virginia Commonwealth University – SOM, 2014

Director, Wellness and Collective Engagement, ASPH

Associate Professor, Epidemiology

Research Interests: social and behavioral epidemiology, psychosocial and behavioral factors associated with living with HIV/AIDS, aging and HIV/AIDS, life course, vulnerable populations, health disparities, sexual health, mental health, meditation analysis, adverse childhood experiences

Brownm68@mailbox.sc.edu

Bo Cai, Ph.D., University of Auckland, NZ, 2003

Professor, Biostatistics

Research interests: Bayesian random effects selection, nonparametric modeling, multivariate analysis, mixture models, and the relevant application area including human reproductive study, child health and toxicology, Computational statistics, Markov chain Monte Carlo methods, sampling methods based on Markov chain.

bocai@mailbox.sc.edu

***Alyssa Clay-Gilmour**, Ph.D., State University of New York at Buffalo, 2016

Associate Professor, Epidemiology

Research interests: genetic epidemiology, statistical genomics, relationships between exposures and genomic variants that modify susceptibility to cancer etiology and clinical outcomes, hematologic malignancies and blood and marrow transplantation

claygila@mailbox.sc.edu

Rahul Ghosal, Ph.D., North Carolina State University, 2019

Assistant Professor, Biostatistics

Research interests: functional data analysis, distributional data analysis, variable selection, survival analysis, Bayesian inference, physical activity, Alzheimer's disease.

rghosal@mailbox.sc.edu

Pengfei Guo, Ph.D., Yale University, 2024

Assistant Professor, Epidemiology

Research interests: environmental epidemiology, maternal and child health, brain health, causal inference, metabolomics.

pguo@mailbox.sc.edu

Beniamino Hadj-Amar, Ph.D., University of Warwick, 2020

Assistant Professor, Biostatistics

Research interests: **Methods**: Bayesian modeling, Bayesian computing, Gaussian processes, time series, Bayesian nonparametrics, Bayesian variable selection, change-point models, hidden Markov models, statistical spectral analysis, graphical models.

Applications: neuroscience, wearable devices, neuroimaging, circadian studies, respiratory research.

hadjamar@mailbox.sc.edu

James W. Hardin, Ph.D., Texas A&M University, 1992

Professor, Biostatistics

Research interests: applied research in behavior outcomes (risky sexual behavior, smoking cessation, etc.), applied research in health outcomes (orthopedics, cancer, and nutrition), network analysis, correlated data analysis, structural equation modeling

jhardin@mailbox.sc.edu

James R. Hébert, Sc.D., Harvard University, 1984

Health Sciences Distinguished Professor, Epidemiology; Director, Cancer Prevention and Control Program

Research interests: dietary assessment, diet and physical activity interventions, measurement bias, nutritional epidemiology, cancer epidemiology, complementary and alternative medicine

jhebert@sc.edu

Brandon Hollingsworth, Ph.D., North Carolina State University, 2020

Assistant Professor, Epidemiology

Research interests: spatial epidemiology, mathematical modeling, vector-borne diseases, health disparities, environmental factors that influence disease risk

Bh100@mailbox.sc.edu

Mufaro Kanyangarara, Ph.D., Johns Hopkins University, 2015

Associate Professor, Epidemiology

Research interests: infectious disease including malaria and HIV, maternal and child and global health

mufaro@mailbox.sc.edu

Danielle Kroboth, Ph.D., Tufts University, 2022

Assistant Professor, Epidemiology

Research interests: childhood obesity prevention, health inequities, structural and interpersonal discrimination, U.S. food and nutrition policy, community-based participatory methods, social epidemiology

dkroboth@mailbox.sc.edu

Angela D. Liese, Ph.D., University of North Carolina, 1996

Professor, Epidemiology

Research interests: dietary assessment, epidemiology of obesity, diabetes and cardiovascular disease, emphasis on children and youth

liese@mailbox.sc.edu

Jihong Liu, Sc.D., Harvard University, 2003

Professor and Division Director for Epidemiology

Director of Maternal and Child Health Catalyst Program

Research interests: maternal and child health epidemiology, reproductive epidemiology, physical activity and nutrition in pregnancy and early life, health disparity, survey data collection and analysis, international health

jliu@mailbox.sc.edu

Matthew C. Lohman, Ph.D., MHS, Virginia Commonwealth University, 2014

Associate Professor, Epidemiology

Research interests: epidemiology of aging, psychiatric epidemiology, survey data analysis, cognitive health, determinants and distribution of falls, injuries, and hospitalization

lohmanm@mailbox.sc.edu

Katie Lynn, Ph.D. M.S, University of South Carolina

Research Assistant Professor, Epidemiology

Research Interests: neglected and vector-borne diseases epidemiology, socio-ecological drivers of disease, maternal-child health, onehealth, implementation science

Lynnmk@mailbox.sc.edu

Alexander McLain, Ph.D., University of South Carolina, 2008

Professor, Biostatistics

Research interests: Statistical machine learning, high-dimensional statistics, multiple testing, Bayesian variable selection, approximate Bayesian inference, clustered data, and spatial-temporal models.

mclaina@mailbox.sc.edu

Anwar Merchant, Sc.D., Harvard University, 2001

Professor, Epidemiology

Research interests: improving health and preventing disease through lifestyle changes; possible effects of lifestyle on disease, and societal and personal factors influencing lifestyle; relation between infection and chronic disease

merchant@mailbox.sc.edu

Maggi Miller, Ph.D., M.S., University of South Carolina, 2012

Research Assistant Professor and South Carolina Alzheimer's Disease Registry

Co-Director, Office for the Study of Aging

Research interests: Alzheimer's disease and related disorders, caregivers of individuals with Alzheimer's disease, social capital, survey development

chandlmj@mailbox.sc.edu

Robert Moran, Ph.D., University of South Carolina, 2004

Clinical Associate Professor and Graduate Director for Biostatistics

Research interests: nutritional instruments; data management

rmoran@mailbox.sc.edu

Melissa Nolan, Ph.D., MPH, Baylor College of Medicine, 2015

Associate Professor, Epidemiology

Research interests: infectious diseases and health disparities

msnolan@mailbox.sc.edu

Andrew Ortaglia, Ph.D., University of South Carolina, 2012

Clinical Associate Professor, Biostatistics

Research interests: semi-parametric models, survival analysis, health aspects of physical activity

ortaglia@mailbox.sc.edu

***Nandita Perumal**, Ph.D., MPH, University of Toronto, 2019

Assistant Professor, Epidemiology

Research interests: perinatal epidemiology, maternal and child health, maternal nutrition, childhood growth and development, global health

nperumal@mailbox.sc.edu

Enakshi Saha, Ph.D., University of Chicago, 2021

Assistant Professor, Biostatistics

Research interests: Bayesian statistics, machine learning, computational biology and bioinformatics

esaha@mailbox.sc.edu

Stella Self, Ph.D., Clemson University, 2019

Associate Professor, Biostatistics

Research interests: Bayesian spatio-temporal modeling, models for forecasting vector-borne disease, regression models for group testing data, spatial clustering analysis
scwatson@mailbox.sc.edu

Nelis Soto-Ramirez, Ph.D., MS, MPH, University of South Carolina, 2012

Clinical Assistant Professor, Epidemiology

Research interests: maternal and child health, perinatal epidemiology, child welfare, epigenetics
sotorami@mailbox.sc.edu

Susan E. Steck, Ph.D., MPH, RDN, University of North Carolina at Chapel Hill, 1999

Professor, Epidemiology, Graduate Director for MS and PhD in Epidemiology;

Research interests: nutrition and cancer prevention and survivorship, personalized nutrition, health disparities, dietary patterns, biomarkers

ssteck@sc.edu

Myriam E. Torres, Ph.D., MSPH, University of South Carolina, 2001

Assistant Dean for Public Health Practice

Clinical Professor and MPH Program Director of Epidemiology; Maternal and Child Health Graduate Certificate Program Director; Director, Consortium for Latino Health Studies

Research interests: Hispanic/Latino health issues, perinatal issues among Latinas, International research

torresme@mailbox.sc.edu

Yuan Wang, Ph.D., University of Wisconsin-Madison, 2018 Associate Professor, Biostatistics

Research interests: joint modeling of structural and functional neuroimaging data, topological signal processing of neuroimaging time series, topological brain network analysis

wang578@mailbox.sc.edu

Michael D. Wirth, Ph.D., MSPH, University of South Carolina, 2012

Assistant Professor, College of Nursing and Epidemiology; Research Investigator, Connecting Health Innovations (CHI) LLC

Research interests: circadian rhythm disruption (e.g., shift work, clock gene polymorphisms, sleep disruption, hormone secretion), cancer epidemiology, the Dietary Inflammatory Index, occupational epidemiology, cancer screening, health disparities

wirthm@mailbox.sc.edu

Jiajia Zhang, Ph.D., Memorial University of Newfoundland, 2007 Professor, Biostatistics

Research interests: Semiparametric/Nonparametric methods and inference for survival data including mixture cure model, joint model, illness death model; statistical computation, data science for electronic health records.

jzhang@mailbox.sc.edu

Yanan Zhang, Ph.D., University of South Carolina, 2023

Clinical Assistant Professor, Biostatistics

Research interests: Bayesian data analysis, survival analysis, statistical applications in the fields of epidemiology.

Yanan@email.sc.edu

***Drs. Clay-Gilmour and Perumal are on the faculty through August 31, 2026.**

Emeritus Faculty

J. Wanzer Drane, P.E., Ph.D., Emory University, 1967 Distinguished Professor Emeritus

Research interests: space-time statistics, biometric modeling of mammalian biology, nonlinear regression, statistics of geographical information systems, mail-back questionnaires, community trials, and improving biostatistics in developing countries

Linda J. Hazlett, Ph.D., MPH, MT (ASCP), University of South Carolina, 2004 Clinical Associate Professor Emeritus, Epidemiology

Research interests: cancer epidemiology, clinical research, pedagogy

James R. Hussey, Ph.D., Virginia Polytechnic Institute and State University, 1983

Clinical Associate Professor, Biostatistics

Research interests: experimental design, mixed models, longitudinal data analysis

Robert E. McKeown, Ph.D., University of South Carolina, 1991; Ph.D., Duke University, 1976

Distinguished Professor Emeritus; Adjunct Faculty; Past Chair, Department of Epidemiology and Biostatistics; Past President, American College of Epidemiology; Past Chair, APHA Epidemiology Section.

Research interests: psychiatric epidemiology, child and adolescent health, public health statistics, public health ethics; social capital and faith communities

Harris Pastides, Ph.D., Yale University, 1980

Professor Emeritus and Interim President, University of South Carolina

Research interests: health disparities research, occupational and environmental epidemiology, international health, and applied research in developing country environmental health issues

Adjunct Faculty

Cheryl L. Addy, Ph.D., Emory University, 1988

Professor and Chair of Biobehavioral and Nursing Science, USC College of Nursing

Research interests: categorical data analysis, survey data analysis, epidemiologic methods, physical activity and public health, psychiatric epidemiology, maternal and child health

Daheia J. Barr-Anderson, Ph.D.

Adjunct Professor; Professor, College of Health and Human Services, University of North Carolina Charlotte

Research interests: community and home-based interventions, physical activity epidemiology, obesity and physical activity among African Americans

Nathaniel Bell, Ph.D.

Adjunct Assistant Professor; Director of Research and Evaluation, Institute for Families in Society, USC College of Social Work

Research interests: GIS; spatial, socioeconomic, and behavioral determinants of health.

Eric Brenner, M.D.

Adjunct Associate Professor

Research interests: communicable disease control programs, tuberculosis and vaccine preventable diseases.

Jim Burch, Ph.D.

Adjunct Professor; Professor of Epidemiology, Virginia Commonwealth University.

Research interests: Molecular epidemiology, cancer epidemiology, environmental and occupational health

Virginie Daguise, Ph.D.

Adjunct Assistant Professor; Bureau Director, Chronic Disease and Injury Prevention – SC Department of Public Health. Research interests: cancer epidemiology

Jan Eberth, Ph.D.

Professor and Chair, Health Management and Policy, Drexel University

Research interests: Cancer screening and prevention, social epidemiology and health disparities, medical geography and GIS applications, access

Marco Geraci, Ph.D.

Adjunct Professor; Professor of Statistics, Sapienza University of Rome

Research interests: Statistical methods and applications for health sciences, quantile inference, random-effects models, multivariate statistics, spatial statistics

Khosrow Heidari, MA, MA, MA

Adjunct Instructor, Senior Epidemiology, Bureau of Drug Control, South Carolina Department of Public Health.

Godwin Mbamalu, Ph.D. FAIC

Adjunct Professor, Distinguished Professor of Chemistry at Benedict College. Research interests: environmental and analytical chemistry and health disparities.

Suzanne McDermott, Ph.D.

Adjunct Professor; Professor, CUNY Graduate School of Public Health

Research interests: Epidemiology of neurodevelopmental disability in newborns, perinatal epidemiology, disability epidemiology, design of randomized intervention study

Nitin Shivappa, Ph.D. Adjunct Assistant Professor

Research interests: dietary inflammatory index, cardiovascular diseases and menthol cigarette smoking

Feifei Xiao, Ph.D.

Adjunct Associate Professor; Associate Professor of Biostatistics, University of Florida

Research interests: Gene-gene or gene-environment interaction, copy number variation (CNV) detection and association study, epigenetics modeling, cancer, pediatrics & psychiatry, big data analyses, cancer genetic epidemiology using public health data sets.

Biostatistics M.S. Degree Program

Goals and Learning Outcomes of the Master of Science in Biostatistics

The purpose of the Master of Science (MS) degree in biostatistics is to prepare students, through quality lecture and practical experiences and other research opportunities, for involvement in biostatistical research, including application of existing statistical theory to health problems, formulation of designed experiments, and adaptation of existing statistical theory for emerging health related problems. Specifically, a student who successfully completes this degree will satisfy the following goals.

Goal 1

M.S. program graduates will demonstrate a mastery of biostatistical techniques, know which of these is most appropriate in a given situation, and know how to perform and interpret the analyses of these techniques.

- **Learning outcome 1:** Students will demonstrate the ability to evaluate a given health related problem and to identify the most appropriate statistical technique for analysis.
- **Learning outcome 2:** Students will demonstrate the ability to interpret the results of a statistical analysis and to communicate such interpretations in an easily comprehensible manner.
- **Learning outcome 3:** Students will display a mastery of a variety of traditional and newly developed statistical techniques.

Goal 2

M.S. program graduates will demonstrate the ability to use a variety of statistical software packages to obtain, manage, and analyze public health data.

- **Learning outcome 1:** Students will demonstrate the ability to structure available data in an easily usable form using a variety of data management software tools.
- **Learning outcome 2:** Students will demonstrate the ability to use a variety of statistical software packages, to create and maintain databases, and to analyze data.

Goal 3

M.S. program graduates will effectively communicate with both biostatisticians and non-biostatisticians to explain methodology and interpret results of analyses.

- **Learning outcome 1:** Students will demonstrate the ability to work independently on a research problem outside of the classroom setting and present the results to an audience.
- **Learning outcome 2:** Students will demonstrate the ability to modify and extend existing statistical techniques to answer questions posed by health-related situations and to synthesize such research results into acceptable research papers

Biostatistics M.S. Degree Programs

Important Dates & Forms

Below you will find specific dates related to the MPH in Epidemiology progression; for official USC dates, visit the [Office of the Registrar](#), University of South Carolina official Academic Calendars.

Prior to Arriving	
	Subscribe to the Listserv and familiarize yourself with MySPH
	Contact Graduate Director to be set up an advisement appointment.
Fall 2026	
August 5-12	Graduate Assistantship Training and International Teaching Assistant Training
August 17	New Student Orientation
August 18	First Day of Classes
August 24	Last Day to Change/drop a course without a grade of W
September 7	Labor Day (no classes)
October 15-16	Fall Break (no classes)
October 19	Contact your advisor about registering for Spring classes
November 4	Last day to drop a course or withdraw without a WF
November 22 - November 29	Thanksgiving Break (no classes)
December 4	Last Day of Classes
December 7-14	Final Exams
Spring 2027	
January 11	First Day of classes
January 18	Martin Luther King Day of Service (no classes)
January 19	Last Day to Change/drop a course without a grade of W
March 7-14	Spring Break (no classes)
March 15	Contact your advisor about registering for Fall classes
March 29	Last day to drop without a WF
April 26	Last Day of Classes
April 28-May 5	Final Exams
May 1	Deadline to submit Master's program of Study (MPOS) to Graduate Director for approval

Advisement and Progression Information

Academic Advisor

After admission to the Department of Epidemiology and Biostatistics, each student will be assigned a departmental faculty member to serve as an academic advisor. Generally, this advisor will work with the student throughout the course of the program. Students are advised as to appropriate courses, sequencing of courses, independent study topics, thesis topic, and any additional work appropriate to preparing the student to meet career objectives. The student may ask the Graduate Director for a change of academic advisor for a variety of different reasons; students are encouraged to speak with the Graduate Director well in advance if contemplating a change in advisor.

Communication

Clear and regular communication is critical to establishing and maintaining a meaningful working relationship between you and your academic advisor. Expectations should be discussed at the first meeting between the student and academic advisor to include the following: preferred methods of communication (e.g., email, telephone, walk-in, etc...); frequency of meetings; and who is responsible for scheduling meetings.

Advisement

Students meet with their academic advisors before each semester to fill out an advisement form (AS-133R). In the academic advisor's absence, the form can be signed by the Graduate Director. This form must be filled out and either turned in (PHRC 108) or emailed (sphstsrv@mailbox.sc.edu) to the Office of Graduate Student Services (GSS) before a student can register for classes. GSS will check for any holds on a student's registration. Once all holds have been cleared, GSS will email the approved advisement form to the student at which time they can register online for classes. Be sure to include your email address on your advisement form.

Annual Academic Review of M.S. Students

All master's students who remain in the program after two years must complete an academic progress report by October 1 of their third fall semester, and every fall semester following.

Forms will be distributed to students from the department and an announcement/reminder of this requirement will be made each fall. There are two parts to the evaluation and review: a part completed by the student and a part completed by the student's thesis advisor. The academic progress report will be evaluated by the Department's Leadership Team, which includes the Department Chair, Division Director, and Graduate Program Director. Students will receive a letter following the Leadership Team's review informing the student of their progress and any steps that should be taken to improve progress toward degree.

Program of Study

The Program of Study is a critical step to accomplish for each graduate student in the Biostatistics program. The Program of Study lists all courses taken to fulfill degree requirements. The Program of Study is developed by the student and academic advisor by the completion of the spring semester of student's first year. All coursework taken by the student must be approved by the academic advisor and Graduate Director. To ensure you have included all required courses, please use the M.S. in Biostatistics Degree Requirements listed on page 42 as your guide. The Master Program of Study Form (MPOS) must be signed by the student, student's academic advisor and the Graduate Director and filed with The Graduate School no later than the end of the first year. Courses taken for undergraduate credit can never be on any program of study.

Any changes to the MPOS form must be submitted to the Graduate Director using the Request for Adjustment in Graduate Program form (GS-43 or POSA) prior to graduation.

Transfer Credits

The Program of Study may include graduate credits transferred from another USC program or another institution. To be accepted for transfer credit, the courses must:

- Be relevant to the program into which they are transferred.
- Have course content equivalent to similar courses at USC, and a level of instruction equivalent to that of the Arnold School of Public Health.
- Have a grade of "B" or better from an accredited institution.
- Be completed within the six-year period for courses used in the master's program.
- Must not have appeared on another program of study.

Transfer credit is at the discretion of the department and must be approved by the Graduate Director. The student may be required to provide course syllabi (including course schedule) and transcript verifying grade received prior to approval of transfer credits. **No more than 12 hours of graduate credit can be transferred to master's programs in Biostatistics.**

Revalidation of Out-of-Date Courses

The maximum time for degree completion is six (6) years for master's students. The Graduate School requires that the master student's Program of Study not have any courses taken more than six years ago. However, it is still possible to revalidate the courses that exceed these deadlines. The requirement for revalidation of the courses will be left up to the discretion of the faculty member who originally taught the student. If the instructor is no longer on the faculty, a faculty member who currently teaches the class will be responsible for revalidating the coursework. See your Graduate Director for more information. The form (PRE-Permit for Revalidation Examination) is available on the Graduate School [Forms Library website](#).

Academic Standard for Progression

NOTE: The following departmental policy is more stringent than the general policy for the Graduate School.

All graduate students are subject to the academic policies, regulations, and academic standards of both the Graduate School and the department, school and/or college in which enrolled.

The department core courses for M.S. in Biostatistics are: BIOS 701, BIOS 709, BIOS 711, BIOS 712, BIOS 745, BIOS 757, BIOS 758, and EPID 701.

A student with a **grade lower than “B”** grade on a **single core course** must retake the class prior to graduation, regardless of performance on the Comprehensive Exam (See Examination Section). Retaking the course and receiving a grade of “B” or better does not replace the original grade on the student’s record.

A **grade of “U” or grades below “B” on six (6) or more graduate credit hours** in the Department’s core courses will result in the dismissal of the student from the Biostatistics Graduate Program and disqualification for a graduate degree in Biostatistics.

Comprehensive Examination

In addition to their coursework, the University requires all master’s students to pass a Comprehensive Assessment. For the division of biostatistics, the Comprehensive Assessment is in the form of a Comprehensive Examination.

Purpose

The purpose of the Exam is to evaluate the knowledge acquired by the student in the core and major courses and to evaluate mastery of the major concepts and methodologies in the discipline.

Exam Preparation

The Exam will typically be a closed book, four-hour exam held in a classroom setting. Students will be provided with a formula sheet of the standard formulas needed for the Exam content. Students may use a calculator but other electronic devices (including laptops, cell phones, etc.) are forbidden.

The Exam is prepared by the Division of Biostatistics Exam Committee with assistance from other Biostatistics faculty. The Comprehensive Exam focuses on the theory and methods presented in BIOS 745, BIOS 758, BIOS 759, BIOS 761, STAT 512, STAT 513, as well as more advanced topics from BIOS 701 and BIOS 757.

The Comprehensive Exam is usually taken at or near the completion of the required departmental coursework (i.e., after the students have completed the courses covered on the Exam) and must be completed/passed no more than two years prior to the student’s graduation. Any student who has not graduated within two years of completing/passing the Comprehensive Exam must retake it.

In the event a student earns an overall GPA below 3.5 in the following courses (BIOS 701, BIOS 757, BIOS 758 and STAT 512), the biostatistics division will offer a series of review sessions designed to aid in preparing for the Comprehensive Exam. These review sessions will begin at/near the beginning of the spring semester.

Registration

Students must register with the Program Coordinator to take the Comprehensive Exam. Registration opens one month prior to the Exam and closes two weeks prior to the Exam.

If a student registers to take the Comprehensive Exam and does not take it, this will count as a failed attempt unless the registration is cancelled at least one week prior to the Examination date.

Results

The Comprehensive Exam is graded as a simple pass/fail and students will be notified in writing of the results as soon as possible after faculty evaluation of the Exam. Faculty members will not discuss exam results with any individual students until all the students have received official notification. After students have been notified of results, a student may meet with their advisor to discuss their performance on the Exam. Each student is allowed two attempts to pass the Comprehensive Exam. If the second attempt is required, the second attempt will occur at the end of the spring semester on the Friday of the first full week after commencement. Because the student has essentially completed their program of study, they may take additional elective courses during this time. If a student does not pass the Exam on the second attempt, they will not be allowed to continue in the program.

Examination Schedule

	2027	2028
Comprehensive ‡	1/29/2027	1/28/2027
Comprehensive retake*	5/14/2027	5/12/2027

*Friday of the first full week after Spring commencement

‡ Third Friday of Spring semester

Degree Requirements for M.S. in Biostatistics

A minimum of 44 credit hours is required for the Master of Science in Biostatistics. Students are required to have two semesters of calculus and an introductory course or its equivalent in matrix algebra or will be expected to make up the deficit beyond the minimum program of study. Additional courses may be required to meet prerequisites or to accommodate electives.

Summary of Degree Requirements for M.S. in Biostatistics

SPH Core	3 hours
Department Core	16 hours Major
Courses	16 hours
Electives	3 hours
Thesis	<u>6 hours</u>
Total	44 hours

School of Public Health Core (3 hours)

PUBH 700 (3) Perspectives in Public Health

Department Core (16 hours)

BIOS 701 (3) Concepts and Methods of Biostatistics
BIOS 757 (3) Intermediate Biostatistics
BIOS 758 (3) Advanced Linear Model in Biostatistics
EPID 701 (3) Concepts and Methods of Epidemiology
BIOS 745 (1) Seminar in Biostatistics
BIOS 709 (1) Basic Software for Public Health
BIOS 711 (1) Introduction to R Programming
BIOS 712 (1) Introduction to Stata Software

Major Courses (16 hours)

BIOS 759 (3) Theory and Methods of Discrete Data Analysis
BIOS 761 (3) Survival Analysis I
BIOS 770 (3) Applied Longitudinal Data Analysis
STAT 512 (3) Mathematical Statistics
STAT 513 (3) Theory of Statistical Inference
BIOS 746 (1) Introduction to Complex Survey Analysis

Electives (3 hours)

Electives are chosen from courses at the University which support the overall educational goals of the student. The Faculty Advisor must approve all elective courses.

Recommended Electives:

BIOS 735 (3) Machine Learning
BIOS 740 (3) Functional Data Analysis
BIOS 760 (3) Biostatistical Methods in Clinical Trials
BIOS 762 (3) Genetic Statistics I
BIOS 767 (3) Spatial Statistics for Public Health
BIOS 768 (3) Signal & Network Analysis for Public Health
BIOS 772 (3) AI for Biomedical Data
BIOS 811 (3) Survival Analysis II
BIOS 818 (3) Advanced Computational Statistics for Signal & Network Analysis
BIOS 820 (3) Bayesian Biostatistics and Computation
BIOS 822 (3) Statistical Methods in Spatial Epidemiology
BIOS 825 (3) Multivariate Methods
EPID 741 (3) Epidemiologic Methods

Thesis (6 hours)

BIOS 799 (6) Thesis Preparation

Typical Course Sequence for M.S. in Biostatistics

Semester	1	2		3	4
	Fall	Spring	Summer	Fall	Spring
PUBH 700 (3)	PUBH 700 (3)				
DEPT CORE (16)	EPID 701 (3)	BIOS 757 (3)			
	BIOS 701 (3)	BIOS 758 (3)			
	BIOS 709 (1)	BIOS 712 (1)			
	BIOS 711 (1)				
	BIOS 745 (1)				
MAJOR COURSES (16)				BIOS 759 (3)	BIOS 770 (3)
		STAT 512 (3)		BIOS 761 (3)	BIOS 746 (1)
				STAT 513 (3)	
ELECTIVES (3)					ELECTIVE (3)
THESIS (6)				BIOS 799 (1)	BIOS 799 (5)
Total Credits (44)	12	10		10	12

If you would like to take thesis hour(s) in the fall of your second year, this may be a good option for you.

M.S. Biostatistics Master's Thesis

Purpose of the Master's Thesis

All M.S. students must complete a research project culminating in a thesis. The purpose of the master's thesis is to apply the principles and methods learned during coursework and demonstrate basic biostatistical research skills with applications in public health data. After completion of the thesis, the student should be able to demonstrate the ability to:

- Extend a known statistical technique to a new area, or apply a known technique in a novel setting;
- Review the current literature as context for the research question;
- Describe the statistical issue in the context of the current literature or a real data problem which motivates the proposed approach;
- Conduct analyses to illustrate the technique or statistical issue;
- Clearly present and interpret analytical results;
- Draw appropriate inferences based on analytical results;
- Discuss statistical findings in context of the current literature and implications for public health and future research.

Thesis Committee

The student, in consultation with their Academic Advisor, will select a Thesis Chair from the Biostatistics faculty (check under Full-time Faculty). Selection of the Thesis Chair should reflect the student's research area of interest. The Thesis Chair is primarily responsible for advising and mentoring the student throughout the thesis. The Thesis Chair and student will work together to identify additional members of the Thesis Committee. The student is expected to be actively involved in assembling the committee, inquiring each prospective faculty member if they would be willing to serve on the committee. The committee will consist of a minimum of three members, including the Thesis Chair and at least one other departmental faculty member whose research interests are aligned with the student's thesis goals. The third member may be from any other academic department who has expertise and interest in the student's research area. Additional members having special expertise may serve at the student's and Thesis Chair's discretion. Once the committee members are finalized, the student completes a Master's Thesis Committee Appointment Form and submits it to Graduate Director for approval.

Registering for Thesis Hours

Students actively working on their thesis can register for thesis credit hours (BIOS 799) only if approved by the Thesis Chair. Contact the Program Coordinator for thesis section. A total of six thesis credit hours are required for graduation. If a student completes the requisite six thesis credit hours and has not defended and submitted the thesis, the student must register for at least one thesis credit hour each semester that they are working on the thesis.

Thesis Timeline

The complete thesis must be read, critically evaluated, and approved by all members of the Thesis Committee. In accordance with [Graduate School guidelines](#), the following deadlines must be met.

- a. Initially, the student **must prepare a written thesis proposal and present the proposal** to the Thesis Committee for approval. Typically, the thesis proposal consists of the introduction, literature review, potential issues/motivations, and statistical methodology that the student intends to use for the thesis, which forms the basis of the first two chapters of the final thesis. The presentation of the proposal should be no less than 3 months prior to the thesis defense. The Thesis Proposal Approval form must be submitted to the Graduate Director upon completion of proposal defense (see Forms section).
- b. A first draft of thesis should be submitted to the Thesis Committee at least two weeks before the defense (six weeks before the date of graduation), or earlier if requested by the committee (please refer to the suggested sample timeline on page 46).
- c. The final copy of the thesis is to be submitted to each committee member at least 30 days prior to the end of the semester (see timetable for approximate dates) or at least two weeks prior to the thesis defense, whichever is earlier (please refer to the suggested timetable on page 46).
- d. The thesis defense should be scheduled for a date after all members of the Thesis Committee receive the final copy of the thesis.

Announcements of the presentation should be posted at least one week prior to the defense. The thesis defense should be scheduled in an available classroom or conference room. Please contact the Program Coordinator to prepare announcements and schedule a room.

- e. There are two phases of the thesis defense: public presentation and the oral exam. The candidate must publicly present the thesis in a 30-45-minute presentation. Following this, the candidate must pass an oral examination, which shall be administered immediately following the presentation and evaluated by the Thesis Committee. The oral examination will focus on the technical and scientific aspects of the thesis topic and may cover any subject matter relevant to the student's field of study. One of three decisions may be reached at the end of the thesis defense:
1) accepted as is; 2) accepted on the condition that certain changes are made within a specified time frame; 3) rejected.

- f. Not later than five weeks before graduation, the thesis draft should be submitted via the electronic thesis and dissertation (ETD) process to The Graduate School for preliminary thesis format check. The student can view the format guide, ETD samples, and templates and submit their document at the Thesis & Dissertation portal. The student is responsible for making sure the thesis meets The Graduate School's requirements.
- g. All Thesis Committee members must approve the final version and sign the Thesis Signature and Approval form (TSF) (see Forms). If the student, with committee approval, should wish to publish a manuscript from their thesis, a letter requesting delayed release (embargo) of dissemination must accompany the TSF, signed by the student's Thesis Chair and Graduate Director.
- h. The student should provide each Thesis Committee member with a PDF copy of the thesis as submitted to The Graduate School or in a manner agreed upon by the committee member. Final approval is given by The Graduate School via the ETD process. The final approved thesis must be submitted via the ETD process no later than 20 days before graduation.

Sample Thesis Timeline for Graduation in May, August, or December

Task	For graduation in		
	May 2027	August 2027	December 2027
Suggested thesis proposal defense – must be at least 3 months prior to thesis defense	Early January	Early April	Early August
First complete version to committee – at least 3 weeks prior to final defense	Early March	Early June	Early October
Suggested defense date – do not wait until the last day to defend	Late March	Late June	Late October
Thesis defense deadline AND Thesis format and check deadline via ETD	Early April	Early July	Early November
Final submission of thesis approved by committee – submitted via ETD	11 days after final defense deadline (3 rd week April)	11 days after final defense deadline (3 rd week July)	11 days after final defense deadline (3 rd week Nov)

***IMPORTANT:** Please note that these dates are only approximations of the actual dates. It is your responsibility to check the updated school calendar regarding the actual dates.

Human Subjects Approvals

In consultation with the Thesis Chair, the student may need to obtain IRB approval for thesis research. All thesis research involving human subjects must be reviewed and approved by the appropriate ethics review committee. Research qualifying for exemption (typically secondary data analysis of existing data, observational studies with adults, or evaluation of service/public activities) should be approved by the SPH Institutional Review Board Liaison. The IRB application must be completed online at <http://orc.research.sc.edu/irb.shtml>. It will be necessary to register the first time you enter the site. Some projects must also be approved by the review committee at the agency where the research is conducted. Any necessary approvals must be obtained prior to beginning work on the defined thesis tasks. Some thesis activities related to an ongoing research project may be covered under that project's IRB approval. This should be discussed with the project principal investigator and/or Thesis Chair. In most situations, notification of the IRB or IRB liaison of a change in protocol is sufficient.

Master's Thesis FAQs

When should I start working on my master's thesis?

Students are encouraged to discuss thesis ideas with faculty members and advisors as soon as they enter the program. Attending departmental, research center/institute, school-wide, and university seminars to learn about the research of faculty members or emerging topics in the field can help one develop a topic. Other ways to begin the thesis include reading and researching topics that you find interesting and working as a graduate research assistant on a topic of interest.

What are acceptable research topics for a master's thesis in biostatistics?

Acceptable research topics for a master's thesis in biostatistics include the development of a new data analytic method, studies of theoretical properties or/and empirical performance of an existing method, comparative analysis of various methods through simulation or/and real data studies, software development of an existing method without an available package, and a review or synthesis of a new or emerging area of statistical methodology or application.

How can I find a dataset to analyze for my master's thesis?

There are several publicly available electronic health datasets (e.g. BRFSS, NHANES, SEER, and NHIS). Additionally, students may be granted access to a faculty member's research data upon application. However, written permission from whomever owns that dataset, and necessary IRB approval, must be obtained.

What are the roles of the thesis committee members?

The Thesis Chair has the primary responsibility for advising you throughout the entire thesis process. This includes helping you to form the thesis committee, providing research guidance and feedback (e.g., refine research question, identify sources of data, troubleshoot issues, develop high quality thesis drafts) convening and chairing committee meetings.

The other committee members may advise on structure of the project, analysis of data, design of simulation studies, and interpretation of analytical results. They may also provide comments on drafts of the thesis.

Am I required to publish my master's thesis?

Publishing the master's thesis is not a requirement to fulfill for the master's degree. However, the thesis should meet sufficient quality standards for publication in a peer-reviewed journal (note that a master's thesis will usually contain substantially more detail than is appropriate for journal publication). As a department committed to the highest levels of scholarship and to your professional well-being, we encourage publication of your master's thesis. Regardless of your career path, first authorship on a peer-reviewed publication reflects the quality of your thesis research and will open doors in the public health practice and research settings. You are encouraged to discuss this with your Thesis Chair.

How many pages should the thesis proposal and the thesis have?

There are no requirements for this – it varies greatly between theses and depends on the nature and scope of the project. Students are encouraged to read theses of students who have graduated from the department to get an idea as to the scope and length. You can access previous theses and dissertations using the [Dissertations and Theses Global Database](#) on the library website.

Does the department require a specific reference style?

No. Students may choose from any number of reference styles, provided their Thesis Chair approves the choice. Typical reference styles include but are not limited to APA, AMA, Chicago, Vancouver, MLA, and Harvard. Students are encouraged to use a reference management program, such as Mendeley, Zotero, or Endnote.

Graduate Certificate in Biostatistics

Overview

The Graduate Certificate in Biostatistics (GCIB) is a 15-credit hour certificate program open to anyone who is post-baccalaureate and wishes to enhance the student's ability to manage and analyze data and perform quantitative research in fields related to clinical and population health. For more information about this certificate program, please contact the Biostatistics graduate director.

The purpose of the Graduate Certificate in Biostatistics (GCIB) degree in biostatistics is to prepare students, through quality lecture and practical experience through a capstone project, for involvement in biostatistical research for emerging health related problems. Specifically, a student who successfully completes this degree will satisfy the following goals.

Goal and Learning outcomes

GCIB program graduates will demonstrate a mastery of biostatistical techniques, know which of these is most appropriate in a given situation, and know how to perform and interpret the analyses of these techniques.

Learning outcome 1: Students will be able to apply appropriate methods of biostatistical inference, including their implementation in standard statistical software and the communication and proper interpretation of the results.

Learning outcome 2: Students will be able to read, understand critically evaluate statistical analysis commonly used in professional articles in public health.

Program of Study

The Program of Study lists all courses used to fulfill degree requirements and is developed jointly by the student and academic advisor. It must be approved and signed by the student, advisor, and Graduate Director, then submitted to the Graduate School. Refer to the GCIB in Biostatistics Degree Requirements to ensure all required courses are included.

Transfer Credits

The Program of Study may include up to nine (9) hours of graduate credit from another USC program that can be applied toward the GCIB, but not from outside the University of South Carolina. At least six (6) hours of the GCIB must be completed through new courses.

Revalidation of Out-of-Date Courses

The maximum time for degree completion is six (6) years for the GCIB. The Graduate School requires that the master student's Program of Study not have any courses taken more than six years ago. However, it is still possible to revalidate the courses that exceed these deadlines. The requirement for revalidation of the courses will be left up to the discretion of the faculty member who originally taught the student. If the instructor is no longer on the faculty, a faculty member who currently teaches the class will be responsible for revalidating the coursework. See your Graduate Director for more information. The form (PRE-Permit for Revalidation Examination) is available on the Graduate School [Forms Library website](#).

Academic Standard for Progression

NOTE: The following departmental policy is more stringent than the general policy for the Graduate School.

All graduate students are subject to the academic policies, regulations, and academic standards of both the Graduate School and the department, school and/or college in which enrolled.

A student with a **grade lower than “B”** grade on a **single core course** must retake the class prior to graduation. Retaking the course and receiving a grade of “B” or better does not replace the original grade on the student's record.

A **grade of “U” or grades below “B” on six (6) or more graduate credit hours** in courses will result in disqualification from the Graduate Certificate in Biostatistics program.

Degree Requirements for GCIB in Biostatistics

A minimum of 15 credit hours is required for GCIB.

Category	Course(s)	Credits
Required Coursework (9 credits)		
Introductory Biostatistics (3credits)	Choose one: BIOS 701 – Concepts and Methods of Biostatistics BIOS 700 – Introduction to Biostatistics PUBH 725 – Quantitative Methods for Public Health Practice II	3
Intermediate Biostatistics (3credits)	BIOS 757 – Intermediate Biostatistics	3
Data Management and Programming (3 credits)	Choose courses to meet 3 credits: BIOS 710 – Effective Data Management in Public Health BIOS 709 – Basic Software for Public Health BIOS 711 – Introduction to R Programming BIOS 712 – Introduction to Stata Programming BIOS 714 – Introduction to MS Access for Public Health BIOS 719 – Advanced SAS Methods for Public Health	3
Elective Coursework (6 credits)	Choose two: BIOS 735 – Machine Learning BIOS 740 – Functional Data Analysis BIOS 754 – Discrete Data Analysis BIOS 755 – Introduction to Longitudinal Data Analysis BIOS 760 – Biostatistical Methods for Clinical Trials BIOS 761 – Survival Analysis BIOS 767 – Spatial Statistics for Public Health BIOS 768 – Signal & Networks BIOS 772 – AI for Biomedical Data	6
Total		15

Note – No more than 9 hours may be used concurrently with another program of study.

For additional information about application process, visit the [website](#).

Ph.D. in Biostatistics

Goals and Learning Objectives for the Ph.D. in Biostatistics

The Doctor of Philosophy prepares students, through quality lecture and practical experiences and other research opportunities, for involvement in teaching and independent and collaborative biostatistical research; and trains researchers to teach and to pursue original research on analytical approaches to investigating health-related conditions, and to develop novel biostatistical approaches. The following goals are premised upon having successfully met all the objectives delineated previously for the M.S. degree.

Goal

Upon completion of the Ph.D. degree program, students will be able to:

1. demonstrate a mastery of biostatistical techniques well beyond that required of an M.S. degree and will also demonstrate the ability to develop original methodological approaches.
2. demonstrate the ability to teach topics in Biostatistics in a formal classroom setting.
3. publish material from their dissertations in peer-reviewed professional journals in the areas of Biostatistics or Statistics
4. demonstrate an overall mastery of the core concepts of public health.

Learning Outcomes

1. display command of a wide variety of biostatistical techniques and have a deeper understanding of these techniques than an individual with master's level training.
2. demonstrate the ability to present basic statistical material in a formal classroom setting.
3. demonstrate the ability to consult with clients outside of the university setting and provide them with statistical assistance on a health-related problem.
4. communicate results of newly developed techniques through publications and teaching.
5. demonstrate an understanding of current public health practices and how various health-related disciplines contribute to achieving public health goals.

Important Dates and Forms

Fall 2025	
prior to Arriving	Subscribe to EPIDBIOS listserv & register for MySPH
prior to Arriving	Advisement must be completed before you can register for classes. Contact Graduate Director Robert Moran (rmoran@mailbox.sc.edu), and complete and submit an Advisement form.
July 15	Deadline to register for Fall classes using Self Service Carolina (SSC).
August 5-12	Graduate Assistantship Training and International Teaching Assistant Training
August 17	New Student Orientation
August 18	First Day of classes
August 24	Last Day to Change/Drop a Course without a W
September 7	Labor Day (no classes)
October 15-16	Fall Break (no classes)
October 19	Contact your advisor about registering for Spring classes
November 4	Last day to drop without a WF
November 22 – November 29	Thanksgiving Break (no classes)
December 4	Last Day of Classes
December 7-14	Final Exams
Spring 2026	
January 11	First Day of classes
January 18	Martin Luther King Day of Service (no classes)
January 19	Last Day to Chang/drop a course - after this date all drops with a W.
March 7 – 14	Spring Break (no classes)
March 15	See your advisor about registering for Fall classes. Contact Graduate Director
March 29	Last day to drop without a WF
April 26	Last Day of Classes
April 28-May 5	Final Exams
May 1	Deadline to submit Doctoral program of Study (DPOS)

Advisement and Progression Information

Academic Advisor/Mentor

Communication

Clear and regular communication is critical to establishing and maintaining a meaningful working relationship between you and your Advisor. Expectations should be discussed at the first meeting between the student and Advisor to include the following: preferred methods of communication (e.g., email, telephone, walk-in, etc...); frequency of meetings; and who is responsible for scheduling meetings.

Academic Advisor

Students meet with their academic advisor before each semester to complete an advisement form (AS-133R). This form must be submitted—either in person (PHRC 108) or via email (sphstsr@mailbox.sc.edu)—to the Office of Graduate Student Services (GSS) before a student can register for classes. GSS will review the form and check for any registration holds. Once all holds have been cleared, GSS will return the approved advisement form to the student, at which point the student may register online for classes. Students should ensure that their email address is included on the advisement form. In the absence of the academic advisor, the form may be signed by the Graduate Director.

After admission to the Department of Epidemiology and Biostatistics, each student is assigned a departmental faculty member to serve as an academic advisor. This advisor assists the student in understanding the registration process and generally works with the student throughout the duration of the program. Academic advisors provide guidance on appropriate coursework, sequencing of courses, independent study topics, dissertation planning, consulting experiences, teaching and grant writing practice, and other professional development activities necessary to prepare the student to meet their career objectives.

Students may request a change of academic advisor at any time for a variety of reasons. Such requests should be made in consultation with the Graduate Director, and students are encouraged to discuss any potential change well in advance.

During the first year of study, the academic advisor and the Graduate Director work jointly with the doctoral student as the Doctoral Advisory Committee. The primary responsibility of this committee is to guide the students in developing their Doctoral Program of Study (DPOS), including identifying the initial set of courses appropriate for the student's academic background, training needs, and research interests. The DPOS should be completed by the end of the student's first year, at which point the primary role of the Doctoral Advisory Committee is fulfilled.

As students' progress in the program and refine their research interests, they will select a

dissertation advisor who will guide their research and oversee dissertation development. A student may choose for their academic advisor to also serve as their dissertation advisor; however, it is equally acceptable—and often appropriate—for these roles to be held by different faculty members, depending on the student's needs and research direction.

Program of Study

A doctoral student, in consultation with the Advisory and/or Doctoral Advisement Committee, must submit a Doctoral Program of Study (DPOS) form to the Graduate Director by May 1st of year 1. The DPOS form must be signed by the student, student's academic advisor, and the Graduate Director prior to submission to The Graduate School for approval. DPOS approval is required for official candidacy.

The number of credit hours listed on the program of study should include 53 of coursework.

Given all Biostatistics doctoral students are required to have completed a master's degree prior to admission, the program of study submitted to the Graduate School must meet the following requirements:

1. Forty-two credit hours unique to the University of South Carolina, taken to fulfill requirements for the degree, which includes 12 credit hours of dissertation (BIOS 899)
2. All of the courses must be at the 700 level or higher
3. The Doctoral Advisory Committee has signed off on the program of study
4. Pre-requisite courses (Biostatistics: EPID 701, BIOS 701, BIOS 757, BIOS 709, BIOS 711 and BIOS 712) cannot be included on the program of study
5. Courses taken for undergraduate credit can never be included on any doctoral program of study

University of South Carolina courses at the 500 and 600 level (which can be graduate or undergraduate), and any other such courses taken at other institutions, may be acceptable if they are outside of the student's discipline but applicable to the student's area of study. For example, a 500-level statistics class for an epidemiology major, or a 500-level geography course for a student working with geographic information systems (GIS) as part of the dissertation are acceptable.

Occasionally, changes are needed in the Program of Study. In this case, a Program of Study Adjustment Form (POSA) must be filed with the Graduate School. Extra courses taken, which are not required for graduation, should not be listed on the Program of Study. The DPOS and POSA forms can be found in the Forms section or by contacting the Program Coordinator.

Transfer Credit

The Program of Study may include graduate credits transferred from another USC program or another institution. To be accepted for transfer credit, the courses must:

- Be relevant to the program into which they are transferred.
- Have course content equivalent to similar courses at USC, and a level of instruction equivalent to that of the Arnold School of Public Health.
- Have a grade of “B” or better from an accredited institution.
- Be completed within the six-year period for courses used in the master’s program.
- Statistics courses must be at the 700 level or higher
- Must not have appeared on another program of study.

Transfer credit is at the discretion of the department and must be approved by the Graduate Director. The student may be required to provide course syllabi (including course schedule) and transcript verifying grade received prior to approval of transfer credits.

Academic Standard for Progression

NOTE: The following departmental policy is more stringent than the Graduate School policy.

All graduate students are subject to the academic policies, regulations, and academic standards of both The Graduate School and the department, school and/or college in which enrolled. Grades of “U” and/or grades below “B” on nine (9) or more graduate credit hours taken at the University within a ten-year period will result in the dismissal of the doctoral student from the Department of Epidemiology and Biostatistics Graduate Program and disqualification for a graduate degree in Biostatistics. This rule applies to all graduate courses taken at the University of South Carolina whether or not they are included on the student’s Program of Study; it also applies to courses taken in two or more degree programs.

Additionally, for Biostatistics Doctoral students, **grades below “B” on six (6)** or more graduate credit hours in 800 level biostatistics courses will result in the dismissal of the Biostatistics doctoral student from the Department of Epidemiology and Biostatistics Graduate Program and disqualification for a graduate degree in Biostatistics. Students are not required to retake the course. If, however, a student should choose to retake the course, a grade of “B” or better does *not* replace the original grade on the student’s record.

Annual Academic Review of Doctoral Students

Each doctoral student's academic progress is evaluated annually by the student's academic or dissertation advisor and by the Department's Leadership Team, which includes the Department Chair, Division Directors, and Graduate Program Directors. Each spring, students receive an email announcement and reminder, a letter from the Department Chair, and the required evaluation form. The annual review consists of two components: one completed by the student and one completed by the student's academic advisor and/or dissertation chair. Following this review, each student receives a formal letter from the Department Chair indicating whether their progress toward the degree is satisfactory or unsatisfactory, along with recommended steps for improvement if necessary.

The annual review considers multiple aspects of student progress, including the academic record (such as overall grade point average, any incomplete courses, transcript, and progress toward completing coursework), submission of an approved Doctoral Program of Study (DPOS), and progress in completing or preparing for the qualifying examination. The review also evaluates the student's development of research experience, including participation in conference presentations and peer-reviewed publications, as well as progress in forming a dissertation committee, developing the dissertation proposal, and planning for its presentation. Overall progress toward timely degree completion is also assessed as part of this comprehensive review.

Qualifying Examination

In addition to their coursework, the University requires all doctoral students are required to pass a Qualifying Exam. The Qualifying Exam must be passed before admission to doctoral candidacy and must be completed at least one full academic year prior to the date the doctoral degree is awarded.

Exam Purpose:

The purpose of the Qualifying Examination is to assess the student's technical knowledge and ability to successfully complete a dissertation. Students will be expected to be able to synthesize concepts from across various Biostatistics and Statistics courses.

Exam Scheduling:

Part I is administered on the third Friday of the spring semester while Part II is administered on the following Friday (i.e., the fourth Friday of the spring semester).

Doctoral students who completed a master's degree in Biostatistics at the University of South Carolina will automatically be registered to take the Qualifying Exam following at the beginning of their second semester in the doctoral program. Students who completed a master's degree in Biostatistics at the University of South Carolina and passed the

Master's Comprehensive Exam within two years of the date they are registered to take the Qualifying Exam are exempted from taking Part I of the Qualifying Exam.

Doctoral students beginning study in Fall 2027, who completed a master's degree in Biostatistics at the University of South Carolina, will be registered to take the Qualifying Exam Part I on 28 January 2028 (if not exempted) and Qualifying Exam Part II on 4 February 2028.

Students admitted from master's programs at other universities will automatically be registered to take the Qualifying Exam in the Spring semester of their second year of doctoral studies.

Doctoral students beginning study in Fall 2027, who completed a master's degree at a university other than at the University of South Carolina in the unit of Biostatistics, will be registered to take the Qualifying Exam Part I on 26 January 2029 and Qualifying Exam Part II on 2 February 2029.

All students who do not pass the Qualifying Exam on their first attempt will automatically be registered for the subsequent Qualifying Exam retake. The Qualifying Exam retake is offered on the dates listed in the table below. If a student does not pass the Qualifying Exam on the second attempt, they will not be allowed to continue in the program.

The schedule for Qualifying Exams is listed in the following table:

Type of Exam	2027	2028	2029
Qualifying Part 1	1/29/2027	1/28/2028	1/26/2029
Qualifying Part 2	2/5/2027	2/4/2028	2/2/2029
Qualifying Retake	5/14/2027	5/12/2028	5/11/2029

Students who experience unusual circumstances may request permission to take the Qualifying Exam and/or the Qualifying Exam retake either earlier or later than the dates described in the preceding paragraphs by filling out and submitting the form on page XX of Biostatistics Graduate Student Handbook to the Biostatistics Graduate Director at least two weeks prior to the date of the Exam they are registered for.

If a student is registered to take the Qualifying Exam and does not take it, this will count as a failed attempt unless the student has been granted permission to take the Examination at a different date/time.

Exam Format and Content:

The Exam will be in a classroom setting. The Exam will be closed book, but students will be provided with a formula sheet of the standard formulas needed for the exam content. Students may use a calculator but other electronic devices (including laptops, cell phones, etc.) are forbidden.

The Exam is prepared by the Division of Biostatistics' Exam Committee with assistance from other Biostatistics faculty. The Exam consists of two parts. Part I, administered on the morning of the third Friday of the spring semester, is typically focused on master's level coursework including BIOS 745, BIOS 757, BIOS 758, BIOS 759, BIOS 761, STAT 512, STAT 513. Part II, administered on the subsequent Friday morning, is typically focused on more advanced concepts, both applied and theoretical.

Exam Results

The Qualifying Exam will be evaluated as a whole, and students must pass both Parts of the Exam separately to satisfy the requirement of having successfully passed the Qualifying Exam. Students taking the Exam will be notified in writing of the results (pass/fail) for each part of the Exam as soon as possible after faculty evaluation of the Exam.

Faculty members will not discuss exam results with any individual student until all students have received official notification. After students have been notified of results, a student may meet with their advisor to discuss their performance on the Exam.

Each student is allowed two attempts to pass the Qualifying Exam. Students who fail the Qualifying Exam on the first attempt will receive feedback on gaps in mastery of material identified on the Exam and will need to take the Exam again. It is possible for a student to pass one Part of the Exam but not the other. In that case, the student only needs to retake the Part that they failed.

Doctoral Candidacy

Admission to doctoral candidacy and continuation in the program require passing the Qualifying Exam and filing an approved Doctoral Program of Study. Admission to Candidacy must be at least one full academic year prior to graduation, so students should plan for admission to candidacy no later than the end of the second year of study.

Residency Requirement

Excerpts taken from Doctoral Degree Requirements on The Graduate School's website, which can be found at: <http://bulletin.sc.edu/content.php?catoid=76&navoid=2129>.

A residency requirement is intended to ensure that doctoral students benefit from and contribute to the full spectrum of educational and professional opportunities provided by working closely with the graduate faculty and other students at a research university.

In the Department of Epidemiology and Biostatistics, doctoral students are required to meet their residency requirement as follows:

Option 1: Two consecutive semesters of full-time enrollment. Full time enrollment is defined as enrollment for six hours for students serving as graduate assistants and nine

hours for students who are not graduate assistants; consecutive semesters could be fall/spring, spring/summer, summer/fall, or spring/fall. Programs are expected to provide enrichment opportunities beyond course enrollment to help doctoral students understand and meet the intention of the residency requirements.

Option 2: A proposal for an individual residency plan may be submitted to The Graduate School for consideration and action.

The student's Doctoral Advisory Committee (see definition in Doctoral Committee session) certifies on the doctoral program of study ([DPOS](#)) form the term dates and courses or other means by which the student satisfies the residency requirement. In the event unique circumstances arise, it may be possible for a student to meet the residency requirement through an individualized plan.

The dissertation hours (BIOS 899) will not count toward the minimum residency requirement. Additionally, seminars (BIOS 845) will normally not count toward the minimum residency requirement.

Teaching Practicum

The teaching practicum focuses on pedagogical and practical issues related to teaching a course in biostatistics. Through the practicum, the student will serve as a junior colleague to the course instructor, and thereby gain experience in all aspects of teaching including session planning, conducting classroom teaching, assessment, and evaluation. The teaching practicum is a 3-credit course. Students register for the course as an Independent Study (BIOS 890). The following methods courses are generally suitable for a biostatistics student to complete a teaching practicum (BIOS 700, BIOS 701, BIOS 757, and BIOS 761).

To register for the course, the following are needed:

- Identify a course for the practicum. The Graduate Director will facilitate this process considering course offerings, requirements of the instructor, and student preference. The course instructor will serve as a faculty mentor.
- Complete a teaching practicum contract (sample available from the Graduate Director). The purpose of the contract is to define the objectives, scope, and responsibilities for the practicum experience. This is prepared in consultation with the faculty mentor and student.
- Complete the Independent Study Contract (ISC) (sample available from the Graduate Director).
- Obtain the schedule code (CRN) and Section for your faculty advisor from the Program Coordinator.
- Obtain the following signatures on your ISC: student, academic advisor, and faculty mentor.
- Turn in your ISC and contract to the Graduate Director who will review, sign, and give to the Program Coordinator for processing.

- Register for BIOS 890 section that has been assigned to you.

During the practicum, the student will work with the faculty mentor as defined in the practicum contract. At the end of the practicum the student will ensure that the Teaching Practicum Evaluation Form is completed by the faculty mentor. The evaluation form will be used by the faculty mentor when determining a student's final grade.

Consulting Practicum

The objective of this course is to provide the student with an opportunity to apply skills learned in the program to a real-world experience by collaborating with an outside health institution (referred to as the external agency). Typically, the external agency is an external department, DHEC, a hospital, or other health agency. The consulting practicum is a 3-credit course. Students register for the course as an Independent Study (BIOS 890).

To register for the course:

- Identify a venue, preceptor, and topic for the practicum. The preceptor is the individual at the external agency with whom the student will work during the practicum (the student's academic advisor or other faculty members can help with this). Identify a faculty advisor (usually the academic advisor).
- Complete a consulting practicum contract (sample available from the Graduate Director). The purpose of the contract is to define the objectives, scope, deliverables, and time of the practicum experience. The contract is prepared in consultation with the faculty advisor, field preceptor, and student.
- Complete the Independent Study Contract (ISC). Attach a copy of your completed consulting practicum contract to your ISC.
- Obtain the schedule code (CRN) and section for your faculty advisor from the Program Coordinator.
- Obtain the following signatures on your ISC: student, academic advisor, and faculty advisor.
- Turn in your ISC with attached contract to the Graduate Director who will review, sign and give to the Program Coordinator for processing.
- Register for BIOS 890 section that has been assigned to you.

During the practicum, the student will work with the preceptor as defined in the practicum contract, keeping the faculty advisor informed.

At the conclusion of the practicum, the student will do the following:

- Deliver what was agreed upon in the contract (usually a written report and presentation). If, for some reason this does not happen within the defined period, the deadline can be extended after consultation with the faculty advisor and field preceptor.
- Ensure that practicum evaluations are completed by the faculty advisor, preceptor, and the student.

Grant Writing Practicum

The objective of this course is to provide the student with an opportunity to address real-world problems using advanced statistical methods learned from program by writing a grant application under the supervision with faculty mentor in the biostatistics division. Typically, the outcome of the grant writing practicum consists of either intermural or extramural grant applications including SPARC Graduate Research Grant Program at USC or F31/F32 NIH applications. The grant writing practicum is a 3-credit course. Students register for the course as an Independent Study (BIOS 890).

To register for the course:

- Identify a faculty in biostatistics division and potential topic for the grant writing practicum (the student's academic advisor or other faculty members can help with this). The student will work with the faculty on the research topic during the grant writing practicum.
- Complete a grant writing contract (sample available from your academic advisor or Graduate Director). The purpose of the contract is to define the objectives, scope, deliverables, and time of the practicum experience. The contract is prepared in consultation with the faculty advisor and student.
- Complete the Independent Study Contract (ISC). Attach a copy of your completed grant writing practicum contract to your ISC.
- Obtain the schedule code (CRN) and section for your faculty advisor from the Program Coordinator.
- Obtain the following signatures on your ISC: student, academic advisor, and faculty advisor.
- Turn in your ISC with attached contract to the Graduate Director who will review, sign and give to the Program Coordinator for processing.
- Register for BIOS 890 section that has been assigned to you.

During the practicum, the student will work with the faculty advisor as defined in the practicum contract. At the conclusion of the practicum, the student will do the following:

- Deliver what was agreed upon in the contract (such as a grant submission or completed grant ready for submission). If, for some reason this does not happen within the defined period, the deadline can be extended after consultation with the faculty advisor.
- Ensure that practicum evaluations are completed by the faculty advisor and the student.

Doctoral Committees

When the student has determined they are ready to start on their dissertation, two other committees must be formed – the Written and Oral Comprehensive Examination Committee and the Dissertation Committee, which are subject to approval by the Dean of the Graduate School.

The Written and Oral Comprehensive Examination and Dissertation Committees must consist of a minimum of four faculty members, at least one of whom must be an outside member (from another USC department or another institution). The majority of committee members must be on the faculty in the Biostatistics Division and must be Regular or Associate Members of the Graduate Faculty. Typically, the same serve on both committees and the chair is the student's Dissertation Chair.

The Doctoral Dissertation Committee Appointment Request Form (G-DCA), found in the Forms section, must be submitted to The Graduate School for approval prior to the Dissertation Proposal and/or Comprehensive Exam Defense. Approval of outside members of the doctoral committees who are not tenure-track graduate faculty at USC requires a letter of justification and an accompanying CV. If a student has a need for more than one outside member on a dissertation committee, this can be requested by a letter of justification from the Program's Graduate Director and is subject to approval by The Graduate School.

Doctoral Comprehensive Examination

The purpose of comprehensive exam is to evaluate: 1) in-depth knowledge acquired by the student in the major area of concentration and in the cognate areas, and 2) the ability to integrate concepts and apply them to biostatistics research studies. The evaluation will include, but is not limited to, determining the extent to which the student is an expert in their dissertation topic area, is well-versed in the relevant literature, is competent in applying biostatistics methodology as they relate to their research area and more broadly to biostatistics research, and can demonstrate independent thinking as a doctoral-level researcher.

The exam is taken after the completion of doctoral coursework and is scheduled for the individual student. The examination must be completed at least 60 days before the date of graduation. The Comprehensive Verification Form must be completed and sent to The Graduate School upon completion of the examination.

This exam is prepared and administered by the Written and Oral Comprehensive Exam committee. The exam is unique to each student and contains written and oral components. Students may choose one of two options for their comprehensive exam, although the final decision rests with the student's Dissertation Chair.

Option 1: Traditional Comprehensive Exam (separate from Dissertation Proposal)

The student's comprehensive exam committee is responsible for choosing the format of the Comprehensive Examination. The oral component of the exam should follow within one month of the written examination. As in the written component, any topic on the student's program of study could be represented in the written component. The examination committee will prepare the oral component based on the students' performance on the written component and may also include questions about material not covered in the written component. Since the two components of the exam are evaluated together, the committee is not expected to give any response concerning the written component to the student before the oral component.

The exam committee evaluates both the written and oral components of the exam to determine whether the exam has been passed. If a student does not perform satisfactorily, both components must be repeated.

The student is allowed two attempts to pass the examination. If a student does not pass the examination on the second attempt, they are not allowed to continue in the program.

Option 2. Comprehensive Examination Combined with Dissertation Proposal

The exam committee, which usually consists of the same members as the student's dissertation committee, presents the student with a series of questions to be answered in writing and returned to the committee chair, usually the dissertation chair, at least a week prior to the dissertation proposal and these answers will act as the written component of the Comprehensive Examination. The oral exam focuses on questions related to written component and it should last approximately 30-60 minutes. Students may need or want to use a whiteboard to explain mechanisms or formulas for the oral exam. The total time for the combined dissertation proposal and comprehensive oral exam is approximately three hours.

Students are *not* allowed to bring in any outside materials or notes during the oral exam. A grade of pass/fail is determined by the committee. A student can pass one or both components (dissertation proposal and comprehensive exam). A student is deemed to have failed if the committee feels their answers do not adequately convey the depth and breadth of knowledge expected of a doctoral candidate. The exam committee will provide specific feedback to the students about the deficiencies. If a student should fail, the component(s) that need to be repeated are left up to the discretion of the exam committee. Portions can include any or all of the following: written dissertation proposal, proposal defense and/or oral defense of exam questions. If a retake is necessary, the student is strongly encouraged to retake the exam within one to three months following their initial attempt.

Dissertation Requirements

All doctoral students must complete a research project culminating in a dissertation. The dissertation must be based on original research, typically addressing a basic research problem. *Students must pass the Qualifying Examination* before enrolling in dissertation hours (BIOS 899). The student, in consultation with the Academic Advisor, will select a Dissertation Chair from the departmental faculty of Biostatistics Division. The Dissertation Chair has primary responsibility for advising the student regarding technical work on the dissertation. **Students can register for dissertation hours only if approved by their Dissertation Chair and if actively working on the dissertation that semester.**

Deadlines

The dissertation must be read, critically evaluated, and approved by all members of the Dissertation Committee. In accordance with The Graduate School's guidelines, the following deadlines must be met. The specific dates for a semester are available on The Graduate School home page <http://www.gradschool.sc.edu>. For items b-d below, "end of the semester" refers to the semester the student wishes to complete the Ph.D. program.

- a. Initially, the student **must prepare a written dissertation proposal and conduct a presentation** (Dissertation Proposal Defense) to the Dissertation Committee for approval. The dissertation proposal defense should be scheduled **within one year of completion of course work for the student's program of study, and after the student has passed the qualifying examination.** The presentation of the proposal should occur within a year before graduation from the program and must be no less than six months prior to the dissertation defense. If this schedule is not met, the student may be required to form a new dissertation research committee.
- b. The Comprehensive Exam should either be scheduled to occur within three to six months after the dissertation proposal defense (Part 1 above) or conducted concurrently with the dissertation proposal defense (Part 2 above).
- c. The first complete draft of the dissertation must be completed within two years of successful completion of the Proposal Defense and Comprehensive Examination. The student may request an extension of this timeline or make other arrangements, with justification. Such requests are subject to approval by the Dissertation Chair and the Dissertation Committee.
- d. The draft dissertation must be in the hands of the Dissertation Committee at least 60 days before the end of the semester (Graduate Studies Bulletin); the approximate dates are October 15, March 15, and June 15 for fall, spring and summer sessions, respectively. This is approximately six weeks before the filing date for the dissertation and should be at least one month before the scheduled defense. The dissertation defense should be scheduled at this time.

- e. The final copy is to be submitted to each committee member at least 30 days prior to the end of the semester or at least one week prior to the dissertation defense, whichever is earlier.
- f. The dissertation defense must be held at least one week before The Graduate School filing date, which is 20 days before the end of the semester.
- g. The student must file the final dissertation by the filing date. Final approval is given by The Graduate School via the ETD process.

Dissertation Proposal

The first step in the dissertation process is the development of the dissertation proposal, and its oral defense before the student's doctoral committee. The presentation of the proposal should be no less than six months prior to the dissertation defense. The committee must provide signatures approving the proposal before the student can proceed with the research and the proposal approval form must be submitted to the Graduate Director (see Forms).

Typically, the dissertation proposal consists of the introduction, literature review, methodology that the student intends to develop, and simulation design for the dissertation. In many cases, this forms the basis of the first three chapters of the final dissertation. *Manuscripts for inclusion in the dissertation may not be submitted and/or published prior to the dissertation proposal defense.*

The student may need to obtain necessary approvals to use the data for the dissertation from data stewards and regulatory bodies.

Dissertation Defense

The candidate must publicly present the results of the dissertation research in a 45-60 minute presentation. Announcements of this presentation should be made at least one week before the defense and must be requested through the Program Coordinator. The dissertation defense should not be scheduled during the scheduled class time of any department core course.

The candidate must also pass an oral examination that shall be administered immediately following the presentation and evaluated by their Dissertation Committee. This examination will focus on the technical and scientific aspects of the dissertation topic and the scholarly delineation of the dissertation topic and may cover any other subject matter relevant to the student's field of study.

Upon successful completion of the Dissertation Defense, all dissertation committee members must provide their original signature on the Dissertation Signature and Approval form. This form, with committee member names typed on the form, must be turned in

along with the dissertation. Students are required to format their dissertation as directed by the Graduate School. Be sure your dissertation meets the [Graduate School's requirements](#). The student should provide each Dissertation Committee member a copy of the final dissertation in a manner acceptable to the committee member.

Evidence of approval to use articles which have been published or accepted for publication must be included for The Graduate School. It is the student's responsibility to secure copyright releases prior to document submission to The Graduate School. The Graduate School will accept a letter or email from the publisher.

Human Subjects Approvals

All dissertation research involving human subjects must be reviewed and approved by the appropriate ethics review committee. Research projects that qualify for exemption (typically secondary data analysis of existing data, observational studies with adults, or evaluation of service/public activities) can be approved by the SPH Institutional Review Board Liaison. The IRB application must be completed online at: [IRB application](#). It will be necessary to register the first time you enter the site. Some projects must also be approved by a review committee at the agency where the dissertation research will be conducted. Any necessary approvals must be obtained prior to beginning work on the defined research. Some dissertation activities related to an ongoing research project may be covered under that project's IRB approval; this should be discussed with the project Principal Investigator and/or Dissertation Director; in most situations, notification of the IRB or IRB liaison of a change in protocol is sufficient.

Degree Requirements for Ph.D. in Biostatistics

Coursework for the Ph.D. in Biostatistics is predicated upon the applicant having college-level courses in calculus and matrix algebra and solid preparation at the master's level in biostatistics. Additional scientific background in the social or biological sciences is desirable.

For applicants holding master's degrees in disciplines other than Biostatistics, preparatory course requirements will be set at the discretion of the faculty. As a minimum, applicants should have: a) completed the equivalent of I-II/2 years of university-level calculus, i.e. through multivariable calculus (equivalent courses at USC include MATH 141, MATH 142, MATH 241); b) completed an introductory course or its equivalent in matrix algebra, including matrix operations and solutions of matrix equations; c) completed a year of mathematical statistics, the equivalent of STAT 512 and STAT 513; and d) mastered the knowledge and skills taught in the following basic courses: EPID 701, BIOS 701, BIOS 757, BIOS 709, BIOS 711, and BIOS 712.

Applicants without evidence of the above knowledge-base will be expected to take the necessary basic courses immediately upon entry. The preparatory course requirements as specified by faculty are in addition to the minimal 53 hours of doctoral requirements. Per CEPH requirement, all doctoral students are required to take PUBH 700, a general public health course, as part of their curriculum. The requirement may be waived with Graduate Director's approval if a student can provide evidence of having taken a similar course during their master's degree program. In lieu of this course, the student will be required to take an additional three cognate hours to replace this course.

Degree Requirements for Ph.D. in Biostatistics (53 credit hours)

Course Number	Title	Credit Hours
SCHOOL OF PUBLIC HEALTH CORE		
PUBH 700	Perspectives in Public Health	3
STATISTICS CORE		
STAT 712	Mathematical Statistics 1	3
STAT 713	Mathematical Statistics 2	3
STAT 714	Linear Statistical Models	3
BIOSTATISTICS CORE		
	800 Level Biostatistics Core Required - Bios 825 or Bios 820 plus 9 hours of other 800 level biostatistics	12
BIOS 845	Doctoral Seminar (1 credit per semester 2 semesters)	2
BIOS 890	Teaching, Consulting or Grant Writing Practicum	3
COGNATES (ELECTIVES)		
	Cognates	3
	Other Biostatistics and/or Statistics	9
DISSERTATION		
BIOS 899	Dissertation Preparation	12
	Total Required Credit Hours	53

Core master's courses (EPID 701, BIOS 701, BIOS 757, BIOS 709, BIOS 711 and BIOS 712 and their equivalents) are not allowed to be on the doctoral (phd) program of student (DPOS). The final program of study must also meet the minimum university post baccalaureate of 60 hours, minimum 30 post master's hours, minimum 30 hours taken at USC, and all "content" credit coursework must be taken within 10 years of the time of graduation.

Degree Requirements for Ph.D. in Biostatistics (Advanced placement 44 credit hours)

Course Number	Title	Credit Hours
SCHOOL OF PUBLIC HEALTH CORE		
PUBH 700	Perspectives in Public Health	3
STATISTICS CORE		
STAT 712	Mathematical Statistics 1	3
STAT 713	Mathematical Statistics 2	3
STAT 714	Linear Statistical Models	3
BIOSTATISTICS CORE		
	800 Level Biostatistics Core Required - Bios 825 or Bios 820 plus 9 hours of other 800 level biostatistics	12
BIOS 845	Doctoral Seminar (1 credit per semester 2 semesters)	2
BIOS 890	Teaching, Consulting or Grant Writing Practicum	3
COGNATES (ELECTIVES)		
	Cognates	3
DISSERTATION		
BIOS 899	Dissertation Preparation	12
	Total Required Credit Hours	44

Core master's courses (EPID 701, BIOS 701, BIOS 757, BIOS 709, BIOS 711 and BIOS 712 and their equivalents) are not to allowed to be included on the doctoral program of study (DPOS), 9 hours from previous graduate work must be shown prior to admission and not included in the (DPOS) with the approval of the student's advisor and the Graduate Director. Specifically, you should have completed 9 hours from BIOS 758, BIOS 759, BIOS 760, BIOS 761 & BIOS 770. The final program of study must also meet the minimum university post baccalaureate of 60 hours, minimum 30 post master's hours, minimum 30 hours taken at USC, and all "content" credit coursework must be taken within 10 years of the time of graduation.

FINANCIAL ASSISTANCE AND ASSISTANTSHIPS

In addition to financial aid and fellowship information described in the Graduate Studies Bulletin, a limited number of traineeships and assistantships are available. Faculty will nominate outstanding applicants for highly competitive fellowships offered through the Arnold School of Public Health and the USC Graduate School. The USC Office of Student Financial Aid and Scholarship provides access to a variety of grants and loans for students in the Graduate School. For further information and application forms for all types of financial aid, contact them at (803) 777-8134 or visit their [website](#).

Behavioral-Biomedical Interface Program (BBIP)

The Behavioral-Biomedical Interface Program (BBIP) is an interdisciplinary research training program designed for select students beginning their doctoral studies in Epidemiology, Exercise Science, or Psychology. This training program is supported in part by a National Institutes of Health T32 pre-doctoral research training grant 5T32GM081740 from the National Institute of General Medical Sciences. BBIP focuses on cross-cutting themes related to prevention and developmental sciences broadly defined. BBIP is training the next generation of behavioral scientists with respect to biomedical conceptual frameworks and methods applied to understanding, treating, and preventing adverse health conditions/disorders and promoting optimal health outcomes. To be considered, prospective applicants must apply jointly to BBIP and Epidemiology and must be a US citizen or US permanent resident. BBIP applicants are first year prospective applicants to the PhD program. For further information or to apply for this training grant, see the [BBIP website](#).

Assistantships

Purpose

A limited number of graduate assistantships are available for full-time students. These assistantships provide in-state tuition rate and a stipend in return for 10-20 hours of work per week for faculty of the Department of Epidemiology and Biostatistics, in other departments on campus, or other organizations. A graduate assistant is a student who assists, under faculty supervision, functions related to teaching, research or other services that would otherwise be performed by regular faculty and staff members. In so doing, graduate assistants receive valuable practical experience in preparation for future teaching, research, or administrative responsibilities.

Assistantships funded by nonprofit organizations or state agencies other than USC must be approved by the Dean of the Graduate School. Students appointed to such positions work for the sponsoring organizations but are under the general supervision of their departmental faculty. When faculty identify positions in other agencies, they try to see that the major duties are related to academic skills that are a part of the discipline.

Requirements

- Must be fully admitted to a degree program and enrolled in The Graduate School.
- Must maintain a 3.0 GPA, and generally good academic standing.
- Must have received a satisfactory evaluation in previous assistantship positions.
- For Teaching Assistants (TA), must co-register for or have previously completed GRAD 701 – Teaching Assistant Development.
- International students are required to attend two additional sessions: International Student Services' Orientation and English Programs for International Teaching Assistant (ITA) training sessions.
- Must be registered for a minimum of six (6) semester hours in the Fall and Spring semesters. If a student is registered for fewer than six (6) semester hours in the Fall or Spring semesters, the student will not be eligible for a graduate assistantship, unless they are finished with their coursework and have filed an exemption (Z-status) with the Graduate School.
- Must adhere to the work schedule determined jointly by the supervisor (faculty or agency supervisor) and student.
- Once a signed commitment to an assistantship position has been made, no change in position can be made without discussion by and approval of the Graduate Directors.

Hours, Fees and Other Issues of Employment

- Graduate assistants are special part-time employees of the University and should treat the assistantship as they would a professional job.
- Graduate assistants are expected to devote full-time effort to their studies and their assistantship responsibilities. They are discouraged from having additional employment, on or off campus, during the term for which they are appointed. It is University policy that no student shall be permitted to hold more than the equivalent of one University half-time assistantship (20 hours per week).
- The student is expected to work 10-20 hours per week (depending on their assistantship appointment) with pay appropriate to the total hours worked. Students with graduate assistantships qualify for in-state (resident) tuition and program fees (see the [Bursar's website](#)). Tuition supplements are available for some Graduate Assistants either paid by department funds or contracts, on a sliding scale based on the number of credit hours taken and the number of hours

of the assistantship or as indicated in the student's offer letter. The amount of the supplement is prorated for fewer hours worked or fewer course credits taken. Graduate assistantships outside the Department may not include a tuition supplement or may supplement at a different rate.

- Assistants appointed after the first 30 days of a semester (10 days of a summer term), whose duties terminate before the midterm date, or whose duties terminate before they earn the minimum stipend amount will be billed for full term tuition.
- Students will be evaluated on their performance in their assistantship at the end of every semester using the appropriate form. Assistants who fail to perform their duties satisfactorily may be terminated from their appointment. The Department is not obligated to offer assistantships in succeeding semesters for students terminated from an assistantship for this reason.
- Assistants do not accrue sick leave, so work missed due to illness should be made up.

Required Teaching Assistant Training for Incoming Doctoral Students

As an entering doctoral student, you must register for the Graduate School's teaching assistant and instructional assistant (TA/IA) training and GRAD 701 (no cost and 0 credits). Prior to or concurrent with your first USC teaching experience, all graduate students must successfully complete this training. If you do not complete the requirements, you will not be considered credentialed for performing TA duties (even if you were teaching the semester you were enrolled), and you may lose your assistantship funding and in-state tuition. The link to register for orientation/training is: [TA Orientation](#). Training is offered in Fall and Spring semesters.

Additional Orientation & TA Training Requirements for International Students

In addition to participation in the TA/IA workshop, all **international graduate students** must attend the International Teaching Assistant Training Workshop (ITA) and receive a satisfactory evaluation of their oral English skills to be eligible for appointment as a teaching/instructional assistant. For more detailed information, please visit the [ITA workshop](#) website or contact English Programs for Internationals: epi-info@epi.sc.edu or call 803-777-3867.

Placement in Assistantships

The Department makes every reasonable effort to place students in assistantships that are consistent with the students' academic interests. However, the Department is not obligated to identify an assistantship that perfectly matches the student's interests in every instance. Also, in some instances it may be necessary to place a student in an assistantship designed primarily to fulfill the Department's current needs. These positions will be consistent with the Department's goal of developing the student's abilities through the assistantship experience. **Students who do not complete assigned assistantships satisfactorily are not guaranteed additional assistantships in succeeding semesters, even if this has been previously promised.**

Time Limitation of Assistantships for Master's Students

The Department is committed to supporting students who are honored with guaranteed assistantships, as outlined in the student's admission letter. If a student desires funding for a period longer than defined in this letter, they may be considered for additional assistantships at the Department's discretion. In these instances, however, the student will have lower priority for Department funding than other students. Students should recognize that they may not be funded via assistantships for the full duration of their degree program, and plan accordingly. This time limitation applies only to master's students who are offered guaranteed assistantships when admitted; the Department is not obligated to ensure that assistantships will be arranged for other master's students who desire them, although we make every reasonable effort to assist these students to obtain assistantships. Successful placement in an assistantship for those not receiving a guaranteed placement does not obligate the Department to fund these students in succeeding semesters.

Time Limitation of Assistantships for Doctoral Students

Doctoral students are typically supported through research assistantships or teaching assistantships. These assistantships are an integral part of the student's doctoral preparation. They also provide the student with useful professional contacts, often forming the basis of research collaborations leading to publications and other benefits, and for letters of recommendation that are critical elements of the student's application for professional positions following graduation. While the Department is pleased to honor its doctoral students with this support, doctoral students should recognize that the period of guaranteed support is limited to what is outlined in their admission letter. Thereafter, some students who continue to work actively on degree studies may receive continued support if it is available through sponsored research funds. However, the Department is not obligated to provide continued funding to students beyond what is stated in the offer letter and students should plan accordingly.

Funding Contingency

Financial assistance in the form of assistantships for Ph.D. and Master's students is typically supported by federal or state grants, as well as other external or institutional funding sources. While the University is committed to supporting students to the fullest extent possible, all assistantship funding is contingent upon the continued availability of these financial resources. In the event that such funds are reduced, reallocated, or otherwise become unavailable for any reason, the University reserves the right to modify or terminate a student's assistantship support. Students will be notified as promptly as possible should such changes occur.

Other

- Assistantships are usually for a set time commitment. Any student considering a change in assistantship before the end of the agreed time must consult with their supervisor and the Graduate Director.
- Some assistantships may require the student to adhere to a dress code commensurate with the respective assignment.
- Some assistantships may require travel, work at odd hours, or flexibility of hours. A graduate assistant should be very clear with their supervisor about the time they can be available.
- No graduate assistant is expected to work more than the agreed upon hours. However, graduate assistants are encouraged to look for opportunities to attend meetings, seminars, etc., which will enhance their learning or development of specific skills. These activities may or may not be included in the paid hours of the assistantship.
- Open communication is a key to good working relationships as a graduate assistant. Supervisors are willing to accommodate assistant needs but must be aware of the needs. Remember, supervisors of students are in charge and are responsible for setting graduate assistant work schedules.
- Assistantships will not be offered to satisfy any academic requirements, including practice requirements and thesis/dissertation research.

Travel Grants

There are two opportunities for students to receive funding for travel:

- Funding is available through the Dean's office with the maximum award being \$300. Priority will be given to students who have not received a previous travel award from the school; no student will receive more than one award in a fiscal year.
- The Graduate School also offers funding, ranging up to \$500 for domestic travel and up to \$800 for international travel. Qualified students may receive up to two travel grants during their tenure in the graduate school.

For both awards, the department may match funding up to \$450. For more information, including the applications and submission deadlines, please visit the [ASPH Travel Funding website](#) and The [Graduate School Travel Funding website](#).

COURSE DESCRIPTIONS

NOTE: The academic bulletin and this student handbook are for information purposes only and do not constitute any contractual agreement between a student and the University of South Carolina. The University reserves the right to make changes in curricula, degree requirements, course offerings, or academic regulations at any time when, in the judgment of the faculty, the president, or the Board of Trustees, such changes are in the best interest of the students and the University.

Arnold School of Public Health Courses

- ENHS 660 **Concepts of Environmental Health Science.** (3) (every semester). Environmental health sciences presenting the earth as a complex system in which people, plants, animals and non-living physical-chemical components interact.
- PUBH 700 **Perspectives in Public Health.** (3) (every semester, online). Seminar-format orientation to history, mission, and core services and disciplines of public health to develop understanding of current public health practice and how many health-related disciplines contribute to achieving public health goals.
- PUBH 724* **Quantitative Methods for Public Health Practice.** (3) (every fall). Provides students with an integrated overview of basic quantitative methods used in public health practice, combining concepts from epidemiology, environmental health, and biostatistics. Topics include epidemiology measures and study designs, toxicology and environmental risk factors for disease, and methods to describe and analyze data. Students will begin a community assessment by creating and distributing a survey that addresses a public health issue.
- PUBH 725* **Quantitative Methods for Public Health Practice I.** (3) (every spring). Provides students with an integrated overview of more advanced quantitative methods used in public health practice, combining concepts from epidemiology, environmental health, and biostatistics. Topics include outbreak investigation, bias including confounding and adjusted rates, globalization and the concept of One Health, and multivariable linear and logistic regression models. Students will analyze and interpret results using the survey data collected in PUBH 724.
- PUBH 726* **Qualitative Methods for Public Health Practice II.** (3) (every fall). Introductory qualitative methods course focusing on understanding the characteristics of qualitative methods, including data collection, organization, and analysis. Students will also learn about the role of theory and paradigms in qualitative inquiry and how to identify, work with, and communicate qualitative analysis results with different types of community stakeholders.

- PUBH 730* **Public Health Systems, Policy, and Leadership.** (3) (every spring). Designed to prepare future public health professionals with the knowledge and skills needed to solve public health problems using systems thinking tools, best practices in public health management, and policy development, application, and evaluation. It emphasizes identifying and enhancing the knowledge and skills needed to effectively lead public health initiatives.
- PUBH 735* **Practical Applications of Public Health Planning.** (4) (every spring). Provides the opportunity for students to gain an in-depth understanding of the program planning process in public health. Students will work in teams to develop programs addressing a public health issue affecting a target population and setting, based on available epidemiological and social assessment data, and multi-level interventional strategies informed by theory and existing evidence-based interventions.
- PUBH 810 **Ethics in Public Health Research and Practice.** (1) (not currently offered) (Enrollment restricted to doctoral students and post-docs, master's students by permission of instructor). Foundation of public health ethics with application to practice and to responsible conduct of research in public health disciplines.

*These courses are offered in-person and online. In-Person students must talk to their program director before enrolling in any online courses.

Epidemiology Undergraduate Courses

- EPID 349 **Infectious Disease Epidemiology.** (3). (Pre-req: solid understanding of basic science and public health curricula, such as molecular biology or anatomy-physiology; or permission from instructor). This introductory course will review the history of infectious diseases, principles of infectious disease transmission, relevant study design and analysis techniques, and the clinical epidemiology of specific pathogens by transmission route categories.
- EPID 394 **Special Topics in Epidemiology.** (1-3). Content variable. May be repeated for credit. For undergraduate students only. Course would count as a cognate course in the undergraduate public health curriculum.
- EPID 410 **Principles of Epidemiology.** (3) (every semester and summer) (Required for Public Health undergraduate majors at USC) (Prereq or Coreq: STAT 201 or 205). Introduction to descriptive and analytical epidemiology. Topics will include the distribution and determinants of disease, surveillance, outbreak investigations, measures of association, screening tests, bias, and causal reasoning.

- EPID 490 **Independent Study.** (1-3) Enrollment and topic to be approved in advance by advisor and instructor. May be repeated. Prerequisites: permission of instructor.

Epidemiology Undergraduate/Graduate Courses

- EPID 542 **Global Health Epidemiology.** (3). Course may be taken by undergraduate or graduate students. This course will introduce epidemiologic concepts and methods using cases studies examining current global health challenges. Students will gain an understanding of the role of epidemiology in understanding the distribution of disease and risk factors, and developing, implementing and evaluating public health interventions globally.
- EPID 594 **Special Topics in Epidemiology.** (1-6) (Varies). Content variable. May be repeated for credit. Course may be taken by undergraduate or graduate students.
- EPID 661 **Parasitology.** (4) (every spring semester) (Pre-requisite: 300 level Biology course or equivalent). Parasites of biological, economic, and public health importance. Three lectures and three laboratory hours per week.

Epidemiology Graduate Courses

- EPID 700 **Introduction to Epidemiology.** (3) (not currently offered). Principles of epidemiology with examples of selected health problems. Health status of populations and conceptual tools for translating epidemiologic findings into public health action.
- EPID 701 **Concepts and Methods of Epidemiology.** (3) (every fall) (Prereq or Coreq: BIOS 701 or permission of instructor). Conceptual foundation of epidemiologic research, quantitative methods, and epidemiologic study design. Intended for those who will be involved in epidemiologic research.
- EPID 721* **Clinical and Population Research Protocol Development and Implementation.** (2) (every spring). The purpose of this course is to develop applied research skills related to the development of appropriate clinical and population research protocols for a given public health issue and context.

- EPID 722* **Scientific Writing and Appraisal of Epidemiologic Studies.** (2) (every fall) (Prereq: EPID 701, PUBH 725 or permission of instructor). This course will familiarize students with techniques used to critically assess, interpret, evaluate, and synthesize epidemiologic literature. Students will be introduced to research databases, reference management software, reporting guidelines, and methods for systematic reviews. Students will learn how to effectively communicate research findings via manuscript and oral or poster format.
- EPID 725 **Biologic Basis of Public Health.** (3) (not currently offered). Survey of the biology of human disease processes at cellular, tissue and body system levels with the emphasis on the application of biological principles to contemporary public health problems.
- EPID 730* **Public Health Surveillance Systems.** (3) (every fall) Introduction to the concepts, implementation, and evaluation of surveillance systems to monitor the health of human populations.
- EPID 741* **Intermediate Epidemiologic Methods.** (3) (every spring) (Prereq: EPID 701, PUBH 725 or equivalent course; Coreq: BIOS 757/758, and either Prereq: BIOS 710 or Coreq: BIOS 709). Application of epidemiologic methods to current health problems through analysis of secondary data. Strategies for investigating etiologic hypotheses, assessment and control of confounding.
- EPID 744 **Cardiovascular Disease Epidemiology.** (3) (Prereq: EPID 701, PUBH 725 or equivalent course) (spring of every odd year). Epidemiology of selected groups of cardiovascular diseases (CVD) including etiology, pathophysiology, identification, and description of events of CVD, and outcomes. (Doctoral students: See EPID 844)
- EPID 746 **Cancer Epidemiology.** (3) (spring of every odd year) (Prereq: EPID 700). Epidemiology of selected cancers in humans, including etiology, pathophysiology, identification and description of events of cancer and outcomes.
- EPID 747 **Environmental Epidemiology.** (3) (not currently being offered) (Prereq: EPID 700, BIOS 700). Emphasis on the epidemiology of selected environmental factors which may affect human health including the identification of health hazards and methods of investigation. (Doctoral students: see EPID 847)
- EPID 749* **Infectious Disease Epidemiology.** (3) (every fall) (Prereq: EPID 700 and BIOS 700, or consent of instructor). Covers bacterial, viral, parasitic and fungal diseases of public health importance. Emphasis on epidemiologic methods basic to investigation, prevention and control of infectious diseases.

- EPID 763 **Nutritional Epidemiology.** (3) (every fall) (Prereq: EPID 701, PUBH 725 or equivalent course). Covers methodology for investigating nutrition's role in health, including nutritional assessment and the design and interpretation of research studies. Substantive issues emphasize major public health concerns of the 21st century.
- EPID 765 **Reproductive and Perinatal Epidemiology.** (3) (spring of every even year) (Prereq: EPID 701, PUBH 725 or equivalent course and BIOS 701 or permission of instructor). Epidemiology of major reproductive outcomes in humans with emphasis on pathophysiology, risk factors, analytic methods of investigation and surveillance/monitoring of reproductive events. (Doctoral students: see EPID 865)
- EPID 767* **GIS and Public Health Applications.** (3) (Every even fall). Principles and application of basic and intermediate-level GIS technologies in public health practice and research. (Doctoral students: see EPID 867)
- EPID 768 **Psychiatric Epidemiology.** (3) (every fall) (Prereq: EPID 701, PUBH 725 or equivalent course). Methodologic issues in the epidemiologic study of psychiatric disorder, the epidemiology of mayor psychiatric outcomes, and issues in the study of special populations.
- EPID 770* **Social Epidemiology.** (3) (every even spring) (Prereq: EPID 701, PUBH 725 or equivalent course). Influence of social factors and the distribution of those factors on patterns of health and disease. Including individual- level examinations of the role of social determinants in producing health, as well as more macro-level examinations of patterns of social disparities in health status.
- EPID 777 **Fundamentals of Epidemiology.** (3) (every spring) (Prereq: EPID 701, PUBH 725, or equivalent course; BIOS 701). This course is an introduction to the field of genetic epidemiology, providing students with an understanding of: 1) basic genetics, 2) the tools used by geneticists and genetic epidemiologists, and 3) the integration of genetic data into traditional epidemiologic and computational software tools used to analyze genetic data.
- EPID 788* **Practical Methods for Secondary Data Analysis.** (3) (every fall) (One of the following two options: 1) PUBH 725 AND BIOS 709 OR 2) EPID 701 AND BIOS 701 AND Either BIOS 709 or BIOS 710; Recommended pre-requisite: 1) BIOS 757 OR BIOS 758 OR BIOS 754; and 2) EPID 741 or equivalent research methods course. Instructor reserves the right to waive course requirements.). Methods include data management and analysis using SAS, data interpretation, survey designs, weighting techniques, and innovative record linkages. Introduction to data sources and methods commonly used by epidemiologists and health analysts in state or federal health departments and research settings.

- EPID 790 **Independent Study.** (1-6) (Prereq: permission of instructor). Directed research on a topic to be developed by MPH or MS student and instructor. May be repeated.
- EPID 794 **Special Topics in Epidemiology.** (1-6). Content varies by title. May be repeated for total of 6 credit hours.
- EPID 796* **Integrated Learning Experience.** (3) (Pre-requisites: PUBH 724, 725, 726, 730, 735, EPID 741 or permission of Graduate Director) (Restricted to EPID MPH students). Demonstrate synthesis of MPH foundational and concentration competencies to address a public health issue in the form of a high-quality written product.
- EPID 798 **Epidemiology Applied Practice.** (3) (Pre-requisites: PUBH 724, 725, 726, 730, 735 or permission of Graduate Director) (Restricted to EPID MPH students). Apply and test public health concepts, theories, and analytical tools learned in the classroom to real-world public health issues outside of the classroom in any one of a variety of settings.
- EPID 799 **Thesis Preparation.** (1-9). (Pre-requisites: Successful completion of the progression exam).
- EPID 800 **Advanced Methodological Theory in Epidemiology.** (3) (every fall) (Prereq: EPID 741 or permission of instructor). Advanced epidemiologic methods in the design of epidemiologic studies, with emphasis on causal inference. Theories and frameworks of causation and interactions between causes and graphical visualization tools.
- EPID 801 **Advanced Analytical Methods in Epidemiology.** (3) (every spring) (Prereq: EPID 741 and BIOS 757 or equivalent courses). Application of advanced analytical methods, relying heavily on problem solving, data analysis and interpretation.
- EPID 802 **Grant Writing for Epidemiologists.** (3) (every spring) (Prereq: EPID 741 or permission of instructor). Extension of research design and development issues with focus on writing a major research grant application.
- EPID 805 **Introduction to Systematic Reviews and Meta-analysis** (1 or 3) (every spring) (Prereq: BIOS 700/701 (or their equivalent) and, preferably, BIOS 757 with a grade of "C" or better) (cross-listed with EXSC 805). Overview of how to conduct systematic reviews and meta-analyses from published scientific literature.
- EPID 820 **Seminar in the Epidemiology of Health Effects of Physical Activity.** (3) (currently not offered) (Prereq: EPID 741, BIOS 759). Seminar presentation and group discussion on the major issues in the study of physical activity and exercise and its impact on health.

- EPID 830 **Seminar in the Epidemiology of Aging.** (3) Exploration in depth of theories, current health problems, research, and methodological issues in the epidemiology of aging.
- EPID 844 **Advanced Cardiovascular Disease Epidemiology: Evidence Synthesis and Evaluation.** (3) (Meets with EPID 744, every odd Spring). The purpose of the course is to provide a comprehensive overview of the field of cardiovascular disease epidemiology and enable the student to gain a thorough understanding of the population burden of CVD and its contributing factors. Emphasis will be placed on using evidence synthesis tools such as systematic reviews and meta-analyses to evaluate the scientific literature. Students will gain experience in evaluating systematic reviews and developing a protocol for a systematic review/meta-analysis.
- EPID 845 **Doctoral Seminar.** (1) (every semester) (Prereq: complete at least one semester of coursework and consent of instructor). May be repeated for credit up to 3 times as content varies by title. Seminar covers topics such as plagiarism and professional writing (845A), contemporary issues and novel methodological approaches in the field of epidemiology (845B), and career development (845C). (Pass/Fail grading)
- EPID 847 **Advanced Environmental Factors and Human Health.** (3) (Not currently being offered) (Prereq: EPID 701 or PUBH 725, BIOS 701). Advanced methods encompassing the investigation of environmental factors and how they affect human health. Emphasis on reading and interpreting the peer reviewed scientific literature and developing a systematic literature review and grant proposal.
- EPID 861 **Fundamentals and Applications of Translational Science** (3) (every fall) (required for BBIP trainees in Year 2). The course is divided into two parts. Part I, the Fundamentals of Translational Science, will provide students with foundational information to understand the basic principles of translational science. Part II of the course, Applications of Translational Science, will provide students with real-world examples of translational science research.
- EPID 865 **Methods in Reproductive and Perinatal Epidemiology.** (3) (Meets with EPID 765, offered every even spring) (Prereq: EPID 701 or PUBH 725, BIOS 701). This course provides an overview of reproductive and perinatal epidemiology and the applications in the field of Maternal and Child Health. It covers the current and emerging topics in this area. Designed for doctoral students with interests in conducting research related to reproductive and perinatal epidemiology.
- EPID 867 **Geographic Information Systems for Public Health Research.** (3) (Meets with EPID 767, every fall). Principles and application of basic and intermediate-level GIS technologies in public health research. Designed for doctoral students with interest in conducting health-related research using GIS methods.

- EPID 869 **Clinical Effectiveness.** (3) (varies) (Prereq: EPID 701, PUBH 725 or equivalent course). This course develops skills in the application of epidemiologic methods to clinical effectiveness research, defined as generating evidence to inform stakeholders about treatment options, and improve treatment safety, quality, efficiency, and effectiveness.
- EPID 877 **Advanced Methods and Concepts in Nutritional Research.** (3) (varies) (Prereq: EPID 763 or permission of instructor). Advanced methods and concepts in nutrition research addresses aspects of nutrition ranging from nutritional biochemistry to dietetics and community nutrition education. It covers disciplinary breadth encompassing the study of effects of dietary exposures on inflammation, epigenetics, immune function, psychological states and traits, physiologic states, and pathophysiologic processes, including carcinogenesis.
- EPID 890 **Independent Study.** (1-3) (Prereq: permission of instructor). Directed research on a topic to be developed by doctoral student and instructor.
- EPID 894 **Special Topics in Epidemiology.** (1-3). Content varies by title. May be repeated for credit.
- EPID 899 **Dissertation Preparation.** (1-12) (Prereq: one full year (18 hrs.) of graduate study beyond the master's level and successful completion of the qualifying exam).

*These courses are offered in-person and online. In-Person students must talk to their program director before enrolling in any online courses.

Biostatistics Graduate Courses

- BIOS 700 **Introduction to Biostatistics.** (3) (every fall, spring & summer). Health related statistical applications. Descriptive statistics, probability, confidence intervals, hypothesis testing, regression, correlation, ANOVA. May not be used for graduate credit in epidemiology or biostatistics.
- BIOS 701 **Concepts and Methods of Biostatistics.** (3) (every fall). Descriptive and inferential statistical applications to public health. Probability, interval estimation, hypothesis testing, measures of association. For students planning further study in epidemiology or biostatistics.
- BIOS 709* **Basic Software for Public Health.** (1) (every fall & summer). Statistical data management techniques. Microcomputer applications, communication between microcomputers and mainframe, tape and disk storage, access to large health-related databases.

- BIOS 710 **Effective Data Management for Public Health.** (3) (every fall & summer). This course teaches techniques for creating and using small data sets. Students will become familiar with four software packages used for data entry, data management, and presentation, PC/SAS, STATA, MS Excel, and MS Access.
- BIOS 711 **Introduction to R Programming.** (1) (every fall). Students will learn the software program R for performing data management. R software includes basic to advanced commands for properly formatting data for analysis for public health data.
- BIOS 712 **Introduction to Stata Software.** (1) (every spring). Students will learn the software program Stata for performing data management. The course covers basic to advanced commands for properly formatting data for analysis for public health data.
- BIOS 714 **Introduction to MS Access for Public Health.** (1) (every fall). This course focuses on the uses of Microsoft Access for data management in public health. The course takes the student through building tables, forms, queries, reports and finishes with automated scripts for each use with Access.
- BIOS 719* **Advanced SAS Methods for Public Health.** (1) ((every fall, spring & summer). Building upon skills learned in BIOS 709 (Introduction to SAS), students will learn data management using PROC SQL & SAS Macro Language which prepares data for conducting efficient statistical analysis.
- BIOS 735 **Machine Learning for Public Health Applications.** (3) (every even fall) (Prereq: BIOS 757 and BIOS 755). introduces the fundamental concepts and applications of machine learning (ML) in the context of public health, biostatistics, and related fields (e.g., epidemiology, psychology, neuroscience, genetics).
- BIOS 740 **Functional Analysis for Digital Health.** (1) (every even fall). Introduces modern functional data analysis methods for modeling high-dimensional biomedical data that arise as functions, curves, or surfaces, with applications to digital health technologies (e.g., wearables and medical imaging) to analyze, quantify associations, and predict health outcomes.
- BIOS 745 **Seminar in Biostatistics.** (1) (every fall). Analysis of current and prospective issues in biostatistics, including historical foundations. Includes student exploration of unsolved problems and examination of central issues in biostatistics. (Pass/Fail grading)
- BIOS 746 **Introduction to Complex Survey Data Analysis.** (1) (every spring). Students will learn the basics of data collection methods, sampling design for linear, logistic, and survival analysis complex models using survey data. (Pass/Fail grading)

- BIOS 754 **Discrete Data Analysis.** (3) (every fall) (Prereq: BIOS 757 and EPID 700/701). Analysis of discrete data in public health studies. Relative risk, odds ratio, rates and proportions, contingency tables, logistic regression, introduction to other advanced topics. Not for Biostatistics majors.
- BIOS 755 **Introduction to Longitudinal Data Analysis.** (3) (every spring) (Prereq: BIOS 757). An introduction to principles and methods for longitudinal data, which are often encountered in practice where multiple measures are observed over time on an individual. This course is designed for non- biostatistics major researchers, with a focus on data analysis and interpretation more than theoretical development. Problems will be motivated by applications in epidemiology and clinical medicine, health services research, and disease natural history studies.
- BIOS 757* **Intermediate Biostatistics.** (3) ((every fall, spring & summer) (Prereq: A course in introductory statistics). Public health applications of correlation, regression, multiple regression, single and multi-factor analysis of variance and analysis of covariance.
- BIOS 758 **Advanced Linear Models in Biostatistics.** (4) (every spring) (Prereq: BIOS 701). Additional topics in analysis of health data including regression diagnostics, multicollinearity of observational data, ridge/nonlinear regression, principal components, random/missed effects, unbalanced designs, repeated measures, and sampling and design effects.
- BIOS 759 **Theory and Methods of Discrete Data Analysis.** (2-3) (every fall) (Prereq: EPID 701 and BIOS 757). The concepts, principles and biostatistical techniques necessary to analyze categorical epidemiological data including dose response curves, life tables and discrete measures of association. Estimation of parameters for logistic and other commonly used epidemiological models.
- BIOS 760 **Biostatistical Methods in Clinical Trials.** (3) (every even fall) (Prereq: EPID 700, BIOS 700, EPID 741, BIOS 757). This course will cover the basic and advanced statistical techniques necessary for the design, conduct, analysis and interpretation of results of clinical trials.
- BIOS 761 **Survival Analysis I.** (3) (every fall) (Prereq: BIOS 757 or equivalent). Methods for the analysis of survival data in the biomedical setting. Underlying concepts; standard parametric and nonparametric methods for one or several samples; concomitant variables and the proportional hazards model.
- BIOS 762 **Genetic Statistics I.** (3) (ever odd spring) (3) This course Introduces key statistical methods and concepts for analyzing genomic data, including GWAS, differential expression and methylation, ChIP-seq, single-cell and spatial transcriptomics, and multi-omic integration, with applications to complex human diseases such as cancer and hands-on implementation using R and Bioconductor.

- BIOS 765 **Research Design in the Biomedical Sciences.** (3) (Prereq: BIOS 757). Fundamentals of constructing, analyzing, and interpreting biomedical studies; internal and external validity, sample size determination, completely random designs, blocking, crossover designs, confounding, nested designs, repeated measure designs.
- BIOS 767 **Spatial Statistics for Public Health.** (every odd fall) (3) (Prereq: BIOS 700/701 or equivalent). Spatial statistics methods commonly used in public health which includes mapping, tests for spatial correlation, hypothesis tests for spatial clustering, and regression models with spatial random effects.
- BIOS 768 **Signal and Network Analysis for Public Health** (3) (every odd spring) Introduces computational methods for analyzing signals and networks in public health and biomedical research, including time-series and frequency-domain techniques, filtering, graph theory, network measures, random networks, and epidemic spreading, with emphasis on interpretation and hands-on application to real data.
- BIOS 770 **Applied Longitudinal Data Analysis** [= STAT 771]. (3) (every spring) (Prereq: BIOS 757 or STAT 701 or STAT 705). Modern methods for the analysis of repeated measures, correlated outcomes, and longitudinal data, including repeated measures ANOVA, generalized linear models, random effects, and generalized estimating equations.
- BIOS 772 **AI for Biomedical Data** (3) (every even spring) Introduces deep learning architectures for analyzing large-scale biomedical data including genomics, electronic health records, and medical imaging, emphasizing model interpretability, ethical considerations, multi-modal data integration with real-world example applications, and implementation using Python.
- BIOS 780 **Introduction to Quantile Regression.** (3) (Prereq: BIOS 757). Principles and methods for quantile regression analysis, which is a robust statistical approach that extends the classical mean regression analysis based on least squares.
- BIOS 790 **Independent Study.** (1-6) (Prereq: permission of instructor). Directed research on a topic to be developed by MPH or MSPH student and instructor. May be repeated.
- BIOS 794 **Special Topics in Biostatistics.** (1-6).
- BIOS 798 **Public Health Practice.** (1-6) (Prereq: 9-10 hours of specified courses including EPID 700, EPID 741, BIOS 700). Performance of a limited work of service project in a public need setting, pursuit of planned learning objectives related to previously identified aspects of the student's chosen role. Self-monitoring and regular seminars focusing on learning accomplishments. (Pass/Fail Grading)
- BIOS 799 **Thesis Preparation.** (1-9).

- BIOS 805 **Categorical Data Analysis.** [=STAT 770] (3) (Prereq: BIOS 759 or STAT 704 and consent of instructor). Advanced methods for analysis of discrete data. Higher order contingency tables, log-linear and other generalized linear models. Multivariate methods for matched pairs and longitudinal data.
- BIOS 811 **Survival Analysis II.** (3) (every even spring) (Prereq: BIOS 761). Parametric survival analysis accelerated failure time model, frailty model, competing risk model and multi-state model. Techniques motivated by applications in epidemiology and clinical medicine research, applications demonstrated using public health data sets.
- BIOS 816 **Advanced R Programming for Public Health.** (3) (Prereq: BIOS 711). This course provides the principles and techniques to efficiently design, implement, and execute simulation and data analysis routines in quantitative fields like biostatistics, statistics, engineering, finance, and data science.
- BIOS 818 **Advanced Computational Statistics for Signal and Network Analysis.** (3) (every even spring) (Prereq: BIOS 711 & BIOS 757). This course provides an overview of advanced computational statistics for signal and network analysis with a wide variety of social, genomic, and neuroscientific applications.
- BIOS 820 **Bayesian Biostatistics and Computation.** [=STAT 745] (3) (every odd fall) (Prereq: BIOS 757 or STAT 705). An introduction to Bayesian computational algorithms and analysis methods in areas of epidemiology, survival, bioassay, logistic and log-linear regression modeling and longitudinal data.
- BIOS 822 **Statistical Methods in Spatial Epidemiology.** (3) (every even fall) (Prereq: BIOS 757 and 759). A comprehensive introduction to the statistical methods used in the analysis of geo-referenced spatial health data. Topics range from disease mapping to prospective surveillance.
- BIOS 825 **Multivariate Biostatistics.** (3) (every even fall) (Prereq: STAT 516 or BIOS 757). Analysis of multivariate data as found in biomedical studies; multivariate linear models, principal components analysis, factor analysis, discriminant and cluster analysis. Other special multivariate topics such as principal components regression.
- BIOS 835 **Biostatistical Machine learning for Public Health.** (3) (Prereq: BIOS 757, BIOS 758 & BIOS 755 or BIOS 770). Machine learning is a rapidly expanding field which aims to develop methods that use data to perform a variety of tasks in nearly all quantitative fields. In biostatistics and public health, machine learning methods are commonly used to predict outcomes and/or estimate risk factors from high-dimensional omics or neuroimaging data.
- BIOS 845 **Doctoral Seminar.** (1) (Prereq: complete at least one semester of coursework and consent of instructor). May be repeated for credit. (Pass/Fail grading)

- BIOS 890 **Independent Study.** (1-3) (Prereq: permission of instructor). Directed research on a topic to be developed by doctoral student and instructor. May be repeated.
- BIOS 894 **Special Topics in Biostatistics.** (3). Discussion on current and emerging issues in biostatistics. May be repeated for credit.
- BIOS 898 **Doctor of Public Health Practicum.** (1-6).
- BIOS 899 **Dissertation Preparation.** (1-12) (Prereq: one full year (18 hrs.) of graduate study beyond the master's level).

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FORMS

Forms Available on Graduate School Website

Graduate School:

[Forms Library - Graduate School | University of South Carolina](#)

1. [Course Overload Enrollment Authorization \(GS-54 CEO\)](#)
2. [Dissertation Signature and Approval Form \(G-DSF\)](#)
3. [Doctoral Committee Appointment Request \(GS-48 G-DCA\)](#)
4. [Doctoral Comprehensive Exam Verification](#)
5. [Doctoral Program of Study \(DPOS\)](#)
6. [Graduate Assistant Appeal to Work 21-25 Hours \(GAA\)](#)
7. [Grievances, Appeals and Petitions form \(G-GAP\)](#)
8. [Independent Study Contract \(GS-50 G-ISC\)](#)
9. [Master's Comprehensive Exam Verification](#)
10. [Master's Program of Study \(MPOS\)](#)
11. [Master's Thesis Signature and Approval Form \(G-TSF\)](#)
12. [Permit for Course Revalidation Examination \(GS-04 PRE\)](#)
13. [Program of Study Adjustment Form \(GS-43 POSA\)](#)
14. [Qualifying Exam Verification](#)
15. [Request for Special Enrollment or Z-status \(GS-ZS\)](#)
16. [Request for Transfer of Graduate Credit \(G-RTC\)](#)
17. [Survey of Earned Doctorates \(SED\)](#)

Forms Available on Departmental Website

Department: https://www.sc.edu/study/colleges_schools/public_health/study/areas_of_study/epidemiology_biostatistics/current_students/forms/index.php

1. [Checklist for Master's Students](#)
2. [Checklist for Doctoral Students](#)
3. [Advisement Form \(ASPH Form\)](#)
4. [Doctoral Dissertation Proposal Form \(Department form\)](#)
5. [Master's Committee Appointment form \(Department form\)](#)
6. [Master's Thesis Proposal Form \(Department form\)](#)
7. [Early Clearance Procedures](#)
8. [Delayed Embargo Request Template](#)
9. [Teaching Assistant Evaluation Form](#)

Request for Travel Authorization available online

https://www.sc.edu/study/colleges_schools/public_health/study/areas_of_study/epidemiology_biostatistics/epid_bios_travel_authorization/index.php

Travel requests must be submitted and approved before the travel can commence. Receipts for all expenses must be submitted to the Program Coordinator immediately following the approved travel. Contact Program Coordinator with questions or additional travel information.