

**Where  
Information  
Is Shaping  
the Future  
of Health**



**PUBLIC HEALTH  
AND INFORMATION  
SCIENCES**

**UNIVERSITY of LOUISVILLE.**  
*Health Sciences Center*



*Public health is more than restaurant inspections, flu shots, SARS containment and managing health departments. It is identifying emerging health threats and risks, monitoring health factors and status, understanding how people seek and respond to health information and preparing responses to events that can affect the public's health—including terrorism. Public health coordinates both the academic research and the pragmatic actions needed to address the full range of challenges in protecting the public's health.*

The name of our school—Public Health and Information Sciences—is a clear indicator that we are not a traditional school of public health. While we embrace the traditional tasks and roles of public health specialists, we recognize that protecting the public's health today requires much more. It requires a new approach that integrates how information about the public's health is acquired, evaluated, acted on and disseminated, and how these affect the public and its health. It requires preparing our students for careers in the 21st century by using 21st century knowledge and techniques.

As a student in our school, you will be a front-line participant in the evolution of public health, learning both the foundations of public health theory and practice and new ways to think about and manage health information in the interconnected world of today and tomorrow. You will have access to top-notch faculty, state-of-the-art facilities and learning technologies, exciting and innovative courses, and, of course, an enthusiastic group of fellow students.

Most importantly, you will learn to apply your knowledge and skills to real-world situations by actually doing so in real-world situations. The education you gain at our school will give you a solid foundation for achieving professional and personal success in the world of 21st century public health—or, indeed, in any field you choose.

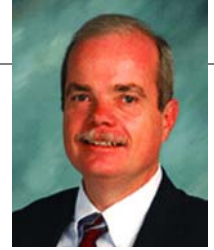
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## *FROM THE DEAN*

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The mission of the School of Public Health and Information Sciences is to be a national center of excellence for research and education in population-focused health sciences. We will achieve our mission through providing the highest quality research, teaching and service.

The school was established in response to the University's focus on excellence in research and education. The school offers several academic programs, including a Master of Public Health (MPH), three Masters of Science (MS and MSc) and two Doctors of Philosophy (PhD). Most programs have specific concentrations that allow students to direct their studies to individual areas of interest.

The school's five departments are Bioinformatics and Biostatistics; Environmental and Occupational Health Sciences; Epidemiology and Population Health, Health Promotion and Behavioral Sciences and Health Management and Systems Sciences. The school also has the Center for Health Hazards Preparedness, a federally funded training program focusing on the early recognition and response to natural disasters and potential acts of terrorism. A major emphasis is collaboration and integration within the school, the university, the community and the nation.

Public health involves many health professions focusing on promoting health, preventing disease and other health problems and intervening at an early point to reduce consequences to the community. Public health also involves research to create the knowledge needed to further advance the field.

We look forward to the opportunity to participate with you in creating a safer and healthier community.

Best regards,

*Richard D. Clover, M.D.*  
*Dean*

# DEPARTMENTS

## BIOINFORMATICS AND BIOSTATISTICS

The Department of Bioinformatics and Biostatistics is on the leading edge of research in the health sciences. Offering degree programs in Biostatistics and Decision Science, students have the opportunity to participate in quantitative research in public health, medicine, dentistry and nursing.

Biostatistics is a discipline that is fundamental to all types of experimental designs in all research disciplines. Students in the department's concentration in biostatistics learn about advanced statistical techniques and methodology, design of experiments, analysis of data and many other areas of statistics within the health sciences. Students also learn to use the most up-to-date software programs in biostatistics, making them marketable after graduation in academia, the health sciences and the private sector.

Decision science is a discipline that involves skills required to evaluate the utility of medical, public health and health policy interventions. Emphasis is on quantitative decision analysis methods. The methodology provides insight into the benefits of medical practices and can give information about the risks and benefits of research, including community-based participatory research. Students in the decision science concentration examine and create methods to help patients, health care workers, and the public to make better, more informed health care decisions.

Bioinformatics is an emerging field that combines elements of molecular biology (e.g., genomics, proteomics, metabolomics), health information systems, computer engineering, biostatistics, mathematics and other fields. The departmental focus is on development and application of statistical methodology as it relates to bioinfor-

matics, on teaching these methods, and on collaboration with applied research groups that utilize bioinformatics methods.

*The Department of Bioinformatics and Biostatistics currently offers a PhD with a concentration in Biostatistics-Decision Science. A Master of Science (MS) is offered with a concentration in either Biostatistics or Decision Science. The Master of Public Health (MPH) degree is offered by the School of Public Health and Information Sciences and includes an option to concentrate in biostatistics. Coursework in Bioinformatics is currently under development.*



## HEALTH PROMOTION AND BEHAVIORAL SCIENCES

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Information about health, risks, and disease is readily available, if not inescapable, to all parts of the public. The information comes from myriad sources, with widely varying intent, validity, and usability. The use of health information by individuals, including health workers, has become a major factor in the health of the public.

Recognizing the critical intersection of public health and health information sciences, the Department of Health Promotion and Behavioral Sciences (DHPBS) has been established to study the utilization of information for health and to investigate methods for increasing its effectiveness.

The department's focus is on health information utilization and its effects on individuals, including traditional and automated techniques by which all sectors of the public, including healthcare providers and public health workers, deal with such areas as risk communication, information access and integration, semantics and vocabularies and decision-making. Expanding traditional public health approaches to health education and behavior, the department is studying the cognitive aspects of health behaviors and how information affects these behaviors, including the gathering, integration, communication and diffusion of health knowledge.

In addition to studying these content areas, the coursework in the Department is designed to help students develop critical thinking skills and to use these skills in the real world. Different instructional styles are used to help students improve their acquisition and application of knowledge, including online enhancement, team learning and community involvement.

Department faculty and staff work with local and national healthcare organizations, other departments and schools in the university, and government and commercial entities. A major project is the Health Research Data System and its use in electronic surveillance of public health and bioterrorism. Work on this project has led to the development of important and innovative techniques for aggregating de-identified electronic health data from multiple sources and for normalizing electronic vocabularies.

The department recognizes its responsibility to utilize theoretical and applied knowledge in helping to understand and address both today's and tomorrow's public health issues and to do its part in protecting the public's health.

*The School of Public Health and Information Sciences offers an MPH degree with a concentration in health promotion and behavioral sciences. A PhD program is being developed and should be available in the near future.*



## **ENVIRONMENTAL AND OCCUPATIONAL HEALTH SCIENCES**

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The world shares an environment that affects the health of all communities and all individuals. To fully understand the health of populations, we must understand the impacts of environmental and occupational exposures.

The Department of Environmental and Occupational Health Sciences focuses on regional, state, and global environmental issues affecting our community, the nation, and the world. Through community-oriented education and research, faculty members strive to understand, impact, and improve the health of the public.

As the world changes, emergent themes in environmental health research have created new areas of focus, including how to improve the health of susceptible populations. A particular theme of the research conducted in the Department of Environmental and Occupational Health Sciences is health effects of air pollution. This includes research in the areas of asthma, airborne particulates and hazardous chemicals. Other

susceptible populations include children, the elderly, the disabled and underserved minority communities.

Other research themes in the Department of Environmental and Occupational Health Sciences include environmental justice, environmental stress, environmental health effects, environmental health education in schools, asthma absenteeism in the schools, protecting the health of workers and health effects of nanoparticles.

*The School of Public Health and Information Sciences offers an MPH degree with a concentration in environmental health and will offer a PhD degree in Fall 2007.*



## EPIDEMIOLOGY AND POPULATION HEALTH

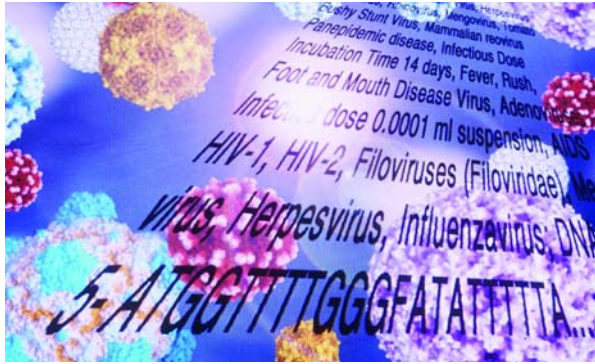
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The Department of Epidemiology and Population Health currently offers an MPH concentration in Epidemiology and MS and PhD degrees in Epidemiology and Health Services and Outcomes Research.

Epidemiology and Population Health science is directed at identifying the determinants of health, disease, disability and death in populations for the purposes of promotion, control and prevention. Thus, it is a core discipline for public health that provides much of the information necessary for the development, implementation and evaluation of public health intervention, policy and law. Modern Epidemiology is a *transdisciplinary* science, and epidemiologists regularly integrate new knowledge on disease biology and mechanisms with environmental and behavioral science and complex statistical methods in population-based studies designed to illuminate disease etiology and test preventive interventions. They also often play a significant role in designing clinical trials to test new treatments to ameliorate disease or improve prognosis.

The mission of the Department of Epidemiology and Population Health is to provide the highest possible quality education and training in the philosophy, principles and practice of modern epidemiology in MPH, MS and PhD curricula; to promote interdisciplinary teaching and health research within the School of Public Health and Information Sciences and across the university; to conduct innovative, interdisciplinary research on the causes and consequences of disease in populations using state-of-the-art methods; to conduct research that translates findings from “the bench” to “the community” and from the “the community” to “the bedside”; to help build epidemiologic capacity and infrastructure at local, state and federal levels and to become recognized as a major provider of education, research, and service throughout the region.





## HEALTH MANAGEMENT AND SYSTEMS SCIENCES

Because of the constantly increasing flow of information through today's globally interconnected world, administration and management of public health-related projects, organizations and networks are becoming ever more complex. The Department of Health Management and Systems Sciences was created to advance knowledge of how to think and act in this increasingly complex, interconnected, and rapidly-changing world.

The department's vision is to become a nationally recognized center of excellence in understanding health organizations and networks from the perspective of complexity sciences, which have now become a field in their own right with growing numbers of dedicated societies, journals and institutes. Many problems in our society and its health sector can be described as originating in or arising out of complexity.

The department emphasizes a dynamic, collaborative and transdisciplinary learning style involving simultaneous teaching and learning by both faculty and students. Learning is tied to current issues and challenges in the health sector. Emphasis is on systems and processes for understanding and managing health systems and networks under conditions of complexity. Students acquire leading-edge knowledge covering people and organizational issues, systems structures, properties and behaviors, health law and ethics, health regulations and policies, health economics, organization management, health information and information technology management, health services management and population health management.

Students will emerge better prepared to navigate the complexity of 21st century health administration and management and make a measurable contribution to improving the health of the public.

*The School of Public Health and Information Sciences is currently offers an MPH degree with a concentration in health management and a PhD in Public Health Sciences with a concentration in health management.*

Students wanting to concentrate their studies for the MPH degree in epidemiology are required to have prior course work in a biomedical science (e.g., cell or molecular biology, biochemistry, etc.) or to enroll in appropriate biomedical science course work at the Health Science Center concurrent with their MPH studies.

Students with a prior baccalaureate or more advanced degree in an appropriate field of study from a regionally accredited university or college will be eligible for the MS program in epidemiology. Previous coursework in mathematics and/or statistics and biological or health sciences (for example, biology, biochemistry, anatomy, physiology, microbiology) is strongly recommended. Applicants who are judged to not have sufficient prior coursework or experience in these areas may be required to take additional coursework.

Students who have satisfactorily completed the MS degree will be eligible for the PhD concentration in Epidemiology. Students with a Master's degree in a related discipline or an advanced degree (MD, PhD, DO) may be accepted also pending evaluation of appropriate training, experience, or coursework. Previous coursework in mathematics and/or statistics and biological or health sciences (for example, biology, biochemistry, anatomy, physiology, microbiology) is strongly recommended. Students completing the MSc or MPH-Epi concentration may be required to complete additional coursework to be accepted into the epidemiology PhD program.



## CENTER FOR HEALTH HAZARDS PREPAREDNESS

The Center for Health Hazards Preparedness (CHHP), formerly the Center for Deterrence of Biowarfare and Bioterrorism, coordinates research, education and service focusing on the early recognition and response to potential acts of terrorism and natural disasters. Housed within the offices of the University of Louisville School of Public Health and Information Sciences, CHHP is part of the network of Centers for Public Health Preparedness (CPHP), established in 2002 through a cooperative agreement with the Centers for Disease Control and Prevention (CDC).

The center's activities aim to bring together the information resources, human expertise and research infrastructure to improve the local, regional and national response to outbreaks of infectious diseases and the defense against potential biological, chemical and radiation threats and natural disasters. With funding from the Health Resources and Services Administration (HRSA), the CHHP has expanded its continuing education program. Under this initiative, we are collaborating with the University of Kentucky to develop innovative training for professionals in the fields of medicine, nursing, allied health, public health, healthcare administration, dentistry, pharmacy, mental health, agriculture and veterinary medicine. Particular effort is being made to offer presentations to Appalachian and other underserved communities using videoconference technology and web-based modules.

For more information about CHHP activities, email [chhp@louisville.edu](mailto:chhp@louisville.edu).



## ABOUT U OF L



The University of Louisville (U of L) is a state-supported, urban university located in Kentucky's largest metropolitan area. It was a municipally-supported public institution for many decades prior to joining the state university system in 1970. The university's mission is to serve the specific educational, intellectual, cultural, service and research needs of the greater Louisville region (more than one million people) and to help serve those needs statewide, particularly in the areas of medicine, dentistry, law and urban affairs.

U of L enrolls nearly 4500 graduate students and offers master's degrees in more than 50 areas and doctoral degrees in more than 20 disciplines. The university also grants professional degrees in public health, medicine, dentistry, nursing, business and law.

Eight of U of L's twelve colleges, schools, and divisions are housed on the 169-acre Belknap Campus, the primary location for U of L's centralized services and academic programs. The Schools of Medicine, Nursing, Dentistry and Public Health and Information Sciences, all part of the Health Sciences Center (HSC), are located three miles north, close to downtown Louisville.

[www.louisville.edu](http://www.louisville.edu)

## THE HEALTH SCIENCES CENTER

The University of Louisville Health Sciences Center (HSC) is located just east of downtown Louisville and is contiguous to the main properties of three separate hospital systems—the University of Louisville Hospital, Jewish Hospital and St. Mary's HealthCare and Norton Healthcare. Collectively this area, which totals 24 city blocks, is known as the Louisville Medical Center. It is easily accessible from all residential areas of the city.

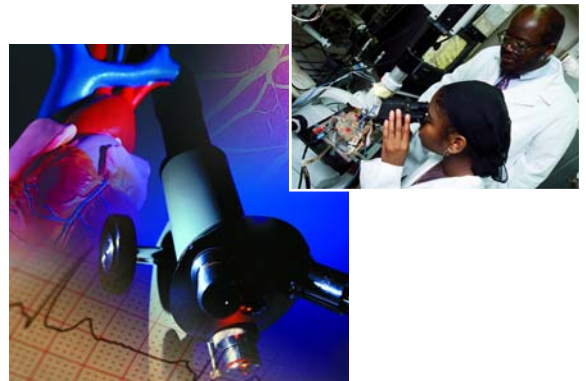
## AN EMPHASIS ON RESEARCH

U of L is a growing academic and scientific research center with outstanding facilities and a growing commitment to maintaining an atmosphere where research flourishes.

The university's focus on research incorporates an increased emphasis on graduate study, particularly at the doctoral level, with graduate students playing a strong role in many research studies. Graduate students are encouraged to work closely with faculty on research projects and hands-on application of research results.

U of L's urban mission facilitates graduate learning opportunities through community partnerships that address urban issues, foster economic development and improve the quality of education and health care available to the community and state.

[research.louisville.edu](http://research.louisville.edu)



SCHOOL OF PUBLIC HEALTH  
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**UNIVERSITY of LOUISVILLE.**

*Health Sciences Center*

The University of Louisville is an equal opportunity institution.

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