



Doctor of Philosophy Program Competencies

Epidemiology

Upon graduation, a student with a Doctor of Philosophy in Epidemiology should be able to...

1. Recognition of Public Health Problems
A. Recognize public health problems and the epidemiologic role in addressing them.
2. Problem Conceptualization and Critical Thinking
A. Develop comprehensive knowledge of epidemiologic concepts.
B. Critically evaluate scientific literature using epidemiologic principles and methods.
C. Generate and evaluate hypotheses for epidemiologic research.
3. Study Design / Methodology
A. Identify and discuss advantages and limitations of epidemiologic study designs, including practical aspects of their use and trade-offs in particular studies.
B. Independently design and implement epidemiologic investigations to answer specific research questions
C. Recognize potential sources of bias in estimating population parameters, and implement strategies to control biases and reduce random error
D. Identify appropriate data sources to answer specific research questions
E. Develop and manage data collection procedures for new and existing data sources
4. Data Analysis and Interpretation
A. Critically evaluate reports of epidemiologic studies
B. Select and apply appropriate statistical approaches to analyze epidemiologic data
C. Use the results of epidemiologic data analyses to make causal inferences
5. Ethics / Policy
A. Understand and apply principles for ethical study conduct and treatment of research participants
B. Know and apply principles of publication ethics related to conflict of interest, authorship, and falsification of data
C. Bring epidemiologic perspectives to the development and analysis of public health policies
6. Other Professional Skills
A. Communicate epidemiologic concepts and findings orally and in writing in accordance with professional standards to professional audiences, policy makers, and the general public.
B. Demonstrate knowledge, communication skills, and respect for students necessary to effectively teach epidemiology
C. . Synthesize and communicate epidemiologic concepts, information from the scientific literature and original ideas to develop a competitive grant proposal

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