

MPH 520 - Molecular & Genetic Epidemiology

3 Credit Hours

Molecular epidemiology is a branch of epidemiology and medical science that is utilized as a tool to understand interactions between genetic, environmental and other susceptibility factors, and to identify 'at-risk' populations and individuals and contribute to the prevention of disease across populations. This course will explore genetics at the individual, family and population level, applying the use of biomarkers to study disease causation, risk assessment, and prevention. Study design and statistical methods in data analysis including gene-environment interactions, biological sample collection, storage, and banking, and current laboratory methods for biomarker analysis will be illustrated using examples from current molecular epidemiologic research in noncommunicable diseases, neurodevelopment, childhood asthma and related lung diseases, genetic screening, genetic counselling, risk assessment and disease prevention. Students will gain proficiency and experience in critically evaluating key papers in molecular epidemiologic studies. (Prerequisite: Two undergraduate courses in biology and MPH505 Epidemiology. A basic understanding of molecular genetics is preferred.)

Prerequisites

[MPH 505](#)