Designing
Geneticists

Study design issues in population-based genetics and genomics research
Introduction

Emily L. Harris, PhD, MPH
Epidemiologist, Office of Population Genomics

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Motivation for the Session

- Population-based designs being used more frequently to:
  - Answer genetics questions
  - Study the relationship among genes and between genetic and environmental factors

- Study design
  - Critical aspect of a study
  - Driven by the goals of the study

- Genetics community
  - Less likely to have received education in design principles for population-based study designs
Objectives of the Session

Better understand:

» Design principles of case-control and cohort studies  
  Moyses Szklo

» Difference between internal validity and external validity, how to decide the importance of each when designing a study, and how study design affects validity  
  Robert Hoover

» Main types of bias, how to avoid them, and how to look for them in a study  
  Teri Manolio

» Special challenges of genome-wide association studies  
  Ellen Wijsman