

# Bias



# Types of Associations



- Spurious (fake/not real)
  - By chance
  - By bias (error)
  
- Real
  - Non-causal (Confounding)
  - Causal

# Error



- Random Error
- Nonrandom Error (systematic)
  - Threat to internal validity
  - (Lack of nonrandom error = internal validity)
  - Three Broad Categories
    - Selection bias
    - Information bias
    - Confounding