

# Discussion Points for Sample Size

- Traditional power calculations
  - What do they guarantee?
  - Is it reasonable?
- Frequentist Alternatives - interval width
- Bayesian criteria
  - Design versus analysis priors
  - ACC
  - ALC
  - WOC
  - MWOC
  - Sample size through decision analysis
  - Bayesian/frequentist compromises
    - \* Average power
    - \* Interval width criteria with flat analysis priors
- More complex sample size situations (hierarchical models)
  - Simulations
  - Basic algorithm:
    - \* Select a criterion
    - \* Select likely inputs (point estimate or prior)
    - \* Pick a sample size
    - \* Generate data sets (1000 or more), do inference each time, see how often criterion is satisfied (on average, worst case, etc)
    - \* Increase or decrease sample size until converge on the right size to match criterion