How to deal with Non-response

• Callbacks
  – Make callbacks to obtain responses from persons who did not respond at first try
  – Analysis of callback data can provide some information about the biases that can be expected from the remaining nonrespondents.

• Two-Phase Sampling (double sampling)
  – Randomly select $n$ units in the population. Of these, $n_R$ respond and $n_M$ do not respond. ($n_R$ and $n_M$ are random variables)
  – Make a second call on a random subsample pf $100\nu\%$ of the $n_M$ non-respondents in the sample, where $\nu$ is fixed. (need some superhuman effort)
Mechanisms for Nonresponse

• Missing Completely at Random (MCAR)
  – If an SRS of size $n$ is taken, then under this mechanism the respondents will be a simple random subsample of variable size $n_R$.
  – The sample mean of the respondents, $y_R$, is approximately unbiased for the population mean

• Missing at Random (MAR) (ignorable nonresponse)
  – The nonresponse depends only on observed variables ($\mathbf{x}$).
  – We can successfully model the nonresponse, since we know the values of $\mathbf{x}$ for all sample units.

• Non-ignorable Nonresponse
  – The nonresponse depends NOT only on observed variables ($\mathbf{x}$).
  – Models can help, but can not completely adjust for the nonresponse