36-303 Team A
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II.4 Target Pop, Sampling Plan, Sampling Frame, Nonresponse Plan

Target Population: Carnegie Mellon Undergraduate Population (sophomores, juniors, seniors, and fifth+ year undergraduates)

Sampling Plan: Simple random sample without replacement of selected individuals from the C-book. Each receiving same questionnaire. We will assume that simple random sample will distribute the population evenly in each grade automatically making it this plan a stratified one. There is a slight problem in that the C-book does not indicate the grade level of the students, but to account for this we will include a question asking for the participants grade level and we will only consider survey responses of non-freshmen. This does decrease our effective sample size, but we were not conservative in increasing sample size to account for non-response and believe this should cover the potential unused observations of freshmen. With use of google-documents this is easily done.

Sampling Frame: Our sampling frame will consist of the list of students provided by the C-book. The list will have contact information in the form of email address that we plan to use for survey distribution.

Non-response Plan: Considering that the total undergraduate population of CMU is 5619, assuming that students are evenly distributed across the four grade levels, the sample target will be 75% of this population (sophomores, juniors, seniors) which is 4214 students. According to our calculations, with 95% confidence interval and 5% margin or error we would need to at least sample 353 students. Assuming we use as our medium of distribution, which has a maximum 20% response rate, we would need our sample size to be 353*5=1765 students in order to account for this low percentage.

• *Clearly discuss how you will deal with non-response:*
Assuming a 20% response rate that is associated with conducting a survey via email invitation, we will increase our sample size by 5 times to account for it. If, despite these measures, we still do not reach our desired number of respondents we will send out reminding emails so that non-responders respond. These emails serve to target non-responders who may have missed the initial email or were too busy during that time to respond (and had forgotten about our survey).

• *What will you do about reminding or following-up non-responders?*
We will send out reminding emails every week up to a total number of three emails in order to increase our response rate. We won't be able to follow-up specific non-responders as the survey is anonymous.

• If you suspect your sample is not representative of the target population, what adjustments do you anticipate making?

If our sample is not representative of the target population we will invite more participants to take our survey, thereby increasing our sample size. By the Law of Large Numbers, as our sample size approaches infinity the average of the sample result will reach a value close to the true population parameters. Therefore, the larger our sample is the stronger a representative a sample is of the true population. In our case, as the population is 4214, our sample size does not have to be considerably large, and the chance of our initial sample not being representative of the target population is not as likely as with very large populations (n=10,000+).