Technical Note

The charts on the following pages display "floating bars" that represent a 95% confidence interval for the population mean based on the sample of survey respondents. Specifically, the starting point of the bar represents the sample mean minus approximately 2 standard error units and the length of the bar represents approximately 4 standard error units (see technical note below for further details).

The floating bars give you a sense of how reliably the sample mean can be generalized to the population that these data are supposed to represent; that is, all degree-seeking undergraduates at IUPUI. The width of the bar generally increases if the sample size decreases or the variation in answers to the item increases. More narrow bars would then occur for items with larger number of respondents or smaller variation among responses.

The floating bars are particularly useful in comparing differences across items. If the bars overlap, then the apparent differences in means are not statistically significant. If the bars do not overlap, then the difference is statistically significant at the p = .05 level. The reader should note that this is a somewhat conservative test of statistical significance as explained further in the following technical note.

The mean confidence interval uses the t-value associated with a probability level of 0.05 and the degrees of freedom appropriate to each item (i.e., n - 1). For example, for an item with 1000 respondents (df = 999), the corresponding t-value is 1.9623. The mean minus the standard error (standard deviation divided by the square root of the number of respondents) is the starting point for the bar, and 2 x 1.9623 x the standard error is the width of the bar.

Since the item confidence intervals are based on item standard errors, using the non-overlap of bars as an indication of a statistically significant difference is more conservative than a t-test between the two items. This is because the corresponding t-test would employ a pooled estimate of the standard error which would generally be lower than the individual item standard errors. The conservativeness of this test is more than offset by the large number of items that one can compare across this survey. Therefore, readers should still interpret these differences conservatively.