**Module II: Individual Scores vs. Populations**

Statistics for the Behavioral Sciences

**•The Normal Distribution**

**•Z-Scores**

**Normal curve assumed in the population**

**•If we have the mean & stand. dev. then**

•Est. the normal distribution of the data

•Ex. Communications salary

•Mean = $42,500

•Stand. dev. = $6,700

•Estimate is based on the sample

•Probabilistic to population

**•What if relabeled in terms of “σ”?**

•Now standardized to the standard deviation of the population

•Called z-scores

**•Z-Scores**

•The number of standard deviations a score is from the population mean

•Compare individual scores to a population

•Compare scores from different populations

**•To calculate a Z-score you need:**

•Population mean (μ)

•Population standard deviation (σ)

•Individual score (X)

**•What is the Z-score if a height is 71 in.?**

•Population mean (μ) = 67

•Population standard deviation (σ) = 4.13

•Individual score (X) = 71

**•What if you wanted to know your height from a z-score?**

•Formula is reversible

**•To calculate a raw score (X) you need:**

•Population mean (μ)

•Population standard deviation (σ)

•Z-score (z)

**•What is the height with a z = 0?**

•Population mean (μ) = 67

•Population standard deviation (σ) = 4.13

•Z-score (z) = 0

**•What is the height with a z = -1.25?**

•Population mean (μ) = 67

•Population standard deviation (σ) = 4.13

•Z-score (z) = -1.25