Universities are in constant search of increasing student success. Measures include the retention rates and graduation rates of their student body. These rates vary significantly across universities. For example, the retention rates can be as low as 54% to as high as 98%. Little has been done to determine exactly what steps to perform in order to do so. This study attempted to determine factors that significantly influence the retention rates of full-time students and the graduation rates within 4 and 6 years. Moreover, we analyzed 4-year graduation rates by gender. Sample data on 400 universities were collected from the top 650 best U.S. undergraduate institutions as ranked by the Forbes Magazine. By examining a wide range of variables we were able to explain roughly 80 and 90 percent of the variation in retention and graduation rates. In this study, we use aggregate data (such as an average student to faculty ratio, average students’ SAT scores, or average faculty salary) rather than individual student factors. This highlights the difference between our study and previous studies. Results were analyzed to indicate several factors of significant influence that are elaborated upon and explained in depth in the research.