Generally, outreach efforts provide some type of service targeting a population that otherwise might not have access to such services. University mathematics outreach programs often target K-12 students or teachers and have one, or a combination, of the following goals: enhancement of mathematical content knowledge, development of mathematical skills, increased interest in the study of mathematics, and promotion of career choices in mathematically intensive fields. In this descriptive study, we focus on existing university mathematics outreach programs in the US, with particular interest on project goals, project design, and project assessment methods. Analysis of components and characteristics of these outreach programs will be used to provide prototypical models of mathematics outreach programs that might be of use to university mathematics departments interested in developing outreach programs that target K-12 students. (Received September 19, 2016)