Considering the level of physical inactivity, prevalence of chronic disease, and growth of the older adult population, the need for qualified exercise professionals to design, implement, and lead individuals in exercise programs has never been more important. Thus, our goal was to produce a resource for students in exercise science and related fields who are developing basic skills in conducting laboratory assessments, analyzing and interpreting data for clients, and applying this information in the design of an exercise prescription. Therein lies the uniqueness of this text: laboratory assessment and application to exercise program design all in one lab experience.