Galaxies like our Milky Way can be described in terms of their structure, dynamics, and stellar populations. Some very robust correlations between galaxy structural properties, such as total luminosity, circular velocity, and size display rather small scatter, hinting at well-regulated galaxy formation processes. A major challenge to understanding these scaling relations, their tight scatter, and ultimately galaxy formation and evolution, is the elusive interplay between visible and dark matter. I will present recent results on galaxy scaling relations in order to constrain modern structure formation models as well as the nature and distribution of dark matter in galaxies.

Host: Dr. Guy Worthey