In the 1970s, Ray-Chaudhuri, Cameron and Delsarte independently introduced $q$-analogs of designs. It turns out that a subclass — namely $q$-analogs of Steiner systems — are the best possible constant-dimension subspace codes for random network coding (see Kötter, Kschischang 2008). This is analog to the situation in “classical” coding theory, where (combinatorial) Steiner systems are the best possible constant-weight codes for a given length and minimum distance.

In this talk we will give an introduction to the subject and survey recent developments in $q$-analogs of designs and subspace codes. Further, we will point out connections to finite geometry and other areas in coding theory. For an in-depth introduction see also the forthcoming book by Greferath, M., Pavčevič, M.O., Silberstein, N., Vázquez-Castro, M.Á. (Eds.): *Network Coding and Subspace Designs*, Springer (2018).