1145-VT-261 **Duha Hamed*** (math@winthrop.edu), Department of Mathematics, 142 Bancroft Hall, Rock Hill, SC 29733, and **Felix Famoye** and **Carl Lee**. *On Families of Generalized Pareto Distributions: Properties and Applications.* Preliminary report.

In this talk, we introduce some new families of generalized Pareto distributions using the T-$R\{Y\}$ framework. These families of distributions are named T-$Pareto\{Y\}$ families, and they arise from the quantile functions of exponential, log-logistic, logistic, extreme value, Cauchy and Weibull distributions. The shapes of these T-Pareto families can be unimodal or bimodal, skewed to the left or skewed to the right with heavy tail. Some general properties of the T-$Pareto\{Y\}$ family are investigated and these include the moments, modes, mean deviations from the mean and from the median, and Shannon entropy. Several new generalized Pareto distributions are also discussed. Four real data sets from engineering, biomedical and social science are analyzed to demonstrate the flexibility and usefulness of the T-$Pareto\{Y\}$ families of distributions. (Received August 26, 2018)