Multiple mixing models for hyperspectral imagery have been developed over the years. These mixing models allow researchers to extract sub-pixel information from hyperspectral imagery leading to novel detection and classification applications. The most common mixing model is the linear mixing model, which states that each pixel's spectral signature is a linear combination of the unique materials (or endmembers) in the scene. For mixtures of particulates, an intimate mixture model exists that nonlinearly combines the spectra. For mixtures where multiple paths are involved, such as in tree canopies, a bilinear mixture model exists. Recently, new mixing models have emerged which combine different aspects of the aforementioned models. This talk will provide a description of these different mixing models as well as examples of each model applied to both in-lab and remotely sensed hyperspectral data.