**Hyperspectral Imaging Standards Workshop, April 16, 2018. SPIE Orlando, FL**

This is a review of topics that were discussed. It is not a comprehensive list of topics related to the needs of hyperspectral imaging standards.

* Hyperspectral imaging may encompass a wide range of sensing technology and applications. In this effort, we are focused on
  + Spectral range 250 nm to 2500 nm
  + Passive (solar illumination) and broadband illumination
  + Typical but not exclusive to pushbroom architecture
  + It is anticipated that elements of this work will serve as a foundation to other spectral ranges and architectures

The following are areas of interest that where touched on:

* Terminology (closely related to next topic)
  + Formal definition of “hyperspectral”
  + Spectral resolution
  + Spectral sampling
  + Stray light
  + Signal-to-noise ratio
* Calibration/characterization (method and reporting)
  + Lamp (FEL)/plaque method as possible reference for inter-comparisons
  + Stray light
  + Signal-to-noise ratio
  + Spectral smile
  + Spatial resolution (modulation transfer function, MTF)
  + Inherent calibration references (e.g., atmospheric lines)
* Standard Methods
  + White/grey reflectance target
  + Illumination/observation geometries
  + Considerations related to outdoor vs. laboratory (controlled) environment
* Operating conditions and stability
  + High temperature
  + High humidity
* File structure
  + Metadata/header file
  + Compatibility
  + Use existing file format, modify, or new
  + Using something like the ENVI header to encode calibration/instrument performance data – worth exploring.
* Standard Algorithms
  + Can there be a standard algorithm as a benchmark?
  + Spectral angle, PCA, Matched Filter
* Standards development
  + IEEE-SA
  + Established 4001
  + Meeting planned for IEEE IGARSS
  + Nearly 200 names on invite list