users interested in collaborating on this project, either to participate in beta testing or provide test imagery.

Project Objectives:

- Co-registration of input images to subpixel accuracy – input data is presumed to be orthorectified
- Co-registration tools will be tested with NASA satellite data, as well as data from commercial high-resolution satellites, digital camera systems, and scanned aerial photography.
- Software will be delivered to NASA in the format of a software development kit (SDK), to enable integration of these tools into other software.

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**Cropland Classifications of Coincident TM and AWiFS Imagery**

*David M. Johnson, USDA/National Agricultural Statistics Service*

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**Reflectance-based, Vicarious Calibration Results for High-resolution Commercial Sensors**

*Nathan Leisso, University of Arizona*

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**Poly-Pattern Compressive Segmentation of ASTER Data for GIS**

*Wayne Myers, Eric Warner, and Richard Tutwiler, Penn State Institutes of the Environment*

Pattern-based segmentation of multi-band image data, such as ASTER, produces one-byte and two-byte approximate compressions. This is a dual segmentation consisting of nested coarser and finer level pattern mappings called poly-patterns. The coarser A-level version is structured for direct incorporation into geographic information systems in the manner of a raster map. GIS renderings of this A-level approximation are called pattern pictures which have the appearance of color enhanced images. The two-byte version consisting of thousands of B-level segments provides a capability for approximate restoration of the multi-band data in selected areas or entire scenes. Poly-patterns are especially useful for purposes of change detection and landscape analysis at multiple scales. The primary author has implemented the segmentation methodology in a public domain software suite.
Poly-Pattern Compressive Segmentation of ASTER Data for GIS

Wayne Myers¹, Eric Warner¹ & Richard Tutwiler²

Pattern-based segmentation of multi-band image data, such as ASTER, produces one-byte and two-byte approximate compressions. This is a dual segmentation consisting of nested coarser and finer level pattern mappings called poly-patterns. The coarser A-level version is structured for direct incorporation into geographic information systems in the manner of a raster map. GIS renderings of this A-level approximation are called pattern pictures which have the appearance of color enhanced images. The two-byte version consisting of thousands of B-level segments provides a capability for approximate restoration of the multi-band data in selected areas or entire scenes. Poly-patterns are especially useful for processes of change detection and landscape analysis at multiple scales. MOSAIC (Mapping Ordered Segments As Image Compression) serves as a mnemonic for this strategy. The primary author has implemented the segmentation methodology in a public domain software suite.

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