NASA’s Landsat satellites have continuously imaged the Earth for over 40 years making Landsat the longest running, Earth-observing mission to date. The newest satellite in the series, Landsat 8, was successfully launched on February 11th, 2013 and carries the future of Landsat sensors: the Operational Land Imager (OLI) and the Thermal Infrared Sensor (TIRS). Due to the use of modern pushbroom technology, the data from these sensors exhibit an enhanced radiometric fidelity. However, a well-calibrated system is required to take full advantage of their image data.

This presentation summarizes RIT’s contribution to the Landsat Data Continuity Mission over the past 10 years. The Digital Imaging and Remote Sensing Image Generation (DIRSIG) tool will be introduced and its integral role in supporting the development of the TIRS sensor described. RIT’s ongoing role in the calibration process will be discussed and an interesting on-orbit flat-fielding technique known as side slither introduced. Finally, practical uses of Landsat data will be presented with an emphasis on water-based research, which represents RIT’s unique contribution to the Landsat Science Team.