

# GHY 4810/5810- DIGITAL IMAGE PROCESSING

## Fall 2009

### Lab 2 Introduction to NASA - EOS GeoBrain Data Downloads

During the semester you will need to access and download remotely sensed digital data. This lab introduces you to George Mason University's remote sensing GeoBrain website. (<http://geobrain.laits.gmu.edu>).

GeoBrain is a standard-compliant, open, distributed, three-tier Web information and knowledge building system developed for helping educational and research activities in Earth system and geospatial information sciences. Utilizing the latest Web service and knowledge management technologies, the system creates an on-line geospatial data-rich learning and research environment that enables students, faculty members, and researchers from institutes all over the world to easily access, the huge amount of NASA Earth Observing System (EOS) data.

The GeoBrain project was funded by the NASA REASoN program to facilitate earth science research and education at higher-education institutes with innovative technologies (<http://geobrain.laits.gmu.edu>). The GeoBrain system not only makes petabytes of NASA Earth Observing System (EOS) data and information easily accessible to users through any Internet connected computers, but also offers interoperable, personalized, on-demand data access and visualization. In addition, the system provides cutting-edge technologies and capabilities, such as on-line data analysis, geoprocessing modeling and knowledge sharing. Thus, GeoBrain can be used as an on-line geospatial data-rich learning and research environment in four major ways: 1) an unlimited global geo-data source, 2) an on-line data analysis system, 3) an on-line platform for geoprocessing modeling, and 4) a platform for geospatial knowledge sharing.

#### **Lab Objective:**

By completing this lab you should be able to

- Access and learn to use George Mason University's GeoBrain website. <http://geobrain.laits.gmu.edu:81/GeoDataDownload/>.
- Determine spatial areas of interest (AOI); make data query and set query options (e.g. catalog, temporal, spatial, and others).
- Select image data and download the data to your computer.
- Import remote sensing data files (bands) into the image processing software ERDAS IMAGINE, and create a layer stack, display in ERDAS and save to your working directory.

#### **Using Computers in the GIScience labs:**

- Create a directory using your last name and 1<sup>st</sup> initial, e.g., L:\4810: (ColbyJ)
- You should be performing all your work on the local U:\ drive on your computer. On the U:\drive create a similar directory for yourself (e.g. ColbyJ). Your files won't be deleted overnight on this drive, however this is a public drive and your files could be deleted at any time.
- After you have completed your exercise, copy your data files to your directory on the L:\drive.