EarthCube Building Block for Integrating Discrete and Continuous Data (DisConBB)

PI: David Maidment, UTexas; Co-PIs: Dan Ames, BYU; Alva Couch, Tufts U; Ethan Davis, Unidata

Project Vision and Goals:

- **Vision**
  - Advance our ability to study and relate data and models of discrete and continuous phenomena.

- **Goals**
  - Develop a common information model & tools for representing water resource data in both contexts.
  - Apply this in atmospheric & hydrologic modeling.

CI Focus Areas:

- Data Access
- Data Discovery
- Data Integration
- Data Management
- Coupled Modeling
- Cloud/HPC Computing & Workflows
- Vector vs Gridded Timeseries Observations & Measurements
- Web processing interoperability

Geoscience Focus Areas/Drivers:
Scientists in hydrology, hydraulics, atmospherics, meteorology and informatics are working on a demonstration project for national-scale, near-real-time flood forecasting, sponsored by USGS, NOAA National Weather Service, US Corps of Engineers, and FEMA, with 20 other participating institutions, state & local agencies, including emergency response.

Project Outputs:

- **http://earthcube.org/group/discrete-continuous-data-disconbb**
- **Common information model and format conversions** for WaterML $\leftrightarrow$ netCDF-CF
- **Tethys platform**: for modeling app development with open-source components [http://tethys.ci-water.org/](http://tethys.ci-water.org/)
- **Near-realtime workflow**: weather forecast $\rightarrow$ land surface model $\rightarrow$ streamflow routing
- **Challenges**: institutional data barriers; adequate data density; computational efficiencies
- **Approach**: Help initiate and drive National Flood Interoperability Experiment (NFIE)

Status and Schedule (2013-2015):

- Information model & conversions completed
- Coupled-model workflows being refined
- Organizing Summer Institute / hackathon
- Coordinating with other BBs

**Schedule**

- **Start**: Sept 2013
- **Workshops**: Nov 2014, Mar 2015
- **Summer Institute**: June - July 2015
- **Finish**: Aug 2015