GABBs uses OSG Earth as a rendering engine for the more demanding mapping operations such as 3D data visualization. OSG Earth creates projected (flat) maps, as well as geocentric maps as you would see in Google Earth.

GABBs focuses on:
- Easy to use tools and web services for users to self-manage, annotate, share, visualize and publish geospatial data
- Extended Rappture Toolkit and map library Application Program Interfaces (APIs) to support rapid creation of GIS-enabled, interactive online tools
- Applications from scientific use cases of modeling, data analysis and visualization to demonstrate the general applicability of the GABBs software

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**PROJECT DURATION:** OCTOBER 2013 – SEPTEMBER 2018
iData is a data management software building block integrated with HUBzero Project. Users can upload, manage and share their geospatial data sets in their projects. Metadata is extracted automatically upon file upload and geospatial data preview, search, and publication are supported as well. Data sets can be "opened with" appropriate tools directly.

Engaging Science and Education Communities

MultiSpec is a processing system for interactively analyzing geospatial images data such as those collected by satellite and aircraft sensors, biomedical images, etc. The intent is to allow MultiSpec to be used in workflows for image preview and verification, creating pictures which can be displayed in the geoviewers being developed by GABBs from integer and real data types of 8 to 64-bit data values. MultiSpec has been used by researchers, classes, and middle-high school students in summer camps.

The gridded SIMPLE model (SIMPLE-G) created by Agricultural Economists is a multi-region, partial equilibrium model of gridded cropland use, crop production, consumption and trade, a center-piece in food sustainability research using the global-to-local approach. SIMPLE-G uses the pyMapLib library and GABBs data management.

Graduate and undergraduate students are part of the GABBs science and software teams throughout the project. Three undergraduate students participated the 2016 summer Undergraduate Research Internship Program and made valuable contribution to improve usability, enhance functionality and explore interoperability.