Earth System CoG Collaboration Environment

www.earthsystemcog.org

Connecting Projects in the Earth Sciences

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What is CoG?

The Earth System CoG Collaboration Environment supports collaborative Earth science research and product development in virtual organizations comprised of multiple projects and communities. It provides data, metadata, and visualization services along with tools for collaboration, and can be used to host individual projects or to profile projects hosted elsewhere

The name CoG comes from the idea of many gears interlocking in order to make a system work. CoG is also short for "Commodity Governance" - the idea that there are organizational and management characteristics that many projects share, and that exposing those characteristics and linking them is a way to make a complicated "community of communities" run effectively.

Key CoG Features

Collaborative Project Workspaces

Create project workspaces, link them to other projects, edit wiki pages, send project news.

Project Governance

Governance information includes information about management bodies, organizational roles, prioritization strategies, mission, vision, values, mailing lists, and much more. Governance information can be consolidated across a project's network.

Data Services

Search and store data on an integrated Earth System Grid Federation (ESGF) data archive. Combine archived data with images and discussions.

Metadata Services

Establish, discover, display, and compare integrated Earth system modeling metadata.

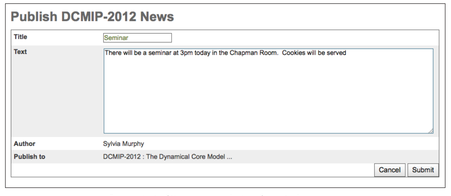
Motivation

CoG seeks to examine the organizational characteristics of community science and infrastructure projects and to recommend structures and processes for their efficient governance and operation.

The CoG team is developing a web-based collaborative environment as a way to put some of these findings into practice.

This environment targets projects that are involved with the generation, management, access, and analysis of scientific data.

News

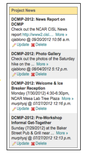


Screenshot of the pop-up window for entering news

The user can determine which projects to send news to (e.g. this project, all child projects, or selected projects).

Other communications options like RSS feed, email, and social networking are under consideration.

Each news item is displayed in the news widget on the right-hand side of the page



CoG Layout

The CoG layout is color-coded. The right-hand side (dark yellow) is where services (data, project views, news) are located. The Central Navigation bar (dark teal) contains links to project-level metadata. On the left (light teal) is an auto-generated navigation system created when projects develop freeform content. Finally, the central portion of the site is a wiki that allows projects to create their own content.

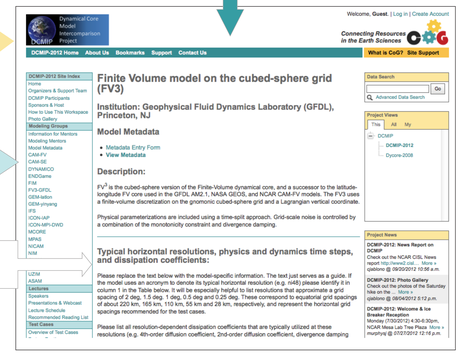
Central Navigation: Governance Information

Right side: Services

Projects can brand the page with their own logo. The default is the project title

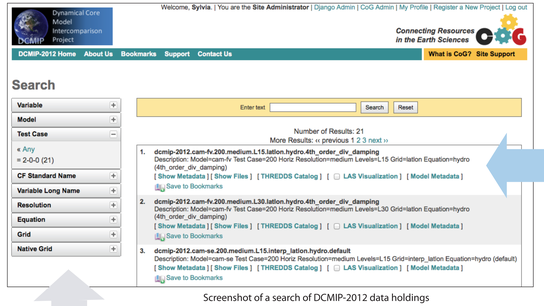
Left Side: Auto-generated navigation of project free-form content

Central Wiki: Freeform content



Screen shot of the CoG project workspace for the 2012 Dynamical Core Model Intercomparison (DCMIP) Workshop.

Data Search



Screenshot of a search of DCMIP-2012 data holdings

Data results include links to the netCDF global attributes "[Show Metadata]", simulation metadata (if it exists) "[Model Metadata]", and the LIve Access Server (LAS) Visualization service.

Search facets can be configured for each project.

CoG is connected to an Earth System Grid Federation (ESGF) Peer to Peer (P2P) data node. Projects can search the entire resident node, any external ESGF node, or just selected datasets on the resident node.

ESGF Earth System Grid Federation

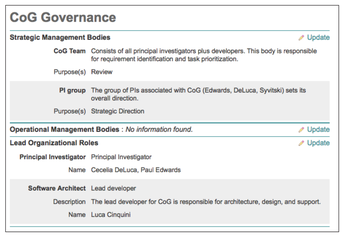
Partners

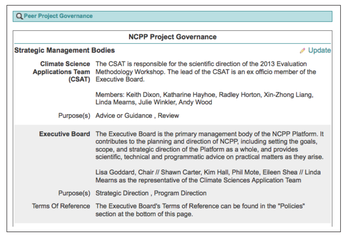
MICHIGAN

NCAR NATIONAL CENTER FOR ATMOSPHERIC RESEARCH

CIRES http://cires.colorado.edu

Governance Information





Example governance information from the CoG project. Example includes information about the management bodies and organizational roles of the project plus a roll-up (i.e. consolidation) of similar information from a peer project.

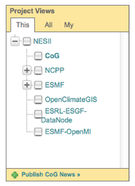
Management of information is a major problem in projects that involve many sub-projects, partners, multiple leads, and many resources. CoG acts as an index into project information that is necessary for coordination and collaboration. It enables projects to retain their own identities, websites, repositories, and trackers but also participate in an organized community environment and enables people responsible for overall coordination to quickly get consolidated views of information.

** Governance information is entered in via web forms.

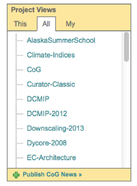
** Governance information can be consolidated and viewed across a project's heirarchy.

** Governance information is linked via the upper navigational bar, which is customizable on a project-by-project basis.

Project Views



This project view: NESII has 6 child projects.



All project view: All the projects on the system.

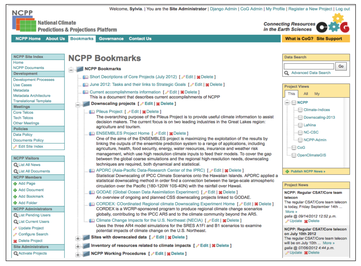
My project view: All the projects the user is a member of.

Projects exist within hierarchies of parents, peers, and children.

These relationships are used to communicate across projects and present views of consolidated information.

The project widget contains three views, "This Project", "All Projects", and "My Projects".

Bookmarks



Screenshot of the National Climate Predictions and Projections Platform's (NCPP) bookmarks.

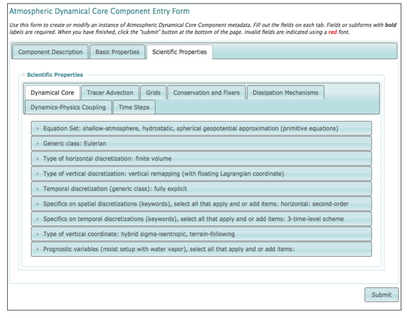
Bookmarks are pointers to data, files, and URLs.

Each Bookmark can have a private wiki-based notes page to facilitate discussions.

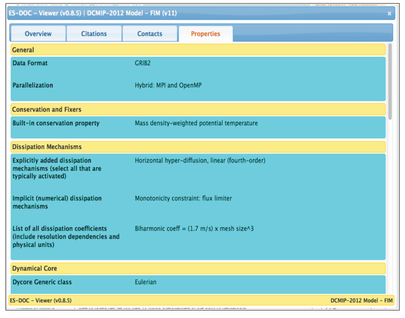
Bookmarks can be organized in a hierarchy of folders.

Each project comes with one bookmarks section.

Metadata Services



The ES-DOC metadata entry form collects standardized Common Information Model (CIM) metadata through a high-customizable web form. The output is saved as an XML file and uploaded to a community CIM repository.



The ES-DOC CIM Metadata Viewer is a lightweight JavaScript plugin that will display any CIM record.

earth system es-doc documentation

The CoG Team is partnering with the international Earth System Documentation (ES-DOC) project to develop and use an Earth System Model metadata entry and view capability. These tools were used by the Dynamical Core Model Intercomparison Project.

CoG is well suited to Model Intercomparison Projects (MIPs), who can use the system to store data as well as create and display metadata.