

## Computing Technology

# Earth Science Data Distribution for Climate Research

Climate research is of great national importance. From model developers to policy makers, there is an overarching need to efficiently access and manipulate climate model data. Building upon an existing Data Portal infrastructure used to distribute model output and forecast data, the NASA Center for Computational Sciences (NCCS) at Goddard Space Flight Center (GSFC) is integrating an Earth System Grid (ESG) Data Node for the distribution of NASA's contributions to the Intergovernmental Panel on Climate Change (IPCC) Fifth Assessment Report.

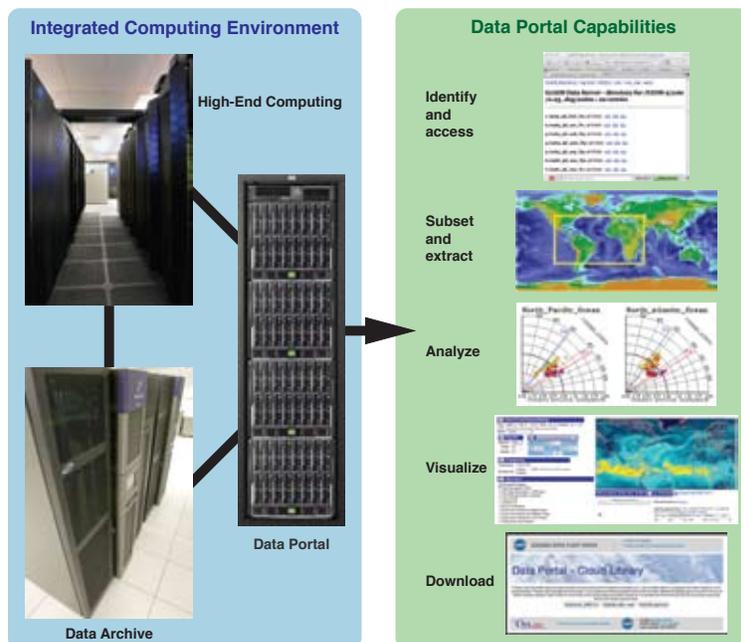
The ESG Data Node is an extension of ongoing work at NCCS to expand the ability of scientists within and outside of NASA to access and use Agency science data obtained from both satellite observations and climate simulations. NCCS is developing and implementing methods to:

- Identify and access large, complex datasets in their unique formats
- Extract data fields of interest
- Perform statistical and visual analyses
- Download reduced datasets to their own environments

This augmentation to NASA supercomputing resources with data distribution capabilities allows unprecedented access to and use of climate simulations on Agency supercomputers, and contributes to the knowledge needed to plan for the use of green technologies.

The NCCS work supports NASA's mission to observe the Earth from space and use the data gathered in a program of scientific research to better understand our planet as a system, and learn how changes to that system will impact mankind. This effort will multiply the value of NASA's investment in Earth observation by making NASA data and climate simulations more easily available to the broader science community.

### NASA Center for Computational Sciences (NCCS)



*With access to the high-performance computing global shared filesystem and the deep archive, the NCCS Data Portal serves a rich collection of Earth system data to the scientific community while maintaining the security of the underlying systems and data assets.*

Harper Pryor, NASA Goddard Space Flight Center  
Harper.Pryor@nasa.gov