



NATIONAL SCIENCE FOUNDATION

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DIVISION OF ATMOSPHERIC AND GEOSPACE SCIENCES

To Whosever it may concern

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I was a program director at DOE Office of Science, Office of Biological and Environmental Research from 2004-2010. During that period, with the Office of Advanced Scientific Computing and Research, our office co-funded a project called the Earth System Grid Center for Enabling Technologies (ESG CET). The lead PI for this project was Dean Williams of Program for Climate Model Diagnosis and Intercomparison (PCMDI) located at Lawrence Livermore National Laboratory.

The goal of this project was to build a “**science gateway**” to climate resources that provides data, information, models, analysis, and visualization tools and computational capabilities for management and analysis. ESG-CET was a multi-institutional effort across various DOE national laboratories, National Center for Atmospheric Research, NOAA/Pacific Marine Environmental Laboratory), and University of Southern California, working to maximize the accessibility of climate simulation data by the international research community.

ESG was responsible for the data management of hundreds of terabytes of climate data ranging from high-resolution modeling, grand challenge-scale computations on leadership computing systems, regional climate modeling, coupled climate/carbon cycle modeling, land/biosphere modeling, atmospheric chemistry modeling, detection and attribution of climate change, and model intercomparison projects.^{1,2}

The ESG-CET subsequently led to Earth System Grid Federation (ESGF³), a project being led by Dean Williams. To date, ESGF has made available over 60 large-scale CMIP5 simulation model runs (more than 1.8 petabytes of data) from 25 worldwide climate research centers spanning 21 countries. ESGF also provides access to 18 highly visible national and international climate data products, with more on the way. Climate scientists anywhere in the world can access the ESGF research centers and climate data products. There are over 25,000 registered sites, with currently more than 25 portals are in use, including one at PCMDI, and over 2.5 Petabytes downloaded by the community.

At NSF, in FY 11, we made ~16 small grants to university researchers for analysis of the Coupled Model Intercomparison Project (CMIP) simulations. They all accessed the data at PCMDI through the use of ESGF. In March 2012, a workshop

on *Coupled Model Intercomparison Project Phase 5 (CMIP5) Model Analysis* was held where PIs presented their results. The website for the Workshop is <http://cmip5.wcrp-climate.org/workshop/sponsors.shtml> A list of publications resulting from the CMIP project may be found at <http://cmip5.llnl.gov/cmip5/publications/allpublications>

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