Dean N. Williams
Supported Projects: (ESGF, UV-CDAT, ACME, PCMDI, DREAM, ASCAC)

Quarterly Report for January 1, 2016 – March 31, 2016

Quarter Accomplishments:
- Attended the American Meteorological Society (AMS) meeting where I presented three presentations on ESGF, UV-CDAT, and DREAM and co-hosted the DOE BER/CESD Data program on Virtual Data Integration **[January 2016]**
- Co-authored European Geosciences Union (EGU) abstract and presentation, titled: "Toward server-side, high performance climate change data analytics in the Earth System Grid Federation (ESGF) Eco-System". **[January 2016]**
- Co-authored EGU paper, titled: "High Performance Scientific Data Analytics at large Scale", authors: S. Fiore, D. N. Williams **[January 19, 2016]**
- Wrote letters of support, proposals, whitepapers and subcontracts **[January - March 2016]** for:
    - Analysis white paper: "Better Tools for Better Climate Science"
    - Hardware white paper: "LLNL AIMS Request for Hardware"
    - The Department of Computer Science, Univ. of Arizona, "NRT-DESE: Big Data to Big Ideas: Advancing Terrestrial Science in a Data Rich Environment"
    - The National Center for Atmospheric Research (NCAR), "Organizing Modelers, Organizing Data: Infrastructures and Institutions for Model Intercomparison Projects (MIPs)."
    - DOE laboratories, NASA, universities, and one private contractor
- Georgetown University, presented and discussed AIMS software development efforts : "Climate Science and Environmental Security: Climate Science Research and Earth System Grid Federation"
- Co-author of the World Climate Research Programme (WCRP) Report, titled, "Report of the nineteenth session of the Working Group on Coupled Modelling (WGCM), Dubrovnik, Croatia, (18-20 October 2015), January 2016 WCRP Report No. 2/2016 **[January 2016]**
- Participated on a National Academy of Sciences panel charged with examining the use of multiple data sources for use in the Federal Statistical agencies (e.g., Census Bureau, Bureau of Labor Statistics, National Center of Health Statistics). Shared my thoughts and experiences in building the Earth System Grid Federation and other consortium of competing interests as digital data resources increase in volume (so-called big data). **[February 25, 2016]**
- Front page of the Eos journal, **Williams, D. N.** (2016), Better tools to build better climate models, *Eos, 97,* DOI: 10.1029/2016EO045055. Published on 9 February 2016. **[February 2016]**
- Co-authored report with Eli Dart, Mary Hester, Jason Zurawski, … **Dean Williams**, "Biological and Envirionmental Research Network Requirements Review Final Report", February 2016, http://www.es.net/assets/pubs_presos/BER-Net-Req-Review-2015-Final-Report.pdf. **[February 2016]**
- **Dean N. Williams** et al., DRAFT of the "5th Annual Earth System Grid Federation Face-to-Face Conference Report", **[February 2016]**
- Purchased additional Data Transfer Nodes (DTNs) for large-scale data movement and replication **[February 2016]**

- Lead author, **Dean N. Williams**, Giriprakash Palanisamy, Kerstin Kleese van Dam, U.S. DOE. 2016. "Working Group on Virtual Data Integration: A Report from the August 13–14, 2015, Workshop". DOE/SC-0180. U.S. Department of Energy Office of Science. DOI:10.2172/1227017. **[March 2016]**
- Led and participated in daily, weekly, and monthly teleconferences for leading projects: ESGF, ACME, UV-CDAT, and DREAM **[January - March 2016]**
- Led or participated in DOE, NASA and NOAA workshops or meetings such as: DOE ASCR Experimental and Observational (EOD) workshop, LBNL and LLNL meeting at LBNL; the DOE ACME Advisory Committee Meeting, the DOE ASCR – BER Exascale Workshop; and the DOE ASCAC Meeting **[January - March 2016]**
- Participated in several new advisory committees **[January - March 2016]**
- Finalized ESGF Software Security Plan **[March 2016]**

Next Quarter's Roadmap
- Final release of 5th Annual Earth System Grid Federation Face-to-Face Conference Report" **[April 2016]**
- I will attend several meetings and workshops in D.C **[April - June 2016]**
- I will continue to lead and/or participate in several daily, weekly and monthly teleconferences. **[April - June 2016]**
- I will participate in NSF's review of Computational and Data science at the National Center for Atmospheric Research (NCAR). The NCAR computing and data review will be held in Boulder, CO from May 24, 2016 to May 26, 2016. These reviews are an important part of NSF's oversight of NCAR and will reveal how well NCAR is accomplishing its mission. **[May 2016]**
- Release of ESGF Implementation Plan and present to the 17 ESGF Team Leads spanning from the user interface to server-side analysis
- I will continue to lead ESGF, UV-CDAT, ACME Workflow, DREAM, and other software development efforts.
- I will continue chair and participate on several review and advisory committees.

Resources Required to Achieve Goals
- Hardware funding is needed for AIMS, PCMDI, and ACME to achieve their goals.
- Clusters and GPUs are needed for visualization development and server-side (remote) computing.