

**Zeshawn Shaheen**  
**Supported Projects: PCMDI, E3SM**

**Quarterly Report for January 1, 2018 – March 30, 2018**

**Quarter Accomplishments:**

- E3SM Diagnostics
  - Implemented a workaround for multiprocessing issues with vcs (January 2018)
    - But then a fix for something fixed the multiprocessing issue, so no workaround is needed now. (February 2018)
  - Released v1.1.1 of E3SM Diagnostics. (January 2018)
  - Added provenance to E3SM Diagnostics. (January 2018)
  - Allowed for parameters to be inputted via the command line only January 2018)
  - Had a meeting with PNNL and ORL people regarding E3SM Diagnostics (January 2018)
  - Created viewer for Taylor diagrams (February 2018)
  - CDAT info doesn't ask for permission to log every month now, read configuration from environmental variable. (February 2018)
  - Released v1.2.0 of E3SM Diagnostics (February 2018)
  - Support to granulize parameters, so longer runs (February 2018)
  - Released v1.2.1 of E3SM Diagnostics (February 2018)
  - Cleaned up the software directory and overall polishing of the software (February 2018)
  - With Jill, converted the default diagnostics run from json files to cfg files.
  - Added a new parameter, run\_type, to allow for model vs model, model vs obs, or obs vs obs runs. (February 2018)
  - Released new installation yml files that install a missing dependency. (March 2018)
  - Created installation instructions for Lina to run the 4 to 6 runs of E3SM Diagnostics with different environments. (March 2018)
  - Miscellaneous fixes for the forthcoming release. (March 2018)
  - Expanded and added to the documentation. (March 2018)
  
- E3SM HPSS Archiving
  - Started on the project with Chris. (February 2018)
  - Added test suite to test various things such as: creating an archive, updating an archive, extracting an archive, creating an archive with hard and softlinks, checking the integrity of the data, and more. (March 2018)
  - Restructured the code to make it installable. (March 2018)
  - Various bug fixes related to hard and softlinks. Also fixed issues of the database not saving the correct size of the files in a tar archive. (March 2018)

- CDP
  - Can define default values for parameters in the Parser, in addition to the Parameters class. (January 2018)
  - Updated CDP to have just command line arguments without any parameter files. So no -p or -d. (January 2018)
  - Work on common input arguments (CIA) with Charles and Peter. (January 2018)
  - Changed the viewer so that it can use provenance. (January 2018)
  - Released v1.2.0 of CDP. (January 2018)
  - No need to define a Parameter class to use a Parser. (February 2018)
  - Released v1.2.1 of CDP. (February 2018)
  - Released v1.2.2 of CDP. (February 2018)
  - Support for the granulate parameter, splits a large parameter into a set of smaller parameters. (February 2018)
  - Released v1.2.3 of CDP. (February 2018)
  - Python 2 and 3 support, with nightly builds working again. (February 2018)
  - Added support for cfg files to have multiple runs with the same title. Prevents users from having to come with a unique name for each run. Tests for this also added to the test suite. (February 2018)
  
- Miscellaneous
  - Supported users (Peter, Qi, Jerry, Walter, PNNL people, ORL people) with issues related to the software I support (E3SM Diagnostics, PMP, CDP). (January – March 2018)
  - Wrote the Diagnostics Working Group report for the ESGF F2F Meeting. (February 2018)
  - Discovered why the processflow was creating different diagnostics when compared to just running E3SM Diagnostics by itself. (February 2018)
  - Created instructions for Kitware to recreate the VCS multiprocessing bug. (March 2018)

### **Next Quarter's Roadmap**

- Must meet with Charles and Denis and come up with a roadmap to adding Xarray and more to CDMS. I can do this, but with the support of one/both of them. (April – June 2018)
  - Need to meet with Charles, Denis and other and come with a concrete plan.
  - Then implement the plan.
- Containerize E3SM Diagnostics to make installation and running easier. This might also lead-in to the containerization of all parts of the E3SM Workflow. (June 2018)

- With the upcoming downtime around May, June of this year, I need to reach out to sysadmins at NERSC and other sites and see what containerization solutions they use.
- Make more progress on ACME Diagnostics roadmap (April – June 2018)

**Resources Required to Achieve Goals**

- Support with CDMS to implement Xarray.