Sterling, Baldwin
Supported Projects: ACME

Quarterly Report for July 1, 2016 – September 30, 2016

Quarter Accomplishments:
- I built out the dashboards diagnostic run capability, creating the poller app in the front end to store run data, as well as creating the backend poller from scratch.
- I wrote the first couple job handlers for the backend poller, allowing it to execute metadiag runs, store the output, and return the images as well as the console output and .nc files to the frontend.
- I completely rewrote the dashboard frontend UI using angular JS. This was a complete rebuild for all HTML, JavaScript, and CSS. All major UI components are now their own self-contained elements.
- I moved the dashboard backend into the most modern stable Django version, enabling the use of websockets for full duplex client-server communication. We can now push updates out to the user as events are triggered on the server (an impossibility with AJAX).
- I coordinated planning sessions to create the infrastructure goals needed to get the dashboard and the automated model execution closer to reality.
- I polished and updated my paper Science as a Service, and submitted to - and was accepted by - the IAENG International Journal of Computer Science.
- I refactored the way diagnostic configurations are stored in the dashboard database, its now impossible to save or start a run with an invalid configuration.

Next Quarter's Roadmap
- Will do 1: I'll have a more polished demonstration of the dashboard ready for the ACME meeting in Boulder, CO.
- Will do 2: I'll continue to coordinate and develop efforts to get automated publishing to ESGF implemented as part of the automated workflow. This will entail working with the security teams at our target compute facility as well as the ESGF publication team.
- Will do 3: I will build out Ben Mayers shim communication layer, expanding our ability to interface with Pegasus, moving towards the goal of test model runs
- Will do 4: I will continue to build out the dashboard front- and back-end, adding in UI elements for publication and model configuration.

Resources Required to Achieve Goals
- Need to discuss with security establishment at HPC facilities to determine how we're going to automatically move data out of secure environment.
- Need to discuss with infrastructure management at HPC facilities to ensure we have the resources we need.