

Abstract submission for the DOE TES and SBR Programs' ESS PI Meeting

Program: Terrestrial Ecosystem Science (TES)

PI: Stan Wullschleger

Title: The NGEE Arctic Data Archive: Data Sharing, DOI Services, and Modeling Archive

Authors: Terri Killeffer², Les Hook¹, Ranjeet Devarakonda¹, Misha Krassovski¹, Michael Crow¹, and Tom Boden¹

Author Affiliation: ¹ Environmental Sciences Division, ORNL and ²Information International Associates, Oak Ridge, TN

Email address: killefferts@ornl.gov; hookla@ornl.gov; devarakondar@ornl.gov; krassovskimb@ornl.gov; crowmc@ornl.gov; bodenta@ornl.gov

Abstract:

The Next-Generation Ecosystem Experiment (NGEE) Arctic project is composed of an array of researchers and disciplines across multiple national laboratories and universities. Project-generated datasets will improve representation of complex interactions of arctic land surface and subsurface processes in Earth System Models (ESMs). Because of the iterative approach of modelers, researchers are encouraged to share their data early and often for use and input into research needs. The NGEE Arctic Data Management Team (DMT) at ORNL, with assistance from Data Representatives at each collaborating institution, are charged with collecting, archiving and sharing data within the project, the larger scientific community, and the public. Access data at the NGEE Arctic home page [<http://ngee-arctic.ornl.gov>] and click "Search Data." Moving forward into Phase 2 of the project, the DMT would like to present several areas of focus:

Data Sharing Metrics

To track data sharing progress, we developed metrics for the number of metadata records available, planned datasets, datasets available to the project or public, and number of data downloads. The project is striving to meet the DOE Office of Science Statement on Digital Data Management requiring data that supports or validates research results in a publication are published at the same time the paper is published.

DOI Services

All datasets intended for public sharing receive a Digital Object Identifier (DOI). Researchers are highly encouraged to request a DOI from the DMT early in dataset development so the DOI is available for inclusion in manuscripts submitted for review. We are beginning to track the associations of NGEE Arctic datasets in NGEE Arctic related publications and attempting to track in publications outside the project using NGEE Arctic data. We intend to share this cross-referencing of DOIs and publications with publishers to assist with their metrics as well as NGEE Arctic metrics of use and re-use of datasets.

Modeling Archive

In consultation with the NGEE Arctic Modeling Team, the DMT has developed an approach for archiving modeling products. The DMT is customizing the Metadata Entry and Data Upload Tool to assist in model archive submissions and the creation of landing pages. The landing page will include a DOI and citation for the modeling archive plus driver data, code, configuration documentation, model output, post-processing documentation, and condensed results (e.g., figures). The modeling archive provides documentation and reproducibility of model simulations that are being requested by journals and meet the aforementioned requirements of DOE.