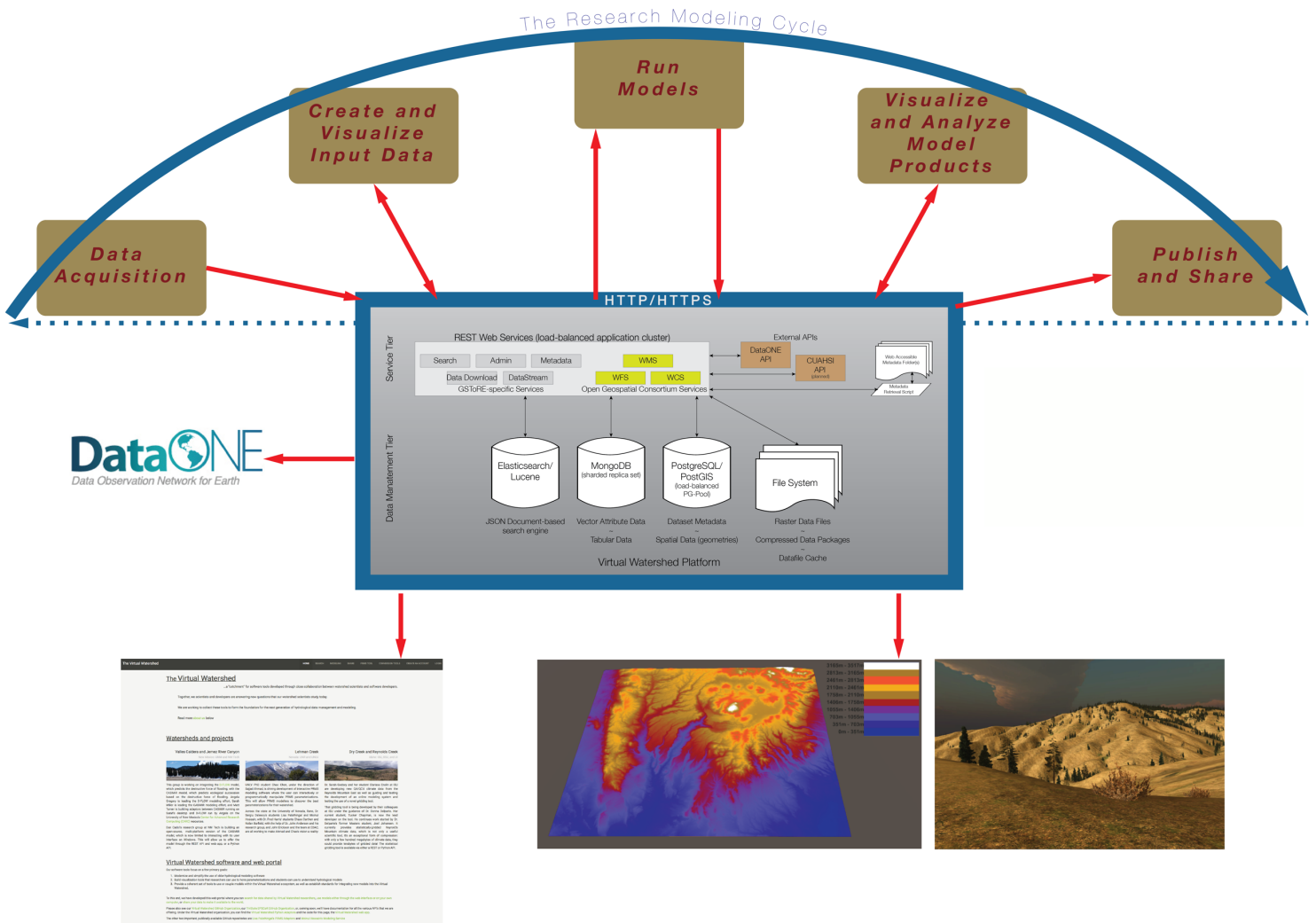


# WC-WAVE Cyberinfrastructure Developments for Web-enabled Modeling

## NSF Highlights — Track 2: Cyberinfrastructure



*Linkages between the watershed modeling, data visualization, web-based model configuration and execution environment, external DataONE discovery system, visualization tools and the virtual watershed platform.*

**Project Team:** (Platform developers) Soren Scott, Renzo Sanchez-Silva, Hays Barrett, William Hudspeth; (Lead Adapter Developer) Matt Turner; (Lead Visualization Developer) Chase Carthen; (Watershed Science Component Lead) James McNamara; (Visualization Component Lead) Fred Harris; (Virtual Watershed Platform Component Lead) Karl Benedict; (Data Platform State Leads) Luke Sheneman, Sergiu Dascalu, John Savickas

**Outcome:** Multiple capabilities have been developed in support of the concept of a Virtual Watershed – a combination of tools and data that enable rapid and efficient execution of watershed-scale models that combine vegetation, soil, terrain, and weather to develop predictions of hydrologic processes. The Virtual Watershed lower the barriers to entry and use for new and experienced modelers by providing both user-friendly and programmatic capabilities for automated model configuration, execution, and multi-model coupling; and enabling efficient data management associated with those models.

**Impact/Benefits:** Environmental modeling is an increasingly multi-disciplinary activity and the developed web interface and associated tools (available through the Virtual Watershed Web Portal) allow for both novice and expert modelers to focus on the scientific questions that models are intended to answer instead of “wrangling” the bits required to set up and run the models. The Virtual Watershed Platform that provides the shared data management, discovery, and access system for data both produced and used by models accelerates the use and usability of environmental data for research, education, and policy making. The computer code developed by the project is available for free download, reuse, and modification through a publicly accessible GitHub repository so that a larger community of users and developers can participate in the continued development of the capabilities developed during the project.

**More Information:**

Project GitHub Repository: <https://github.com/orgs/VirtualWatershed/dashboard>

Virtual Watershed Web Portal: <https://virtualwatershed.org>

*Photo provided by Karl Benedict, University of New Mexico, kbene@unm.edu*